ABSTRACTS OF THE 22ND SPACV NATIONAL MEETING

SESSÃO MELHOR COMUNICAÇÃO ORAL 1

CO 01 Complicações de acesso arterial em doentes sob oxigenação por membrana extracoporal – uma análise restrospectiva

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CHUSJ

INTRODUÇÃO: A utilização de Oxigenação por Membrana Extracorporal (ECMO) tem visto uma utilização crescente nos últimos anos. Nos casos de falência cardíaca, habitualmente é utilizado ECMO veno-arterial (ECMO-VA), na maioria com acesso arterial pela artéria femoral comum. Quando presentes, as complicações do acesso arterial podem ter importantes repercussões nestes doentes. Através deste trabalho pretende-se analisar a incidência de complicações arteriais de ECMO-VA periférico em adultos, seus fatores associados e respetiva intervenção por Cirurgia Vascular.

MÉTODOS: Efectuou-se uma análise retrospetiva de todos doentes consecutivamente submetidos a ECMO-VA entre 2017-2021 num centro terciário. Foram coletadas informações relativamente ao ECMO, características e comorbilidades dos doentes, bem como intervenções por Cirurgia Vascular. Os doentes foram divididos em dois grupos: com complicações de acesso e sem complicações de acesso.

RESULTADOS: Durante o período em análise, 142 doentes foram propostos para ECMO-VA. Destes, 28 foram excluídos por envolverem doentes em idade pediátrica (n=16), canulação arterial central (n=10) e insucesso na canulação (n=2). Todos (n=114) os doentes foram canulados com cânulas com perfil entre os 15-17 Fr, sendo que 38.6% (n=44) tiveram complicações e 28,9% (n=33) necessitaram de intervenção cirúrgica. A isquemia aguda (45,5%; n=20) e o pseudoaneurisma femoral (40,9%; n=18) constituíram as complicações mais frequentes. Consequentemente, as cirurgias mais comuns foram a tromboembolectomia cirúrgica, com ou sem procedimento associado (11,5%; n=13), bem como a correção cirúrgica de pseudoaneurisma femoral (7,1%; n=8). Os doentes com complicação arterial apresentaram menor prevalência de insuficiência cardíaca (IC) (9.1% vs 28.6%, p=0.013) e dislipidemia (20.5% vs 38.6%; p=0.046). O tempo total de ECMO foi superior nos doentes com complicação arterial (mediana 12.5 vs 5.0; p=0.034)

CONCLUSÃO: A taxa de complicações de acesso arterial em contexto de ECMO-VA é elevada, com uma parte significativa a requerer intervenção cirúrgica. Estes achados reforçam o papel da Cirurgia Vascular no âmbito do tratamento do doente em ECMO e a necessidade da sua integração em equipas dedicadas.

CO 02 Exploring the differences in skeletal muscle between patients with chronic limb-threatening ischemia and claudication

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INTRODUCTION: The human body contains around 600 muscles and skeletal muscle (SM) plays a key role in postural retention, in the maintenance of body temperature, as well as in locomotion. However, it is now firmly established that SM is not a simple passive effector but rather an endocrine organ that produces proteins communicating with other organs. We aim to compare the characteristics of SM of patients with chronic limb-threatening ischemia (CLTI) to claudicants.

METHODS: An observational, single-center and prospective study was conducted. Patients with PAD were included. We collected clinical information and data correlated with SM characteristics: quantity, strength, SM proteins and histology. All subjects performed a CT scan with to determine the quantity (mass and area) of SM. The patients' hand grip strength and serum levels of SM proteins: irisin, myostatin, resistin and IL-6 were measured. Samples of SM were collected, during surgical intervention from the femoral region. The samples were submitted to histological characterization on haematoxylin-eosin and to immunohistochemical analysis to detect CD 45+ leucocytes and CD 163+ macrophages.

RESULTS: We included 119 subjects (mean age: 67.58 ± 9.60 years-old; 79.80% males), 65 claudicants. CLTI had statistically significant lower SM density and area, when compared with claudicants(Table 1). 40 samples of SM were submitted to a histological analysis. No difference was found in SM fibers preservation, trauma or haemorrhage (on haematoxylin-eosin staining)(Table 2). However, in the immunohistochemistry study we found more inflammatory cells CD 45+ leucocytes than in patients with CLTI [CD 45+ > moderate (2;3;4): claudication (n=14): 4; 28.57%; CLTI (n=25): 16; 64.00%; p=0.034]. No difference was found on CD 163+ macrophages between patients with CLTI and claudication. No differences were registered in serum levels on irisin and myostatin between CLTI and claudicants, but patients with CLTI had a higher serum level of IL-6 and IL-8(Fig 1).

CONCLUSION: CLTI had a lower SM density and area and a higher number of intra-muscular inflammatory cells when compared to claudicants. CLTI also had higher levels of IL-6 and IL-8 that has been found to be associated with a

decrease in skeletal muscle mass in other disease settings. This suggests that the SM of CLTI patients is involved in an inflammatory process that can be a cause or a response to SM loss.

Tab. 1- Characteristics of skeletal muscle, area and density (determined with CT scan) and strength in patients with claudication and with CLTI

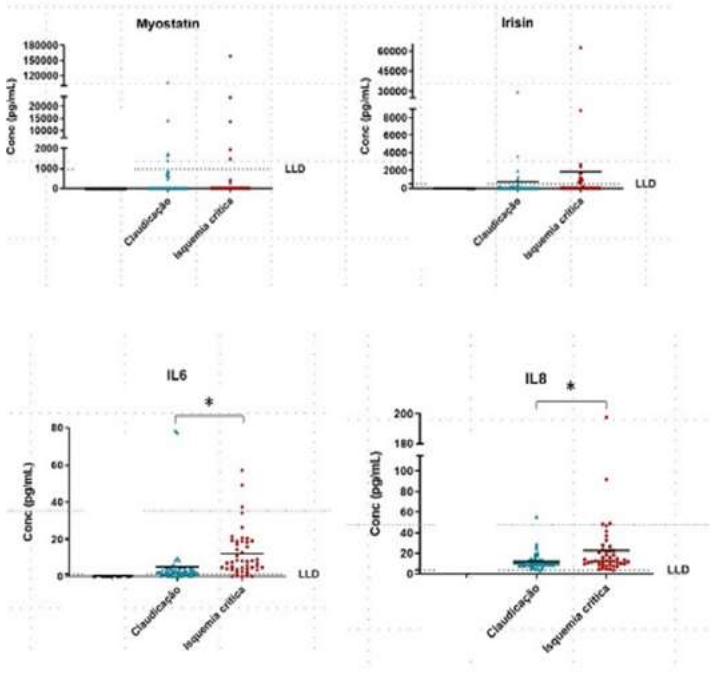
	Claudication (n=65)		CLTI (n=54)		U	*p*-value	r
	Median	IQR	Median	IQR			
Area (mm^2)	15543.50	3701.00	13601.00	4236.56	995	**0.044***	- 0.199
Density (HU)	20.80	17.05	11.25	20.13	855	**0.007***	- 0.269
Strenght (kgf)	24.00	12.90	22.35	17.32	1628	0.591	- 0.050

Note: Application of Mann-Whitney U test. Area, density of skeletal muscle and strenght do not have a normal distribution, determined with Shapiro-Wilk test ($p < 0.05$).
CLTI: chronic limb-threatening ischemia

Tab. 2- Histological characteristics skeletal muscle (haematoxylin-eosin staining) of the PAD patients

	Claudication (n=14)	CLTI (n=26)	X^2	df	*p*-value	Phi
Well preserved skeletal fibers	8; 57.14	18; 69.23	0.584	1	0.445	- 0.121
Trauma (n/%)	2; 14.29	2; 7.69	0.440	1	0.507	0.105
Hemorrhage (n/%)	0;0	6; 23.07	3.801	1	0.051	- 0.308
Inflammatory cells	5; 35.71	13; 50.00	0.750	1	0.386	- 0.137

Note: Application of Chi-Square test
CLTI: chronic limb-threatening ischemia



CO 03 Post-implantation syndrome incidence is higher after complex endovascular aortic procedures than after standard infrarenal repair

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INTRODUCTION: Post-implantation syndrome (PIS), characterized by malaise, fever and increased inflammatory markers, is a common occurrence after endovascular aneurysm repair (EVAR), causing prolonged hospitalization and increased cost.

OBJECTIVE: The authors aimed to determine the incidence and short-term outcomes of PIS after fenestrated or branched procedures in aorto-iliac aneurysms, comparing to standard EVAR.

METHODS: We present a retrospective comparative study from a tertiary academic institution. From January 2015 to June 2021, all patients who underwent elective EVAR with polyester stent grafts were considered. Two groups, standard EVAR (sEVAR) and complex EVAR (cEVAR) were defined. The latter included visceral fenestrated/branched or iliac-branch stent grafts. The primary endpoint is the incidence of PIS within 5 days of the index procedure. Secondary endpoints are short-term complications and risk factors for PIS. A multivariable model was constructed to correct for confounders.

RESULTS: Overall, 250 patients were included, 165 (66.0%) sEVAR and 85 (34.0%) cEVAR. Patients treated with cEVAR were younger, had greater tobacco exposure, less peripheral arterial disease and larger aneurysms. Complex procedures took longer, required more iodinated contrast and were more likely to have intraoperative complications. PIS incidence was 24% (n=60), significantly higher in cEVAR (35.3% vs 18.2%, P=.003), and increased with the complexity of the procedure (EVAR:18.2% vs EVAR+ IBD:25.0% vs b/fEVAR:37.7%; P=.006). On multivariable analysis, cEVAR (OR 2.492; 95% CI 1.132-5.484; P=.023) was associated with a significantly increased risk of PIS. No differences in short-term outcomes according to PIS status were noted. Group sub-analysis for cEVAR patients did not reveal any significantly different outcomes according to PIS occurrence.

CONCLUSION: cEVAR procedures are associated with a significantly increased rate of PIS, compared to standard infrarenal repair. cEVAR stent grafts appear to impact the chance of developing PIS. In our series, PIS did not have a significant impact on perioperative outcomes after cEVAR.

CO 04 Impact of sodium-glucose cotransporter 2 inhibitors (SGLT2i) on lower limb amputation

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INTRODUCTION: Sodium-glucose cotransporter 2 inhibitors (SGLT2i) are a class of drugs used to treat type 2 diabetes mellitus. In 2017 the U.S. Food and Drug Administration and the European Medicines Agency issued a warning regarding an increased risk on lower limb amputation (LLA) for patients taking canagliflozin, which led to ongoing investigations concerning its safety.

METHODS: Using *Pubmed* database we performed a literature review of the effects of SGLT2i on lower limb amputation and its safety on patients with peripheral arterial disease (PAD). More so, we analyzed whether these reports were a class effect or a specific drug consequence. Secondary outcomes were major adverse cardiovascular events (MACE).

RESULTS: A total of 197 articles were reviewed, of which 27 were selected. Seven randomized multicentric studies and 20 retrospective observational studies (15 multicentric or large database analysis), in a total of 1 338 838 patients. Fourteen studies reported results on the use of specific drugs (9 empagliflozin; 9 dapagliflozin; 8 canagliflozin), whilst the remaining reported SGLT2i's effects as a class. Thirteen studies showed increase and thirteen showed no differences in LLA on patients taking SGLT2i; 1 study showed a decrease in risk. Reports were similar among different SGLT2i: canagliflozin, 4 studies reported significant increases on LLA while 2 reported no differences; dapagliflozin and empagliflozin had the same results with 4 studies reporting increased rates and 4 reporting no differences on amputation rates. Canagliflozin was the SGLT2i most commonly associated with amputation. Comparative studies with different antidiabetic agents showed higher amputation rates for SGLT2i vs Dipeptidyl Peptidase IV (DPP4) inhibitors in 3 studies and no differences in another 3 studies, while SGLT2i vs Glucagon-like Peptide-1 (GLP1) agonists showed increased amputation rates on 3 studies and similar effects in a single study. All studies reporting MACE showed lower rates in patients taking SGLT2i. Concomitant PAD and SGLT2i was identified as a risk factor for amputation.

CONCLUSION: Despite multiple studies, there is still conflicting evidence on the impact of SGLT2i on LLA. This effect seems to be shared by all SGLT2i, with particular higher rates with canagliflozin. As vascular surgeons often deal with patients suffering from severe cardiovascular disease, one should be aware on whether the advantages on MACE outweigh a possible higher risk of amputation.

CO 05 Intraoperative unfractionated heparin administration can reduce short-term mortality and thromboembolic events after emergent repair of ruptured aortic aneurysms

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INTRODUCTION: In ruptured aortic aneurysms, practices surrounding administration of unfractionated heparin (UFH) are highly variable and surveys report low usage rates. Nevertheless, these patients present significant rates of thromboembolic events (TE) and cardiovascular death. Evidence on this topic is scarce and focused on patients treated with open repair (OSR).

OBJECTIVE: To determine the influence of UFH administration on perioperative outcomes of patients operated for ruptured aortic aneurysms.

METHODS: Retrospective comparative study from a tertiary academic institution. From 2011 to 2022, all consecutive patients treated for ruptured aortic aneurysms with OSR or endovascular repair (EVR) were considered. The primary outcome is mortality. Secondary outcomes are survival free from TE and TE rates. Safety outcomes are perioperative transfusion requirements and secondary intervention due to haemorrhage. Multivariable regression models were implemented to examine the outcomes.

RESULTS: The study included 264 patients, with a mean age of 72.3 years and 90.5% male. UFH was used in 40,2% and EVR in 56,1% patients. The no-UFH group presented higher rates of pre-operative cardiac arrest (P=.011), lowest systolic blood pressure ≤80mmHg (P=.024), creatinine >160mmol/L (P=.030), loss of consciousness (P<.001) and underwent more frequently OSR (P<.001). Short-term survival and survival free from TE were improved in the UFH group (83% vs 58.6%, P<.001 and 68.9% vs 36.6%, P<.001, respectively). TE were more frequent in the no-UFH group (37.3% vs 17.9%, P=.001), On multivariable analysis, intraoperative UFH was associated with reduced mortality, adjusted OR (aOR) 0.496 (95% CI 0.249-0.892), P=.047 and survival free from TE, aOR 0.434 (95% CI 0.228-0.827), P=.011. UFH group had less perioperative blood product requirements (P<.001) and secondary interventions due to hemorrhage (P=.01).

CONCLUSION: In this cohort, intraoperative UFH administration was safe and associated with reduced perioperative mortality and TE. This benefit appears, in part, related to a reduction in early TE.

CO 06 The modified 5-factor frailty index (mFI-5) as a predictor of early mortality for patients treated with TEVAR

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INTRODUCTION: Thoracic endovascular aortic repair (TEVAR) has expanded access to descending thoracic aortic repair particularly for elderly and frail patients. This high-risk population has limited long-term overall survival, so appropriate patient selection is required to optimize patient benefit and resource utilization. The modified 5-factor frailty index (mFI-5) is a simple, validated score to quantify frailty in surgical patients across multiples sub-specialties, including vascular surgery. Although recent literature acknowledges the association of frailty with worse clinical outcomes in aortic pathologies, none have yet studied the impact of mFI-5 in patients treated with TEVAR.

METHODS: We retrospectively identified patients treated with TEVAR in our institution from 2010 to 2022 for descending thoracic aortic aneurysms (DTAA), chronic type-B aortic dissection (CTBAD) and penetrating aortic ulcer (PAU). We divided our sample according to each pathology and frailty was quantified using mFI-5. Frailty was correlated with the primary endpoint of 30-day mortality. Predictors of 30-day mortality were identified using logistic regression.

RESULTS: A total of 73 TEVAR procedures were performed: 48 for DTAA, 6 for CTBAD and 19 for PAU. The 30-day mortality rate was 10.4%, 16.7% and 10.5%, respectively (P = 0.84); these patients scored a median preoperative mFI-5 value of 0.20 (0.20-0.40), 0.20 (0.15-0.40) and 0.20 (0.20-0.40), respectively (P = 0.67). Increased frailty score was significantly associated with higher 30-day mortality for DTAA patients (P < 0.001) but not for CTAB (P = 0.90) and PAU (P = 0.07) (figure 1). Multivariate analysis identified mFI-5 as an independent predictor of 30-day mortality (OR = 1.42 per 0.1 unit increase in mFI-5 score; P = 0.002) and overall complications (OR = 8.88 per 0.1 unit increase in mFI-5 score; P = 0.016) in the entire cohort.

CONCLUSION: Frailty, measured using the mFI-5 score, is an independent predictor of early mortality and overall complications after TEVAR. It is a simple tool that may help identify patients at high risk of adverse postoperative events and guide the decision on how to best manage them.

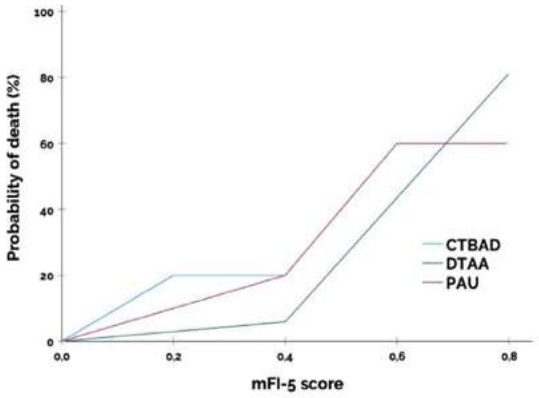

Figure 1. The relationship between frailty, measured with mFI-5 score, and 30-day mortality for CTBAD (blue), DTAA (green) and PAU (red).

CO 07 Are statins effective on hemodialysis patients?

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INTRODUCTION: Patients with chronic kidney disease on hemodialysis constitute a large proportion of patients treated in the vascular surgery field, either for occlusive arterial disease of the lower limbs or for cerebrovascular disease. Clinical data on the protective statin effect on this group are scarce and conflicting results exist regarding cardiovascular, cerebrovascular, and limb outcomes.

METHODS: We performed a thorough electronic search of the literature using PubMed and Embase databases. We used the following combination of keywords in our search strategy ((statin effect) OR (LDL lowering effect) AND (hemodialisys) AND (vascular events) OR (limb revascularization)). After duplicate removal, titles, and abstracts screening and fully reading the remaining articles, we end up with 12 articles to compose our review. Only articles in English published in the last 10 years were included

DISCUSSION/CONCLUSION: Several randomized trials and meta-analyses revealed that statins have no effect on cardiovascular outcomes, even when LDL is effectively lowered, since cardiovascular risk in the dialysis population, is owed to nonatherosclerotic cardiac events. But even myocardial infarction and stroke are not significantly reduced, probably due to the different inherent cholesterol metabolism in these patients and its resistance to statins. Also, the statin pro calcifying effect, through vitamin K metabolism which is known to inhibit vascular calcification and, usually depleted in dialysis patients, can also play a role in accelerating vascular calcifications. Specific studies after carotid endarterectomy

on dialysis patients comparing outcomes in relation to statin use were not found in this search. After lower limb revascularization, a retrospective cohort found a protective association of statin therapy regarding the risk of all-cause death, cardiovascular death, and adverse limb outcomes. Currently, while American Heart Association does not have specific recommendations for statin therapy on dialysis patients, Kidney Disease Improving Global Outcomes (KDIGO) recommends avoiding its initiation but not stopping therapy if the patient is already receiving it. Further analyses should focus on this subgroup of dialysis patients with concomitant significant peripheral artery occlusive disease.

SESSÃO MELHOR COMUNICAÇÃO ORAL 2

CO 08 Endovascular treatment versus open surgery for iliac artery aneurysms: a systematic review and meta-analysis

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CHVNGE

INTRODUCTION: The natural history of iliac artery aneurysms(IAA), as well as treatment outcomes, is poorly understood due to their rarity, and evidence is lacking regarding the best treatment approach. The aim of this systematic review and meta-analysis was to compare the outcomes of endovascular treatment(ET) versus open surgery(OS) for patients with IAA.

METHODS: A systematic review was performed according to the Preferred Reporting Items for Systematic reviews and Meta-analysis statement. Online search was performed in Pubmed and included studies reporting ET and OS for IAAs up to January 31, 2023. Studies were included if reporting at least one of the following outcomes: peri-operative(30-day)mortality, peri-operative complications and length of stay. The primary outcome was defined as peri-operative mortality. The software Review Manager 5.4 (REVMAN) was used for data analysis.

RESULTS: The database search identified 418 articles, of which 413 records were excluded by screening by title/abstract. A total of 5 were read in full. All were observational and 4 were available for quantitative synthesis.
A total of 786 patients were included. 1.40% were symptomatic. Open repair was performed in 296/786. Endovascular treatments included iliac branch design grafts (353/490), stent-grafting and internal iliac artery embolization (132/490) and stent-grafting only (5/490).Patients undergoing ET were significantly older(MD: 5.49, 95% CI: 2.34 to 8.65) and more likely to have congestive heart failure(OR: 3.74, 95% CI: 1.24-11.27). Patients undergoing OS were more often smokers(OR: 0.59, 95% CI: 0.42-0.82) and had larger aneurysms(MD: -4.37, 95% CI: -6.12to-2.63).
Patients undergoing OS had longer hospital stays(MD: -4.68, 95% CI: -6.43 to -2.92), higher risk of surgical wound infection(OR: 0.31, 95% CI: 0.10-0.94), renal failure(OR: 0.33, 95% CI: 0.11-0.98) and respiratory infection(OR: 0.06, 95% CI: 0.01-0.34)(Figure1).
Estimated overall 30-day mortality was1.5%, 2.64% (95%CI 1.14-5.202) and 0.8% (95%CI 0.22-2.06) after OS or ET, respectively, with no significant difference between groups (OR 0.50, 95% CI 0.04-6.53)(Figure 2).
At 1-year follow up, reinterventions rates were also not significantly different for OS and ET (6.5%, 95% CI 4.0-10.2 and 5.8%, 95% CI 3.9-8.38, respectively)(Figure 3).

CONCLUSION: Both ET and OS were safe and effective methods to repair IAAs with no difference in peri-operative mortality. ET can reduce peri-operative complications and length of stay.

Figure 1- Length of stay and Pos operative complications (Surgical site infection, Renal Failure, Pneumonia;) forest plots respectively.

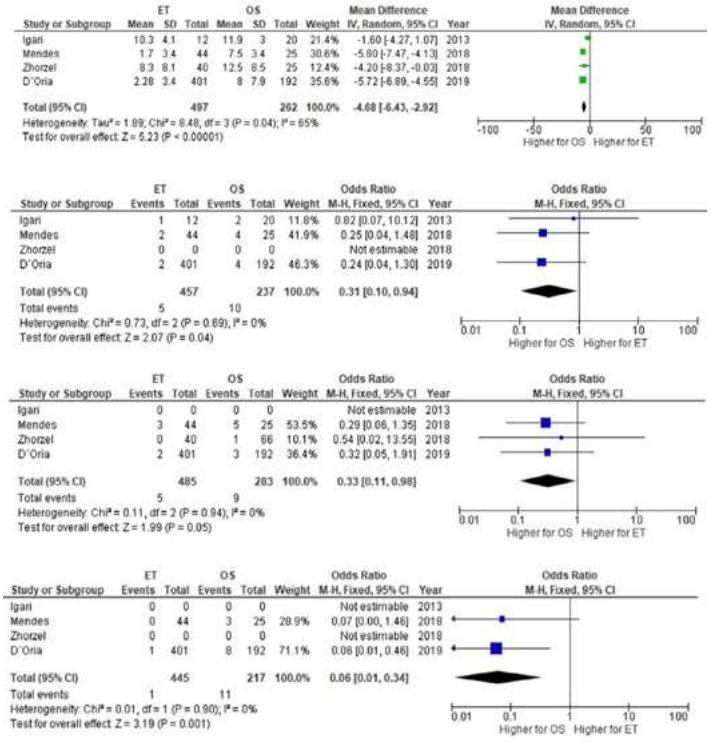


Figure 2- 30 day mortality forest plot

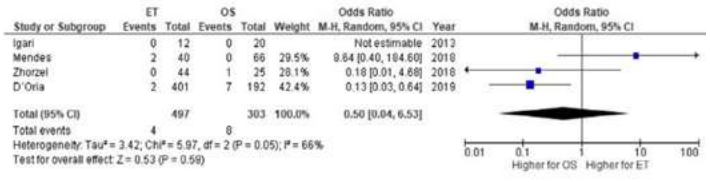
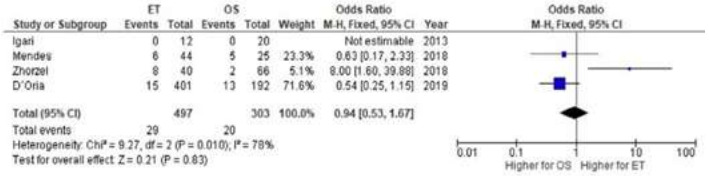


Figure 3- 1 year reinterventions forest plot



CO 09 Descending thoracic aorta inflow for primary revascularization of aorto-iliac occlusive disease – systematic review

Celso Nunes, Juliana Varino, Vânia Oliveira, Eduardo Silva, Leonor Baldaia, Miguel Silva, Luis Orelhas

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INTRODUCTION: Descending thoracic aorta (DTA) inflow has been used as a secondary option for revascularization after either graft failure/infection or other intra-abdominal pathologies contraindicating a standard abdominal aortic approach in aortoiliac occlusive disease. Even though, DTA inflow has excellent long-term patency and avoids some troublesome of abdominal approaches.

METHODS: We performed a thorough electronic search of the literature using PubMed and Embase databases. We used the following combination of keywords in our search strategy ((descending thoracic aorta) AND (bypass OR inflow) AND (aortoiliac lesions). After duplicate removal, titles, and abstracts screening and fully reading the remaining articles, we end up with 11 articles to compose our review. Only articles in English published in the last 30 years were included. PRISMA guidelines were followed.

RESULTS: We analyzed 223 cases in which DTA inflow was used, 153 males (68.6%) and 70 females (31.4%), with a mean age of 58.1 years. The majority had a smoking history (75.3%), 42.9% had high blood pressure, one-third had coronary disease, 21% had dyslipidemia, 13.5% had diabetes, and 8.8% had chronic renal disease. The DTA inflow was used as primary revascularization in 100 (44.8%) and as a secondary approach in 123 patients (55.2%). From the last group, the indication for surgery was: aortic graft infection in 24, aortoenteric fistula in 5, aortic pseudoaneurysm in 2, failure of previous endovascular procedure in 10, and failure of previous open surgery in 82 patients. In terms of surgical technique details: side bite clamping was the preferred method and a bifurcated graft configuration was the method of election. The 30-day mortality was 4%. Fourteen patients needed reintervention and lung-related complications were the most frequent. Secondary graft patency at 5 years was reported to be higher than 86%. Six articles also investigated the long-term complications: graft thrombosis and infection are the most reported.

CONCLUSION: Even though DTA inflow is typically used as an alternative, past published results, report low perioperative morbimortality and good long-term patency rates, supporting its use not only as an alternative but also for primary revascularization. The DTA is less prone to atherosclerotic disease and its approach avoids intrabdominal organ injury. Moreover, spinal cord, mesenteric, and renal ischemia are less likely given that partial clamping is carried out.

CO 10 Isquemia medular no tratamento endovascular de aneurismas toraco-abdominais e abdominais complexos

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INTRODUÇÃO: A isquemia medular (IM) é uma complicação infrequente mas devastadora após o tratamento endovascular de aneurismas complexos. A sua fisiopatologia e fatores de risco ainda não são completamente compreendidos. O objetivo deste trabalho foi analisar a ocorrência e características da IM na nossa coorte de doentes.

MÉTODOS: Foi realizado um estudo tipo coorte retrospetivo, desde Janeiro de 2013 a Outubro de 2022, de todos os doentes submetidos a tratamento endovascular de aneurismas toraco-abdominais (AATA) ou abdominais complexos com recurso a endopróteses fenestradas\ramificadas. Foi definido como IM desenvolvimento de défices motores/sensitivos nos membros inferiores após o tratamento de acordo com as definições da *Society for Vascular Surgery*.

RESULTADOS: Foram operados no total 135 doentes com idade média de 72 anos (± 8), 87% sexo masculino. 53,7% (n=72) dos doentes apresentavam um AATA, dos quais 63 tinham AATA tipo I-III/V, e 9 tipo IV. No total 12 doentes desenvolveram IM (9%), dos quais 7 grau-2 e 5 grau-3, sendo todos AATA (16,7%). Destes doentes, 9 tinham sido submetidos a drenagem de LCR prévia. 5 (42%) desenvolveram IM tardia (após as 48h) e 7 (58%) foram identificados na primeira avaliação (IM precoce). Em 5 doentes foi realizado drenagem de LCR de resgate, sendo que em todos observou-se algum grau de recuperação. Dos doentes com IM grau 3 (n=5), 2 não recuperaram e 3 recuperaram parcialmente. Dos doentes com IM grau 2 (n=7), 1 não recuperou, 1 recuperou parcialmente e 5 recuperaram totalmente. Correspondendo a uma taxa de IM permanente (qualquer sintoma) de 5,2% (9,8% apenas nos AATA) e paraplegia permanente de 1,5 % (2,8% apenas nos AATA).
Foi verificado uma diferença estatisticamente significativa na taxa de IM nos doentes com ou sem trombo mural (moderado-grave) (p=.04, analise univariada), no entanto, após regressão logística não foram identificados fatores preditores.

CONCLUSÃO: A IM na nossa coorte ocorreu apenas nos doentes com AATA, com uma taxa de paraplegia permanente de 2.8% neste grupo. Em 5 doentes foi utilizada drenagem de LCR de regaste com melhoria clínica. Tendo em conta o reduzido número de eventos e da amostra não foi possível a correta identificação de fatores preditivos. No entanto, 42%

dos casos de IM ocorreram após as primeiras 48h, o que poderá alertar para a necessidade de monitorização mais prolongada neste grupo de doentes.

CO 11 A closer look at aortic seat belt injuries: analysis of 52 cases published in the last 60 years

Eduardo Silva, Vânia Constâncio, Celso Nunes, Leonor Baldaia, Miguel Silva, Luís Orelhas, Mário Moreira, Manuel Fonseca

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INTRODUCTION: Seat belt aorta is a rare but often severe complication arising from blunt trauma with compression of the abdominal aorta against vertebrae. Seat belt sign is often present as an ecchymosis across the abdomen. The association with abdominal wall disruption and hollow viscus injury has been named seat belt triad; the presence of Chance fracture is sometimes considered a fourth component.

METHODS: Using *Pubmed* and *Embase* databases we reviewed all articles regarding abdominal seat belt aortic injuries and analyzed presentation at admission, concomitant lesions, including presence of seat belt triad, treatment and outcomes.

RESULTS: Fifty-two cases were reported, from 1968 to 2019. Twenty nine males (56%), mean age 43 ± 19 years. Most patients were conscious and stable at admission, with 29 (55.8%) presenting acute abdomen, 26 (50%) lower limb ischemia, 9 (17.3%) hypovolemic shock and 3 (5.8%) late-onset claudication. Seat belt sign was identified in 40 patients (76.9%), seat belt triad in 38 (73.1%) and 22 (42.3%) had Chance fractures, of which only 2 were not associated with seat belt triad. Most patients presented with aortic dissection (90.4%), complicated with pseudoaneurysm (9.6%), contained rupture (5.8%) or uncontained rupture (3.8%); 2 patients presented isolated iliac thrombosis and 3 distal limb ischemia secondary to aortic atheroembolism. All patients required immediate surgical intervention, of which 44 (84.6%) required urgent vascular surgery: 36 open revascularizations (11 aortic interposition graft; 9 aortoiliac thromboendarterectomy; 6 aortoiliac/femoral bypass; 4 isolated lower limb thromboembolectomy; 3 axillofemoral bypass; 3 other procedures) and 8 endovascular aortic repairs. Four patients underwent vascular surgery later and 3 were managed conservatively. Ten patients (19.2%) passed, of which 7 had seat belt triad. No patients needed reinterventions for vascular lesions, yet 3 required limb amputation. Most patient with seat belt triad required further visceral and abdominal wall repair.

CONCLUSION: Seat belt aorta and especially seat belt triad are severe complications associated with high morbimortality often requiring surgical treatment with multiple interventions. Given that patients often present conscious and stable at admission, this condition should not be disregarded.

CO 12 Gender-related differences in aortic syndromes

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BACKGROUND: Heterogeneity in the epidemiology, management and in-hospital outcomes of patients with aortic syndromes can be found among male and female populations. This study aims to analyze male–female differences in presentation, management and outcomes in a cohort of patients treated in a tertiary center.

METHODS: All patients admitted with aortic syndromes between January 2012 and January 2023 were retrospectively analysed. A descriptive analysis of the data was performed and the results stratified according to patient's sex, type of aortic syndrome, type of treatment (medical or surgical – conventional or endovascular) and also according to the temporal phase of the disease in which this treatment occurred.

RESULTS: A total of 116 patients (69% male) were included. Women were older (median age [interquartile range]: 64.6 years [40–85 years], n=36 versus 58.7 years [23–84 years], n=80; P=0.034), had a higher proportion of intramural hematoma (19.4% versus 5.0%, P=0.014) and a lower proportion of aortic dissection (72.2% versus 88.8%, P=0.026) compared to men. Both genders were more frequently treated with medical therapy (33.6%). However, women had a trend towards lower proportion of open surgical therapy compared to men (16.7% versus 23.8%, P=0.391), as well as higher in-hospital mortality associated with this type of treatment (50.0% versus 21.1%, P=0.169). Additionally, women were associated with a higher conversion to endovascular or open surgery (13.9% versus 3.8%, P=0.046). In binary logistic regression, age was associated with higher in-hospital mortality (OR 1.056 [95% CI, 1.01-1.10]; P=0.014), but not female sex (OR 1.133 [95% CI, 0.39-3.30]; P=0.819).

CONCLUSIONS: Women were older, had more intramural hematoma and were associated with a higher conversion from medical to endovascular or open treatment. After binary regression, age was associated with in-hospital

mortality, but female sex was not. Larger cohorts are needed to understand if intervention in female patients will have impact on intra-hospital mortality.

Key Words: aortic syndromes; type B aortic dissection; gender differences; in-hospital mortality

CO 13 Emergent aneurysm repair using chevar technique - a retrospective case series

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Centro Hospitalar Universitário de Santo António

INTRODUCTION: Parallel stentgraft techniques such as chimney EVAR (chEVAR) were initially used for bail-out in patients with inadequate landing zones and accidental visceral coverage. Their current application for complex AAAs has been relegated when f/bEVAR endografts are unavailable, especially due to durability concerns. However, the off-the-shelf nature of chEVAR makes it a good option for urgent/emergent AAA repair. We report our institutional experience in chEVAR in urgent setting.

METHODS: chEVAR procedures were collected from 2019 to March 2023 in a tertiary hospital, and a retrospective analysis was performed. It includes gathered information from electronic medical records, surgical reports and the picture archiving system.

RESULTS: We report a series of 5 patients submitted to emergent/urgent aneurysm repair using chEVAR technique. Average age was 73,4 (45-89) and all patients were male. Arterial hypertension was present in 100% patients; 80% were former smokers and all patients were ASA 4. Indications for surgery were: post EVAR type 1a endoleak with associated rupture or symptomatic in two patients; symptomatic/ contained rupture of pararenal AAA in two patients; and contained rupture of a thoracoabdominal aneurysm in one patient.
Femoral and brachial/axillar cutdowns were used in all patients. A total of 8 target vessels were catheterized: two patients required single-vessel chimney and the remainder two-vessel chimney. Target vessels were two superior mesenteric artery and six renal arteries. Technical success rate was 100% and 30-day mortality was 0%. There were no major complications and average admission was 15 days (6-24). Follow-up CTA excluded any procedure-related complications, with no gutter-related endoleaks. Sac regression was observed in all patients. Target vessel patency during the follow-up period is 87.5% (1 renal artery occluded at 23 months). Follow-up time is 20.2 months (4.7-38) and 60% of patients have expired due to non-aortic related pathologies, on average 18 months after surgery (4.7-38), with a 1-year survival of 80%.

DISCUSSION: Our experience reveals high technical success rates and low short-term mortality. Mid-term mortality due to non-aortic causes is explained due to the patients' severe comorbidities. Sac regression, low rates of target vessel occlusion and type 1a endoleaks reveal a favourable profile for AAA exclusion. chEVAR is a viable option in emergent setting for patients unfit for open repair.

CO 14 Fenestrated physician-modified endografts (PMEGs) - a viable bailout option

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INTRODUCTION: Fenestrated and branched endograft technology has come a long way over the past few years, enabling the treatment of complex juxtarenal, thoracoabdominal, and arch pathologies. A significant number of innovations, namely device and delivery optimization and technical tricks have been developed. These concepts have proven to work well when there is sufficient time to plan and manufacture a custom-made device for the patient. However, this is not the case in urgent or emergent cases, in which time concerns with endograft customization and procedure's duration are relevant issues. The use of paralel graft techniques or off-the-shelf endografts may be efficient in urgent situations, but it is also associated to selection limitations. Recent publications have demonstrated similar technical and clinical results between physician-modified endografts (PMEGs) and customized devices.

OBJECTIVES: Describe the case serie of PMEGs in our center.

METHODS: The clinical files of all patients undergoing PMEGs were consulted and demographic data as surgery outcomes were collected. Technical success was defined as the creation of the intended number of fenestras, their catheterization and vessel patency. Procedural success was defined as technical success with exclusion of aneurysm without endoleak in the final angiography. 30-day complications as mortality were also evaluated. Technical and procedural success were evaluated as well as morbidity and mortality.

RESULTS: Between December 2020 and December 2022 (24 months), 3 patients underwent PMEGs. With regard to the type of aneurysm, one case was a Juxta-renal aortic aneurysm, another a type V thoracic abdominal aneurysm and one case of a symptomatic persistent proximal endoleak. All patients were symptomatic, and in 1 case we were faced with a contained rupture. Our center presented 100% technical and procedural success, with no morbidity and mortality to be presented, in the 30-day analysis.

CONCLUSION: Endograft modification is a useful and valid tool in emergencies and should be a trump card of a vascular surgeon dealing with complex aortic pathologies. Nevertheless, it should be reserved for acute patients unable to wait on manufacture of a custom-made device and in aneurysms with unfavorable anatomy for an off-the-shelf device.

SESSÃO MELHOR COMUNICAÇÃO ORAL 3

CO 15 Inverted T bypass: a solution for when there's no solution

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INTRODUCTION: Peripheral arterial disease has become a major global health problem, with chronic limb-threatening ischemia (CLTI) being its most extreme manifestation. In recent years, endovascular strategies evolved and became the first approach in many revascularization procedures. However, infrapopliteal (IP) disease is still a therapeutic challenge to any surgeon, especially in complex patterns, when lacking an autologous vein graft or after a failed endovascular attempt.
This study aims to present a surgical technique, named inverted T bypass, that consists in creating a connection between two outflow arteries using a short venous graft that receives inflow from a prosthetic graft. This technique can be applied to patients with: (1) an IP artery with poor collateralization to the foot, (2) an inframalleolar artery with poor runoff and (3) availability of only a short venous graft.

METHODS: A single-center retrospective analysis of all patients with CLTI submitted to inverted T bypass. The end points of the present study were limb-based patency (LBP), primary patency (PP) and secondary patency (SP) rates, freedom from CLTI, freedom from new CLTI, freedom from major index limb amputation, amputation free-survival, and overall survival.

RESULTS: A total of twenty-five patients with CLTI (68% male) with a median age of 77 years were submitted to 25 inverted T bypasses. The median follow-up was 25 months (interquartile range of 32). Twenty-one preoperative angiographies were performed. Severe femoropopliteal (FP) and IP anatomic patterns (GLASS FP and IP grade 4) were predominant (57% and 86%, respectively) with 100% of limbs classified as GLASS stage III. Three patients (12%) had previously failed endovascular treatment. LBP, PP and SP were, respectively, 75%, 75% and 79% at 1 year, and 61%, 61% and 64% at 2 years. After one year, 86% of the limbs were free from CLTI and 79% of them remained without recurrences during a follow-up of 2 years. Eighty-one percent of the patients were free from major index limb amputation at 2 years.

CONCLUSION: The inverted T bypass is a creative surgical solution for CLTI patients with poor runoff and lacking an adequate venous graft. The results are promising, rendering this technique a viable option for distal and ultra-distal revascularization in complex cases.

CO 16 Three-year outcomes of femoro-popliteal supera stenting

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Centro Hospitalar Universitário de Santo António

INTRODUCTION: The femoropopliteal sector biomechanical characteristics turn the endovascular treatment of complex lesions particularly challenging. Despite several studies reporting longer patency of femoropopliteal stenting when compared to balloon angioplasty, long-term outcomes are still marginal due to the high rate of restenosis, stent fracture, and thrombosis. The aim of this study is to evaluate the outcomes of the treatment of femoro-popliteal obstructive disease with the Supera stent.

MATERIALS AND METHODS: This is a single-center retrospective cohort study including all patients with peripheral arterial disease who underwent femoro-popliteal intervention with the Supera stent between January 2015 and December 2020. Limb-based patency and amputation free survival were the main outcomes considered. Procedure-related factors such as intra-operative anatomic staging, total stent length coverage, deployment conformation and antiagregation regimen and their impact on the prognosis were considered secondary outcomes. Statistical analysis was performed in IBM's SPSS statistics v.25 and the 0.05 significance level was adopted..

RESULTS: A total of 79 patients with femoro-popliteal arterial disease treated with the stent Supera were retrospectively reviewed. Thirty-six patients (45,6%) were classified as GLASS stage III. Global limb-based patency rate by the 36th month was 68,6% and amputation free survival was 86,6%; comparing the outcomes between patients in GLASS stages I and II with stage III there was no significant difference, with limb-based patency rates of 72% for GLASS I and II vs. 63% for GLASS III (p=0,342). Only the stent conformation significantly

affected the limb-based patency rate, with higher hazard of reintervention for the elongated (HR=3,179; p=0,036; CI 1,081-9,347) and for the compressed (HR=3,015; p=0,042; CI 1,039-8,746) forms, compared to nominal (p=0,06). There were no stent fractures or other procedure related-complications by the end of follow-up.

DISCUSSION: This study highlights the promising results of the Supera stent for the treatment of femoro-popliteal obstructive disease in higher GLASS stages.

CO 17 Cooperation between portugal and cape verde for hemodialysis accesses management: a descriptive report of the 2023 mission

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Grupo de Estudos Vasculares

INTRODUCTION: Cape Verde is one of the few countries in Africa that offers a public program of hemodialysis. The harsh reality of this developing country plays a serious challenge when managing vascular accesses: patients present with chronic kidney disease at young ages, some remain dependent on central venous catheters and the lack of endovascular devices withdraws options to prolong access patency. Since 2015, vascular access group enrolls medical cooperation missions in this country to tutor local teams dealing with vascular accesses. We report our experience during the 2023, two-weeks long mission.

CASE REPORT: Our first week took place in Praia, at Hospital Agostinho Neto, whose hemodialysis center is open since 2015 with a dedicated nephrologist and vascular surgeon. The second week took us to Hospital Dr. Baptista de Sousa, Mindelo, whose hemodyalisis center is open since 2022 with one nephrologist, two internists and one general surgeon that helps in basic procedures. After an initial physical and ultrasonographic screening at each hospital, we laid the plan for the rest of the week. Overall, we performed four radial-cephalic, two ulnar-basilic, two brachial-cephalic, ten brachial-basilic and one brachial-brachial autologous accesses. We also performed three brachial-basilic and two brachial-brachial transpositions. In two patients with ulnar-basilic dysfunction, we performed rotation of the veins in the forearm to the radial artery; four additional patients had upper limb access exhaustion, so they underwent femoral-femoral transposition through three skin mini-incisions in the thigh; one patient had distal ischemia and underwent flow reduction with silk banding under ultrasound control. Aside from our access journey, we had the opportunity to help the vascular surgeon in Praia perform the first carotid endarterectomy in Cape Verde (82 years-old, female); we also assisted with the urgent admission of a type-A aortic dissection (51 years-old, female), a ruptured para-renal aortic aneurysm (42 years-old, male) and an acute limb ischemia (32 years-old, male).

CONCLUSIONS: This demanding but enriching experience is of vital importance to keep the high quality of vascular accesses in a country with little resources; with our cooperation we have reached an autologous access utilization rate of over 95% in both centers. As time goes by, the number of complex cases will keep increasing, posing ever-growing challenges to all teams involved.

CO 18 Endovascular treatment of proximal lower extremity deep vein thrombosis – experience of a center

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BACKGROUND: Proximal lower extremity deep vein thrombosis (DVT) occurs in 5-10/10000 patients annually. If left untreated, there is a high risk of developing pulmonary embolism and late limb sequelae from post-thrombotic syndrome (PTS). Traditionally these patients were treated with conservative therapy, namely anticoagulation and compression stockings. Nowadays, new and more aggressive treatments have emerged. Endovascular treatments, including thrombectomy devices, catheter-directed thrombolysis (CDT), percutaneous transluminal angioplasty (PTA), and stent placement, allow a more effective treatment, with a very low risk of complications for the patient.

METHODS: We studied retrospectively all patients with proximal lower extremity DVT that were treated with endovascular therapy, in our center, between the years of January 2019 and March 2022. The grade of thrombolysis (calculated using Marder and SVS scores), treatment safety, primary patency, and symptoms of PTS (Villalta Score) were evaluated.

RESULTS: A total of 20 patients were treated by endovascular treatment. The majority of these patients were women (95%), 60% of them had DVT of the left limb and 30% had phlegmasia cerulea dolens.
Seven patients were treated with the Angiojet TM system (35%), four with the Penumbra system (20%), and nine with CDT alone (45%). There wasn't any case of major bleeding or pulmonary embolism after the procedure. Two patients had small vein ruptures with no need for additional treatment. The average length of stay in intensive care units for surveillance was 2.2 days.
At the end of treatment, 80% of the patients had complete thrombolysis, 10% had partial thrombolysis (50–95% thrombus removal) and 10% showed minimal or no thrombolysis (< 50% thrombus removal).
Primary patency rate was 88% after 12 months and only one patient presented with mild PTS (Villalta Score) one year after treatment.

CONCLUSION: Our experience has shown that endovascular therapy for acute proximal lower extremity DVT is a safe and effective treatment that can largely reduce the development of PTS and recurrent venous thromboembolism. However, life-threatening complications such as major bleeding can occur. As so, after surgery, close monitoring of these patients in an intensive care unit is mandatory.

CO 19 Carotid artery stenting and improvement of cognitive function in patients with asymptomatic carotid artery stenosis: systematic review and meta-analysis

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INTRODUCTION: Carotid artery stenosis is defined as "asymptomatic" in the absence of associated acute cerebrovascular events in the previous 6 months. Several studies have demonstrated that such stenosis might not be truly asymptomatic, since patients with asymptomatic carotid stenosis frequently have coexisting cognitive impairment. Studies have assessed the effects of carotid revascularization on cognitive function in patients with asymptomatic carotid artery stenosis, with conflicting results.

AIM: The aim of this study was to examine the impact of CAS on various domains of cognitive function in asymptomatic patients.

METHODS: A systematic review and meta-analysis was performed according to the PRISMA guidelines. Pubmed and Scopus databases were systematically searched from inception to February 2023. To be eligible for inclusion, articles must report preoperative and postoperative cognitive evaluation in asymptomatic patients submitted to carotid artery stenting.

METHODS: The search strategy yielded 914 articles. After screening, a total of 12 studies were eligible, including a total of 273 CAS for asymptomatic carotid stenosis. A slight improvement in selective attention (OR 0.87, 95% confidence interval [-2.63, 4.38]; p =0.62) was observed after CAS. No significant differences regarding global cognition assessed with Mini Mental State Examination and Rey Auditory Verbal Learning Test were observed when comparing with baseline assessments (OR -0.50, 95% confidence interval [-1.01, 0.01]; p=0.05 and OR -0.35, 95% confidence interval [-0.79, 0.09]; p =0.12), respectively). Language ability (assessed by the Boston Naming Test) and processing speed (evaluated by Stroop Colour test), were slightly better preoperatively, however with no statistically significant differences (OR -0.69, 95% [-2.10, 0.72], p=0.34 and OR -1.34, 95% [-2.8, 0.12], p=0.07). Memory assessment was performed using different scales throughout the included studies, and no conclusion on this matter was possible.

CONCLUSION: CAS in asymptomatic carotid stenosis was not associated with any positive effect on executive function, language processing speed or any other cognitive function. Future studies are needed in order to fully investigate the long-term effect of CAS on cognition in patients with carotid artery stenosis.

CO 20 In-stent restenosis after carotid artery stenting – how should we approach it? A systematic review and meta-analysis

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CHVNG/E

INTRODUCTION: Carotid artery stenting (CAS) has been increasingly used in the treatment of carotid artery stenosis as an alternative to carotid endarterectomy (CEA). However, in the medium to long term, the development of in-stent restenosis (ISR) can increase the theorical risk for neurological events. In the 2023 European Society of Vascular

Surgery (ESVS) Guidelines, no optimal approach to both symptomatic and asymptomatic ISR has been established. Also, in the latter, no criteria for invasive management has been suggested.
Our aim was to compare the outcomes of an endovascular treatment (ET) with CEA for ISR.

METHODS: A systematic search of MedLine and Scopus was conducted according to the recommendations of the Preferred Reporting Items for Systematic reviews and Meta-analysis statement.

RESULTS: A total of 13 articles were included, reporting on 871 patients who had undergone ET (n=575) or CEA (n = 162) for ISR and met the inclusion criteria. No study compared BMT with invasive strategies. Endovascular options included: balloon angioplasty (n=65), redo CAS (n=551), drug eluting technologies (n=19) and cutting-balloon angioplasty (n= 8). Most patients in both groups were asymptomatic, with a higher proportion of symptomatic patients in the CEA group (ET vs CEA, 30.6% vs 40.1%). The pooled prevalence for stroke, death, and stroke/death for CEA were as follows: 1.9% (95% confidence interval [CI] 0.0-4.9); SE 0.7, 3.8% (95% CI 1.0-6.6); SE 0.6 and 5.7% (95% CI 0.0-12.3); SE 1.5, respectively, and for ET 1.38% (95% CI 0.0-0.56); SE 1.5, 0.9% (95% CI 0.0-7.2); SE 1.5 and 2.0% (95% CI 0.0-14.5); SE 2.9, respectively. The need for re-intervention after ISR treatment occurred after a longer follow-up in the CEA group (ET vs CEA, median, 12 months [range, 7.6-18 months] vs 18 months). Also, re-stenosis after ET was a significant issue found for complications, reinterventions or overall-mortality.

DISCUSSION: Despite ESVS guidelines statement of a relatively benign nature of asymptomatic ISR, no study was attained comparing conservative with invasive management nor were criteria for invasive management identified. In this review, peri-operative outcomes were superior in the ET group (versus CEA). However, heterogeneity of treatment approaches and short-term re-stenosis were important issues and data on medium to long term outcomes were scarce to non-existent. Additional granular data from multicentric high-volume registries are needed to establish both criteria and optimal management for ISR.

CO 21 Therapeutic compliance in patients with asymptomatic carotid artery stenosis – is it influenced by the therapeutic management decision? - A cross sectional study

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INTRODUCTION: Treatment decision in patients with asymtomatic carotid artery stenosis (CAS) is a matter of current debate with a recent shift towards isolated best medical treatment (BMT) as treatment of choice in most patients. However, poor medical compliance is one of the main constraints to the success of BMT. We hypothesized that more invasive treatment approaches can influence how patients perceive the severity of their illness and hence, treatment compliance.

METHODS: A cross-sectional study was performed including patients with asymptomatic >50% carotid artery stenosis (NASCET method) followed-up as outpatients in a Vascular Surgery department from January 1st 2017 to December 31th 2020.
Optimal BMT was defined according to the European Society od Vascular Surgery Carotid Atherosclerotic Disease 2023 guidelines.
Demographic and risk factor patient data was attained and subsequently a portuguese translation of the Morisky scale and 3-Point MACE were applied to all patients. Several additional questions developed by our group were also be applied.

RESULTS: A total of 320 patients were identified (136 under BMT alone and 134 under BMT and carotid endarterectomy - CEA). In addition, most of the patients were males (75%) and the BMT group was significantly older than the CEA group (71.6+/-8.11 vs 69.8+/-7.5; p=0.038). Furthermore, patients undergoing CEA had higher rates of smoking (43% vs 16.7%; p0.001) and lower rates of antiplatelet/hypocoagulant (79.9% vs 91.9%; p=0.002) and statin (81.3% vs 95.7%; p0.001) prescription when compared to patients undergoing only BMT.
It was also statistically significant that many of the assessed patients who knew how to nominate the medication were from the CEA group, which also had the lowest medication compliance.

CONCLUSIONS: In conclusion, physicians are more aggressive in controlling risk factors (specifically, statin and antiplatelet prescription) in BMT-only patients than in CEA-submitted patients. Furthermore, patients subjected to CEA are more aware of CAS, despite having poorer medical adherence.

COMUNICAÇÕES RAPID-PACE 1

CR 01 Is arm-ergometry exercise training an effective mode of exercise in the treatment of patients with intermittent claudication? The armex study – a randomized clinical trial

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BACKGROUND: Supervised exercise training is an important treatment among peripheral arterial disease (PAD) patients with intermittent claudication. Interval treadmill walking to claudication pain is most commonly used but many patients fail to complete it.

PURPOSE: To compare an arm-ergometry supervised exercise training with a treadmill protocol on cardiorespiratory fitness and walking distances.

METHODS: Single-center, single-blind, parallel groups, randomized control trial. Symptomatic PAD patients referred to a cardiac rehabilitation unit were randomized to a treadmill (TEx) or an arm-ergometry (AEx) supervised exercise training over 12-weeks.
The primary endpoint was the change in VO2 peak at 12-weeks. Secondary outcomes included change in maximal walking distances (MWD) and pain-free walking distances (PFWD) in a cardiopulmonary exercise test (CPET) and in a 6-minute walking test (6MWT); self-reported walking limitations were evaluated in the Walking Impairment Questionnaire: distance (WIQds), speed (WIQs) and stair climbing (WIQsc).

RESULTS: 51 patients (mean age 65±8 years; 88.2% male) were randomized, 25 to TEx and 26 to AEx. At 12-weeks VO2 peak increased significantly in AEx (1.71±2.77 mL/Kg/min, p<0.001) but not in TEx (0.26±2.91 mL/Kg/min, p=0.694), without statistical significance between-groups (p=0.106). CPET MWD and CPET PFWD improved in both groups (TEx – MWD 208.1±150m, p<0.001; PFWD 147.6±177.7m, p<0.001; AEx – MWD 96.7±166.4m, p=0.013; PFWD 56.1±116.5m, p=0.035), but more in TEx (p=0.029). 6MWT MWD and 6MWT PFWD improved in both groups (TEx – MWD 56.5±46.3m, p<0.001; PFWD 84.5±94.1m p<0.001; AEx – MWD 35.3±26.1, p<0.001; PFWD 33.5±69, p=0.015), but more in TEx (p=0.042). WIQ scores increased in both groups with a between-groups difference for WIQds in favor of TEx (p=0.039).

CONCLUSION: Arm-ergometry exercise training was an effective mode of exercise in PAD as it improved VO2 peak and walking distances. This mode of exercise favorably compared to treadmill exercise training regarding VO2 peak, and unfavorably regarding walking distances. Our data supports the use of arm-ergometry as a complementary or alternative, in patients unable to long walks or intolerant to the exercise-induced leg pain.

Keywords
Peripheral arterial disease; exercise training; arm-ergometry

	Arm-ergometry n = 26		*Treadmill* n = 25		*Arm-ergometry vs Treadmill*	
	12-weeks mean difference (SD)	*p value*	12-weeks mean difference (SD)	*p value*	12-weeks mean difference (SD)	*p value*
CPET						
VO_2peak (ml/kg/min)	1.71 (2.77)	<0.001	0.26 (2.91)	0.694	1.45 (0.88)	0.106
MWD (m)	96.7 (166.4)	0.013	208.1 (150)	<0.001	111.4 (49.1)	0.029
PFWD (m)	56.1 (116.5)	0.035	147.6 (177.7)	<0.001	91.4 (46)	0.054
6MWT						
MWD (m)	35.3 (26.1)	<0.001	56.5 (46.3)	<0.001	21.2 (11.1)	0.062
PFWD (m)	33.5 (69)	0.015	84.5 (94.1)	<0.001	51 (24.3)	0.042
WIQ						
WIQd (%)	13.4 (12.7)	<0.001	23.4 (18.5)	<0.001	10 (4.7)	0.039
WIQv (%)	8.9 (8.1)	<0.001	13.1 (9.8)	<0.001	4.2 (2.6)	0.108
WIQsc (%)	14.7 (17.7)	<0.001	16.1 (17)	<0.001	1.4 (5.1)	0.778

Table 1. Effects of arm-ergometry and treadmill exercise training and groups differences.
SD – standard deviation; CPET – cardiopulmonary exercise test; MWD – maximal walking distance; PFWD – pain-free walking distance; 6MWT – 6-minute walking test; WIQ – walking impairment questionnaire; WIQd – WIQ distance; WIQv – WIQ velocity; WIQsc – WIQ stair climbing

CR 02 Comparison of treatments and outcomes on acute limb ischemia in a tertiary hospital

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CHUdSA

INTRODUCTION: Acute limb ischemia (ALI) is a severe medical condition that requires prompt treatment to prevent limb loss and other adverse outcomes. Different types of surgical interventions are available, including open or endovascular thrombectomy, bypass surgery, and amputation. This study aimed to evaluate the outcomes of different types of surgeries for ALI in a tertiary hospital.

METHODS: We conducted a retrospective analysis of patients treated for ALI in 2021 at our center. We collected demographic data, type of surgery, affected segment, ALI grade according to the Rutherford class, need for additional therapies, intervention-free survival at 1,3,6, and 12 months, and amputation-free survival at 6 and 12 months. Statistical analysis was performed using SPSS v26. Samples comparison was performed using the Chi-square test or Fisher, using a confidence interval of 95% with statistical significance for p-value <0.05.

RESULTS: A total of 93 patients were included. The majority were male (61.3%) and the mean age was 73.0±14.0 years old. The most common type of surgery performed was open thrombectomy (OT) (68.8%), followed by catheter-directed thrombolysis (CDT) (18.3%). The femoropopliteal territory was the most affected (47.3%) in the lower limb and the brachial artery in the upper limb (11.8%). The majority of ALI

were classified as Rutherford class IIa (57%). Of 19 patients submitted to CDT, 48h treatment was required in 42.1% and 7 patients required surgical conversion. From all procedures, 5 patients needed bypass surgery to limb salvage.
Additional treatment (angioplasty and/or stenting) was required in 68.4% of CDT vs 29.7% in OT (p-value 0.003).
Re-intervention rates at 1,3,6 and 12 months were 31.2%, 19.4%, 6.5%, and 7.5%, and amputation-free survival at 6 and 12 months were 18.3% and 17.2% respectively.
Amputation free-survival at 6 months was 78.9% in CDT vs 84.4% in OT but the difference was not statistically significant (p-value 0.728).

CONCLUSION: This study provides valuable insights into the management of ALI in our tertiary hospital. Our results suggest that open thrombectomy remains the most common treatment, but CDT is a valid option with similar results.

CR 03 Experiência pessoal da técnica ATTA (ablação térmica total assistida)

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INTRODUÇÃO: O tratamento da Doença Venosa Crónica (DVC) dos membros inferiores evoluiu de forma exponencial nas últimas décadas, transcendendo as técnicas clássicas como a safenectomia e flebectomia em ambientes hospitalares, para outras menos invasivas e de rápida recuperação. As técnicas de ablação endovascular são goldstandard, com tendência a ambulatorização e maior realização de procedimentos em ambiente exclusivamente de consultório. Entre estas técnicas, o *laser* endovenoso (EVLA - endovenous laser ablation) está entre as mais difundidas e versáteis.

MATERIAIS E MÉTODOS: 71 pacientes foram submetidos ao protocolo de padronização proposto pela técnica ATTA (Ablação Térmica Total Assistida). Todos os pacientes foram tratados em consultório próprio com alvará correspondente para realização do procedimento. 70% dos casos realizados com sedação endovenosa com anestesista e 30% realizados com sedação consciente com óxido nítrico.

RESULTADOS: Todos os pacientes (100%) obtiveram melhoria da dor relacionada a DVC, das varizes e da qualidade de vida. Os eventos adversos observados incluíram dor leve (35%) , Trombose Venosa Superficial (4.2%), equimoses ligeiras (70%), hipercromia (10%), cordão endurecido (20%), lesão neurológica periférica sensitiva (12%) e queimadura superficial da pele (1.4%). Estas complicações são as descritas em todas as técnicas de termoablação e decorreram com boa resposta ao tratamento instituido. À exceção da hipercromia, do cordão endurecido residual e da queimadura (1 único caso, provável erro de execução da técnica), que estavam resolvidos aos 90 dias, os restantes sintomas estavam ausentes após 30 dias.
Ainda que tenham sido descritas na literatura, não foram observadas na nossa experiência ocorrências de mal-estar, rash, alergia, constrição cervical, tosse, sintomas torácicos ou neurológicos centrais, varizes residuais, edema, disrupção da fibra, TVP, fístulas arteriovenosas, embolia pulmonar ou óbito.
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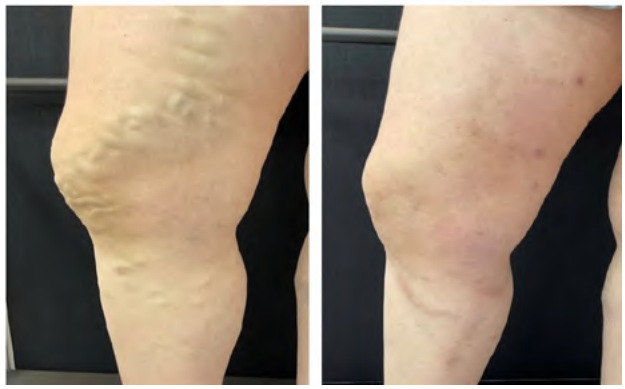
CONCLUSÃO: A técnica ATTA é proposta como uma ferramenta para o tratamento laser de safenas e tributárias e de outras veias inestéticas, exequível em ambiente ambulatorial, com alta eficácia e ótimos resultados. Deste modo, a técnica ATTA permite satisfação dos pacientes com resultados duradouros.



CR 04 Aspiration thrombectomy for the management of upper limb deep vein thrombosis: a case report and systematic review of the literature

Miguel Castro e Silva, Luis Orelhas, Leonor Baldaia, Eduardo Silva, Celso Nunes, Vânia Oliveira, Ricardo Vale Pereira, João Alegrio, Manuel Fonseca

Centro Hospitalar e Universitário de Coimbra

Deep vein thrombosis (DVT) of the upper limb is a rare but potentially serious condition that requires prompt diagnosis and treatment. Aspiration thrombectomy is a minimally invasive procedure that has shown promise in the treatment of DVT, particularly in the upper limb. Here, we present a case study of a 60-year-old african american male patient with chronic kidney disease and a recent kidney transplant who presented with phlegmasia cerulea dolens of the right arm. After diagnosis of DVT of the axillary and subclavian veins, he underwent aspiration thrombectomy with PENUMBRA and angioplasty of the axillary vein with good outcome. In addition, we conducted a systematic review of the literature to evaluate the effectiveness and safety of aspiration thrombectomy in the treatment of upper limb DVT. Our search identified 10 studies that met our inclusion criteria, involving a total of 280 patients. The technical success rate of aspiration thrombectomy ranged from 83% to 100%. The clinical success rate, defined as the resolution of symptoms and improvement in venous patency, ranged from 82% to 100%. There were no major complications reported, and minor complications were reported in 2.9% of cases.Our findings suggest that aspiration thrombectomy is a safe and effective treatment option for upper limb DVT, with high rates of technical and clinical success. Further studies are needed to confirm these findings and determine the optimal timing and patient selection for this procedure.

CR 05 Transarterial approach for type 2 endoleak - a retrospective case series

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INTRODUCTION: Type 2 endoleaks (T2EL) occurs in 10-20% of patients submitted to EVAR for infrarenal AAA. Its course is usually benign with spontaneous regression and small association aneurysm rupture. The latter usually occurs in the setting of progressive sac expansion, such that secondary intervention should be considered. Endovascular approaches aim to achieve aneurysm sac and feeding vessels embolization. We report our institutional experience in post-EVAR T2EL embolization using transarterial techniques.

METHODS: T2EL-related procedures were collected from inception to March 2023 in a tertiary hospital, and a retrospective analysis was performed. It includes gathered information from electronic medical records, surgical reports and the picture archiving system.

RESULTS: A total of 3 patients were submitted to transarterial retrograde T2EL embolization. Average age was 82,7 years (79-86) and all patients were male. The secondary intervention for endoleaks was performed on average 20 months after initial EVAR (3-52). The indication for intervention was aneurysm growth in two patients: 5mm in 6 months to 65mm and 15mm in 6 months to 100mm; and symptomatic after EVAR in one patient (AAA diameter 82mm). Feeding vessel were lumbar arteries in 2 patients and inferior mesenteric artery (IMA) in 1.
Procedures was performed under local anaesthesia using percutaneous ultrasound-guided femoral access (5-7F). The routes used were the hypogastric and superficial circumflex arteries for lumbar embolization and the superior mesenteric artery via Riolan's arcade for the IMA. Coaxial systems for selective catheterization were assembled using large (4-5F) catheter stationed in the proximal route artery, followed by 2.7F microcatheter and a microwire. Coils were deployed in the aneurysm sac and in the proximal EL artery. Onyx and thrombin were also used inside the aneurysm sac to promote thrombosis. Success rate was 100% and there were no procedure-related complications. Follow-up CT confirmed T2EL treatment and sac regression in 2 patients.

DISCUSSION: Transarterial percutaneous approach for T2EL embolization is a safe procedure with high success rates. Difficult and tortuous routes for embolization can be dealt with using coaxial system in order to successfully catheterize the target vessel and aneurysm sac. Several embolization materials can be used in the aneurysm sac and target vessel. Strict surveillance should be maintained to confirm sac regression and T2EL treatment.

CR 06 Flebologia moderna e ambulatorização: experiência de dois anos de tratamento de doença venosa crónica em consultório

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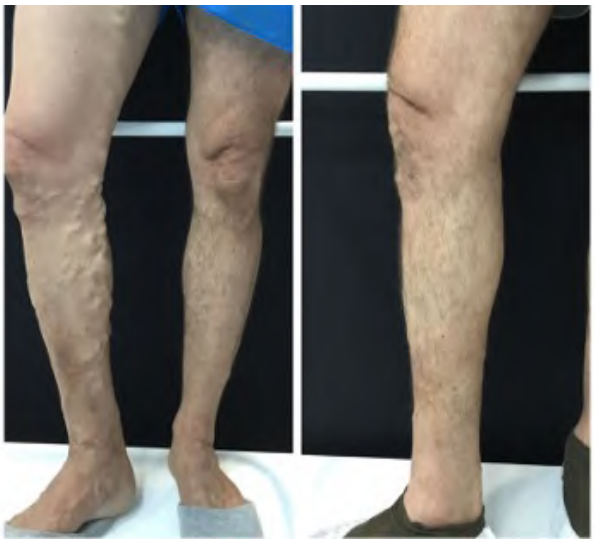
INTRODUÇÃO: A flebologia tem passado por uma grande revolução tecnológica nos últimos 10 anos. A variedade de técnicas e possíveis associações são uma ferramenta para o tratamento de Doença Venosa Crónica nos seus diversos

estádios, com enfoque para o tratamento ambulatório, realizado integralmente fora do ambiente hospitalar. As técnicas utilizadas nesse trabalho foram: Laser Transdérmico associado a Escleroterapia, Espuma Densa com Polidocanol, Microcirurgia e Laser Endovenoso (EVLA), quer para tratamento de safenas, quer de tributárias.

MATERIAIS E MÉTODOS: 253 pacientes foram submetidos a anamnese, exame físico, exame de realidade aumentada e exame de eco-Doppler. Foi realizado mapeamento e planeamento de cada caso, com escolha das técnicas mais adequadas e da sua sucessão no tratamento. 28% (71) dos pacientes foram submetidos a endolaser de safenas e veias tributárias, 55% (139) a laser transdérmico associado a escleroterapia líquida, 11% (28) a laser transdérmico com escleroterapia líquida e espuma e 6 % (15) exclusivamente a espuma densa com polidocanol.

RESULTADOS: 2,37% (6 pacientes) ficaram insatisfeitos e não apresentaram melhoria estética ou de qualidade de vida. 97,6% (247 pacientes) relataram melhoria importante na qualidade de vida, estética e sintomática. Quanto a complicações dos procedimentos, ocorreu hipercromia e matting em 5% dos casos, todos resolvidos conservadoramente. Um doente apresentou queimadura cutânea superficial com o uso de laser endovenoso no tratamento de tributárias.

CONCLUSÃO: É exequível o tratamento de pacientes com varizes tronculares, reticulares e telangiectasias fora do ambiente hospitalar, com segurança e satisfação. Os resultados revelam atingimento de melhoria estética e de qualidade de vida na grande maioria das situações, utilizando técnicas da flebologia moderna associadas a um diagnóstico preciso e planejamento detalhado de cada caso.



CR 07 Perivascular fat density and carotid plaques characteristics in patients with cerebrovascular acute disease

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INTRODUCTION: Carotid stenosis (CS) is a degenerative disease defined as a progressive narrowing of the carotid lumen caused by atherosclerosis. In people aged 30–79 years, in 2020, the global prevalence of this disease was estimated to be 21.1%. Most systemic vessels are surrounded by perivascular fat, being its function not completely known. Existing studies suggest that an increased perivascular fat density on computed tomography angiography (CTA) imaging is associated with histopathological higher levels of inflammation.

AIM: To investigate the relationship between the carotid perivascular fat density and carotid atherosclerosis in patients with cerebrovascular acute disease.

METHODS: We retrospectively analyzed all patients diagnosed with stroke or transient ischemic attack (TIA) admitted at the Stroke Unit of Hospital da Senhora da Oliveira from January 2020 to March 2021, which respected the inclusion and exclusion criteria.

RESULTS: Were included 111 patients, with a mean age of 67,3 years old, and 62 males (55.9%). Men had a significantly higher pericarotid fat density (p=0.019). Patients with total cholesterol >200 mg/dl (p=0.021), as well as patients with LDL >130 (p=0.020) had a lower pericarotid fat density (PFD). Pericarotid fat density was positively correlated with artery wall density (AWD) ipsilaterally (left r=0.295, p=0.002; right r=0.414, p=<0.001) and also contralaterally (left PFD with right AWD r=0.314, p<0.001; right PFD with left AWD r=0.209, p=0.028). For both sides, a higher pericarotid fat density was significantly associated ipsilaterally (left p=0.023, right p=0.019) and contralaterally (left PFD with right carotid p=0.014; right PFD with left carotid p=0.038) with a higher probability of existing >1 atherosclerotic plaque at carotid artery. Again, for both sides, a greater pericarotid fat density was ipsilaterally (left p=0.046, right p=0.041) associated with a higher probability of stenosis being =>50%, when not adjusted to sex and diabetes mellitus. Adjusting to these parameters, only the left pericarotid fat density remained associated with left carotid stenosis (p=0.037).

CONCLUSION: Pericarotid fat density is related with individual and carotid plaques characteristics. Therefore, quantifying and characterizing pericarotid fat in clinical practice may help dealing with carotid atherosclerotic disease and guiding preventive treatment for cerebrovascular disease.

Keywords: Atherosclerosis;

CR 08 A narrative review on arteriovenous fistulas for parenteral nutrition

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INTRODUCTION: Home parenteral nutrition (HPN) is used as a primary therapy for patients suffering from chronic intestinal failure or malnutrition treatment from other causes. Tunnelled or totally-implanted central venous catheters (CVCs) are the first-line choice for venous access, via the jugular or subclavian veins. CVC-dependant patients for HPN are prone to catheter-related infections which account for 70% of admissions and are responsible for the majority of HPN-related deaths.
The first report regarding the use of arteriovenous fistula (AVF) for HPN dates back to 1972. There is a scarcity on literature studying the widespread use of AVF for HPN despite its theoretical advantages. No high-quality direct outcome comparison has been performed between AVF and CVC for HPN.
We aim to assess the current literature evidence regarding use of AVF for parenteral nutrition.

METHODS: We performed a non-systematic review of the PubMed database using the search terms: arteriovenous, fistula, parenteral, nutrition. Non-English papers and those without available abstract were excluded in the search.

RESULTS AND DISCUSSION: Autologous AVF exclude the need for synthetic implantable devices, thus reducing the incidence of bloodstream infection. Retrospective comparison found decreased bloodstream infections in AVFs compared to CVC: 0.03/year and 1.37/year, respectively. Occlusion rates were slightly higher in AVFs (0.6/year) compared to CVC (0.35/year).
HPN AVFs require a single puncture compared to the usual double puncture for haemodialysis. Current literature reporting AVF-related patency is outdated for new techniques regarding AVF creation, surveillance, and treatment of stenosis and occlusion.
Compared to CVC, the absence of external devices protruding also reduce patient discomfort, increasing their QoL and possible activities. Patient's self-cannulation, despite possible, requires learning and experience. Most

will require a second person to obtain cannulation which may be become troublesome for those without permanent supervision.

CONCLUSION: AVFs appear to overcome consequences of long-term CVC for HPN. These patients' QoL can be improved without indwelling catheters for daily nutrition. Literature supporting its use is scarce and outdated considering current AVF knowledge. Selected patients may benefit from AVF construction as an alternative for CVC.

CR 09 Midterm outcomes after endovascular infrarenal aortic repair: a real-world analysis

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Centro Hospitalar Universitário Lisboa Norte

INTRODUCTION: Endovascular aortic repair (EVAR) is a mainstay in the therapeutic armamentarium for infrarenal abdominal aorta aneurysms. While landmark trials such as EVAR-1, DREAM or OVER show clear short-term benefits over open repair, there is fewer compelling data on mid to long-term results. In fact, only a few studies report mid-term results in real-world scenarios, although with favorable mortality and reintervention rates in these patients. The aim of this study is to report clinical outcomes over 5 years after EVAR in a Portuguese tertiary center.

MATERIAL AND METHODS: We performed a retrospective longitudinal study including all patients who underwent EVAR for infrarenal abdominal aortic aneurysm at a Portuguese university center. Patients included were subjected to EVAR between February 2010 to February 2018, to account for a 5-year minimum follow-up period. All outcomes were described according to the SVS reporting standards for EVAR (Chaikof et al, 2002). Primary clinical outcomes included survival and rupture-free survival. Secondary outcomes included freedom from type I and III endoleaks, prevalence of type II endoleak; prevalence of secondary endoleak and endograft patency. Median follow-up time was reported.

RESULTS: 251 patients underwent EVAR between February 2010 to February 2018, with 28 cases (11.2%) in an urgent setting. Most patients were male (91.2%), with a median age of 77 (IQR 69-82). 86 patients subjected to EVAR were over 80 years old (34.3%). Median follow-up period was 38 months (IQR 16-56). Freedom from mortality was 76.9%, with 2 cases of rupture after EVAR (1.2%). Freedom from type I and III endoleaks was achieved in 92%, with a prevalence of type II endoleak reaching 33.5% over the follow-up period. Freedom from reintervention was 86% over the follow-up period, with most procedures related to type I endoleaks. Median time to reintervention was 45 months (IQR 30-60).

CONCLUSION: EVAR offers a safe alternative for abdominal aortic repair in patients unfit for open surgery and with favorable anatomy. EVAR offers acceptable mortality rates over 5 years, even when considering patients over 80 years old. More than 90% of patients were free form type I and III endoleaks. Prospective reporting of these outcomes is a top priority to improve clinical outcomes, especially in ruptured cases.

CR 10 The use of intravascular ultrasound in endovascular aneurysm repair: a systematic review of fluoroscopy, contrast, and complications

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INTRODUCTION: Intravascular ultrasound (IVUS) has emerged as a promising tool for improving the accuracy and safety of endovascular aneurysm repair (EVAR) procedures. However, the optimal use of IVUS in terms of fluoroscopy time, amount of contrast media used, and associated complications remains unclear.

METHODS: A systematic review of the literature was conducted to evaluate the impact of IVUS on fluoroscopy time, amount of contrast media used, and associated complications in EVAR procedures. Eight studies with a total of 609 patients were included in the review.

RESULTS: The use of IVUS was associated with significantly reduced fluoroscopy time compared to control groups in three of the eight studies. The amount of contrast media used was significantly lower in the IVUS group compared to control groups in five of the eight studies. The incidence of IVUS-related complications was generally low, with no complications reported in four of the eight studies. The most commonly reported complication was femoral pseudoaneurysm, which was managed with ultrasound-guided compression in most cases.

CONSLUSION: The use of IVUS in EVAR procedures may reduce fluoroscopy time and the amount of contrast media used, while the incidence of associated complications is generally low. These findings suggest that IVUS may be a useful tool for improving the safety and accuracy of EVAR procedures. However, further studies are needed to

determine the optimal use of IVUS and to fully evaluate its potential benefits and risks in this context.

COMUNICAÇÕES RAPID-PACE2

CR 11 Management of acute mesenteric ischemia in a tertiary centre: experience from the last 5-years and predictors of mortality

Mickael Henriques, Andreia Ministro, Augusto Ministro, Luís Mendes Pedro

CHULN

INTRODUCTION: Acute mesenteric ischemia results from a sudden cessation of blood flow to the visceral organs. Although infrequent, it's often fatal due to delays in the treatment, mostly due to a challenging diagnosis. Even when the patient survives, bowel resection is usually needed after revascularization

AIMS: To describe the experience of our department in the treatment of acute mesenteric ischemia, while trying to identify predicting factors for bowel resection and mortality.

METHODS: We performed a cross-sectional study based on a retrospective analysis of all the patients who were operated in our centre due to acute mesenteric ischemia from 2018 to 2022. The information was obtained through the patients' electronic records.

RESULTS: The study included 58 patients with a mean age of 73 years (44-91) and 53.4% were male.
46.6% cases were transferred from another institution.
The presenting event was acute mesenteric ischemia in 74.1% and acute-on-chronic in 25.9%.
The underlying cause was embolism in 48.3% of the cases and thrombosis of a native artery in 46.6%. Dissection and thrombosis of a previous revascularization occurred in 5.1%.
Fifty intestinal arteries were revascularized and the treatments performed are listed in table 1.
There was no significant correlation between evolution timings (duration of symptoms, time between admission and CT, CT and OR) and reference form other hospitals with bowel resection or mortality.
There was a significant correlation between laboratory markers (AST, ALT, LDH, lactate) and mortality at 24h, first week and first month, but not with bowel resection.
Eight patients were hospitalized for other reasons meaning that the time between admission and CT, CT and OR are not applicable.
Eighteen patients were dead at the moment of research, meaning that the medical records prior to their death are not available.

CONSLUSION: Part of the data regarding timings between onset of symptoms, diagnosis and treatment are lacking due to inaccessibility to other hospitals or to a deceased patient's records, leading to selection biases. A timely diagnosis, transfer (when needed) and treatment is crucial to ensure the patient's survival, preferably without bowel resection. Some laboratory markers can help predict mortality on some patients, but decision for treatment should not be based solely on these findings. Bowel resection is largely dependent on a direct examination, in a second look laparoscopy or laparotomy if necessary.

Table1

AMI/ACMI 58 cases				
28 **open** revascularizations	14 **endovascular** revascularizations	3 **hybrid** revascularizations	38 exploratory **laparotomies**	16 oriented for **palliative** care
21 thrombectomy (all SMA)	14 antegrade percutaneous stent angioplasty (12 SMA and 2 SMA+CT)	1 retrograde open stent angioplasty	12 bowel ressections	3 revascularized
1 thrombectomy and patch angioplasty		1 thrombectomy and retrograde stent angioplasty		
1 antegrade bypass (1 SMA+CT)		1 retrograde bypass SMA and stent angioplasty of the distal anastomosis		
5 retrograde bypass (4 SMA and 1 SMA+CT)				

CR 12 Secondary aortoenteric fistula: a surgeons' nightmare

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CHVNGE

INTRODUCTION: Secondary aortoenteric fistulas (SAEFs) are rare but represent one of the most challenging and devastating problems for vascular surgeons.
Our aim was to report our incidence and results of approach of SAEFs.

METHODS: A retrospective data analysis of patients treated for SAEFS in a single vascular institution between January 2012 and December 2021 was performed.
ICD9-10 codes were used to identify SAEFs (K316;5374;T8183XA;I772), open abdominal surgeries (04100J8;04100J0;04100JK;3952;3926;3925) and endovascular abdominal surgeries (04V03DZ;04V03EZ;3979;3971).
Analyzed parameters included patients' demographics, clinical presentation, diagnostic work-up, perioperative data and mortality.
Statistical analysis was performed using SPSS program.

RESULTS: 7 patients and 10 diagnoses of SAEF were included.
All patients were male. Mean age was 69+-4.36 years old
4 patients had previous history of aortobifemoral bypass (ABF) and 3 had previous rupture endovascular aneurysm repair (rEVAR). 4 patients had in-hospital complications and 5 had intercurrences before AEF diagnoses
The incidence of SAEFs was 1.79% after EVAR and 1.57% after aortobifemoral bypass.

Regarding diagnosis, the most common symptom was fever (n=7), followed by abdominal pain (n=3) and gastrointestinal bleeding (n=3). Upper endoscopy was positive in7, CTA was positive for infection in 8 and for SAEF in 2. The AEF was located in the duodenum in 8 cases. Average time between the initial procedure and detection of the SAEF was 9.67+- 3.51 years

Recurrence of fistula has been observed in 3 patients with a follow-up of 11.71+- 5.94 years

Regarding vascular treatment, were performed 2 EVAR explantation plus in situ revascularization; 3 ABF explantation plus extra-anatomic revascularization; 1 ABF explantation only; 2 aneurysmectomy and intrabdominal lavage; 1 debridement and ligation of aortic pseudoaneurysm and 1 aortic pseudoaneurysm embolization.

Mean total duration of surgery was 11.5 +-2.18 hours. Length of stay was 52.33+-40.05 days

The 30-day and 1-year mortality rate were 42.86% and 71.43%

CONSLUSION: The most frequent causes of SAEFs were rEVAR and aortobifemoral bypass. The occurrence of postoperative complications or intercurrences after discharge are associated with high risk of SAEF.

The most frequent clinical presentation was graft infection. In our experience, although partial prosthesis explantation is associated with a high rate of recurrence it is not associated with higher mortality rate.

Table 1- Patients' characteristics and first diagnosis of SAEFs

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
Age (years)	83	74	67	66	72	61	78
Sex	men	men	men	men	men	men	men
Comorbidities	HT; Dyslipidemia; Smoker; Gastrectomy with B2	HT; Popliteal aneurysms	Smoker; Dyslipidemia; Gastrectomy with Y Roux due to Gastric tumour	HT; Dyslipidemia	HT; Dyslipidemia; Smoker	Dyslipidemia	DM; HT
Index indication for graft implant	PAD: ABF + left F-P bypass 2003	rAAA: rEVAR 2011	PAD: ABF dacron bypass 2007	PAD:ABF dacron bypass 2005	PAD:ABF dacron bypass 2005	rAAA: EVAR medtronic 01/2019	rAAA: EVAR AUI+ leftCIA occlusion+ FF bypass 2015
Complications	---	Endoleak II	Early occlusion right branch; Thrombectomy and reanastomosis. Respiratory infection	---	---	Kinking left branch	Endoleak II
Intercurrences	2009: F-Pop bypass explantation due to infection	2015: Rupture AAA with endoleak I + II +Pseudomonas bacteremia; Abdominal lavage+Aneurysm sac closure	---	---	2017:ABF bypass thrombosed and infected 2017 conservative treatment	Feb/2019 left branch thrombosis: Thrombectomy+ Stent	2016 gas intraprosthesis: conservative tx; 2020 Endoleak Ib electively corrected
1st diagnoses	2015	2017	2017	2018	2018	May/2019	2021
Chief complaint	Fever+ Pelvic abcess	Fever; pain	Fever+Thigh abcess+Limb Ischemia	Fever+ Knee septic arthritis	Asymptomatic	Fever+abdominal pain	Melenas
Preoperative imaging	UDE: duodenum fistula; CTA: pelvic abcess	No UDE; CTA: endoleak Ia; fat densification	UDE: negative; CTA: Intraprosthetic air and occluded prosthesis	UDE: duodenum fistula; CTA: ABF prothesis infection	UDE: duodenum fistula; CTA: ABF prothesis infection	UDE: AEF; CTA: retroperitoneal abcess periEVAR	UDE: duodenal D3 hemorrhage; CTA: AEF with intraprosthetic air
Duration from the primary surgery (year)	12	6	10	13	13	0.33	6

Table 2- Surgery of SAEFs, hospitalization and mortality

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
Surgery	Right Fem-Axillary Bypass; days after prosthesis explantation + pelvic abscess drainage + duodenojejunal anastomosis	Endoprosthesis explanation+ aorta-bi-iliac Dacron interposition graft with silver-impregnated	Partial explantation ABF graft + petzer duodenostomy	Silver-impregnated bifom- axillary graft; 1 week latter:ABF partial explantation+ectomy+duodenal -jejunal anastomosis	Left F-Axxillary dacron graft;1 week later: Graft explantation+duodenal anastomosis	Aneurysmectomy+Sac Lavage+Segmental duodenal resection	Aneurysmectomy+sac lavage+ duodenum suture
Duration of surgery (hours)	9h +4.5+4	10.5	10.5	4.25 + 10	8	3	3.5
Intravenous antibiotics/Antifungal drug	Vancomycin+Meropenem	Piperacillin-tazobactam+Vancomycin	Piperacillin-tazobactam+Vancomycin	Ceftriaxone+vancomycin+metronidazole	Ceftazidima/avibactam+metronidazol+fluconaxol	vancomycin	Piperacillin-tazobactam+Vancomycin
Detected bacteria/fungus	Blood/urine cultures: -	Streptococcus agalactiae	E.Coli, Proteus mirabilis e S. Miridans	Blood/urine cultures: -, Candida famata, Klebsiella pneumoniae, Pseudomonas aeruginosa, Strerrophomonas maltophilia	Blood/urine cultures: - Enteroccus fecalis e pseudomonas aeuroginous	blood cultures: parvimonas micra	Pus + enterococcus faecium; E.coli; listeria monocytogenes; proteus mirabilis; st.aureus
Complications	Disorlented + fever; UDE: treitz clot; Cerebral CTA: subarachnoid hemorrhage	Multiorgan dysfunction with renal, cardiovascular, metabolic and hepatic failure	Transfemoral amputation 2 days later	1. Acute bilateral ischemia: axillary-bifemoral bypass thrombectomy 2. Duodenojejunal anastomotic dehiscence: D4 end duodenostomy + segmental jejunal enterectomy + witzel jejunostomy; New dehiscence and collection; multiorgan dysfunction			
Length of stay (day)	22	9	88	60	5+20	23	27
Intercurrences					2M: hospitalized due to intra-abdominal collections;5M: false aortic aneurysm: coils embolization		Readmitted 1 week after: fever+posttraction+collection drained by IR
Mortality	Death	Death	Alive	Death	Alive	Alive	Death (Alive at 1 month)

Table 3- Characteristics of second relapse, regarding diagnoses, surgery, hospitalization and mortality

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
2nd relapse			2018		2019	2021	
Chief complaint			Melena and hematochezia		March/2019 Hematemesis	Fever	
Preoperative imaging			UDE: -; Colonoscopy+Capsule: +; CTA: AEF between remaining stump of bypass + D3 duodenum		March/2019 CTA: no AEF; EDA: stomach agiectasia(argon+clips); Days later: hematemesis UDE: duodenal ulcer	UDE: D3/D4 aortoduodenal fistula with purulent content CTA: Permeable prosthesis; Fat diffuse densification, no fluid collections. Periprosthetic gas. No AEF	
Duration from the second surgery (year)			1		1	2.3	
Surgery	---	---	Infrarrenal aorta occluder + coils andplug lumbar and IMA embolization	---	March 2019: segmental duodenojejunostomy+debridement and isolation of aortic pseudoaneurysm+duodenojejunal anastomosis and segmental ileocolectomy Ileocolic anastomosis	Primary jejunal closure+Aortic endoprosthesis partial explantation+in situ reconstruction with aorto-bi-iliac interposition graft with silver-impregnated Dacron graft	---
Duration of surgery (hours)						7	
Detected bacteria/fungus			---		---	Klebsiella pneumoniae	
Intravenous antibiotics/Antifungal drug			---		---	piperacillin-tazobactam+vancomycin+fluconazole	
Complication			Right deep axillofemoral PTFE graft; Immediate PO thrombosis: thrombectomy + AFP anastomosis		April 2019: hematemesis shock: attempted aortic stump ligation with intraoperative death	---	
Length of stay (day)			20		---	42+21	
Mortality			Alive		Death	Alive	

CR 13 Uma análise de diferentes técnicas no tratamento de disfagia lusória: existe um gold-standard?

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INTRODUÇÃO: Disfagia lusória (DL) é um tipo de disfagia, por vezes causado por artéria subclávia direita aberrante (ASDA), a qual pode coexistir com divertículo de *Kommerell* (DK). Atualmente não existe tratamento *gold-standard*, sendo as opções cirúrgicas a via aberta, endovascular ou híbrida.

MÉTODOS/OBJETIVOS: Utilizando a *Pubmed* analisámos artigos dos últimos 10 anos sobre DL por ASDA, comparando diferentes abordagens cirúrgicas: aberta, endovascular e híbrida. O objetivo primário foi avaliar melhoria sintomática após cirurgia. Objetivos secundários incluíram complicações, taxa de mortalidade, tempo de internamento, reintervenções e anomalias do arco.

RESULTADOS: Incluíram-se 20 artigos, relatando 40 pacientes. Idade média 49 anos, 31 doentes do sexo feminino (77,5%). Vinte e sete pacientes (67,5%) tratados com cirurgia aberta, 12 (30%) com híbrida e 1 (2,5%) endovascular. O procedimento mais comum no grupo da cirurgia aberta foi bypass/transposição carótido-subclávia direita (BCSD) com ou sem laqueação cirúrgica da origem da subclávia aberrante. No grupo da cirurgia híbrida, metade dos pacientes foram tratados com BCSD seguida de reparação endovascular da aorta torácica (TEVAR) e a outra metade com BCSD seguida de embolização da origem da subclávia. Todos os doentes apresentaram melhoria sintomática, exceto 4 (14,8%) no grupo da cirurgia aberta, que relataram disfagia persistente: 2 necessitaram de reintervenção cirúrgica (ambos com DK não tratado) e 2 necessitaram de dilatação esofágica endoscópica. Foram relatadas complicações pós-operatórias em 5 pacientes (18,5%) no grupo da cirurgia aberta, tratados de forma conservadora (complicação mais comum síndrome de *Horner*) e em 2 pacientes (16,7%) no grupo da cirurgia híbrida (1 reintervenção por endoleak IA pós TEVAR). Houve 1 morte no grupo da cirurgia híbrida por insuficiência pulmonar. A duração média de internamento foi 6 dias. Oito doentes (20%) apresentaram arco bovino e 5 DK (12,5%); um paciente apresentava aneurisma distal da subclávia direita.

CONCLUSÃO: A literatura mais recente não sugere uma opção preferencial, embora a cirurgia aberta seja a mais utilizada. Não houve diferenças entre os vários grupos. Idade e presença de anomalias não influenciaram a escolha da técnica, embora doentes com disfagia e DK pareçam beneficiar da sua correção.

CR 14 Arterial injury associated with lower extremity trauma – a unicenter analysis

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INTRODUCTION: Lower limb trauma when combined with arterial injury has a high rate of amputation and death, reaching up to 20% and 10%, respectively. Even after successful arterial reconstruction, limb amputation can be a consequence of extensive soft tissue, bone and nerve injuries, especially after blunt trauma. To improve the limb salvage rate it is crucial to fully understand the lesions mechanism, available treatments and factors associated with the worst outcomes.

METHODS: We retrospectively analyzed the patients treated in our emergency department with lower limb extremity trauma with concomitant arterial injury, between January 2020 and December 2022. Patients treated with primary amputation were excluded. Demographic, operative, and postoperative clinical data was collected to identify the factors associated with limb amputation and death.

RESULTS: In this period, 12 male and 3 female patients were submitted to arterial reconstruction with a mean age of 54 years old. The most frequent mechanism of the lesion was blunt trauma with a mean Injury Severity Score (ISS) of 28.6. 60% of the patients had a Mangled Extremity Severity Score (MESS) of equal or greater than 7. In terms of arterial location, the popliteal artery was the most frequently affected segment accounting for up to 60% of the cases. Seven out of fifteen patients had an orthopedic fixation first. Eight patients were treated with venous femoropopliteal bypass, four with interposition graft, two with primary closure, and one with endovascular stent graft. Two patients died after successful revascularization, due to multiorgan dysfunction. Four patients needed limb amputation, despite successful revascularization in two of them. From this group, three had a MESS of nine or greater, an exposed fracture and two or more limb fractures. No blood analysis parameters were correlated with limb amputation.

CONCLUSION: In the literature, age, prolonged limb ischemic time, and severity of concomitant bone and soft tissue lesions are in relation to worst outcomes. In the presence of a multiple injured limb the treatment and its priorities are still debated and usually individualized in clinical practice. This study highlights the importance of identifying, as a multidisciplinary team, patients not suitable for limb revascularization due to complex soft and bone injuries.

CR 15 Tratamento de lesões arteriais com calcificação grave: utilização da litotripsia intravascular na doença arterial periférica

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INTRODUÇÃO: As lesões arteriais com calcificação grave são um desafio terapêutico porque limitam a expansão do vaso após angioplastia e condicionam um maior risco de complicações como disseção, perfuração ou embolização.
O catéter de litotripsia intravascular (LIV) da *Shockwave*® contem múltiplos emissores de pulsos de energia ao longo de um balão, que é insuflado a uma pressão subnominal, permitindo a aposição à parede do vaso sem causar barotrauma. Estes pulsos causam fraturas do cálcio em múltiplos eixos, melhorando a *compliance* e otimizando o tratamento definitivo da lesão-alvo. Apresenta baixa taxa de estenoses residuais e tem baixo risco de complicações.

CASO CLÍNICO: Apresentamos dois casos clínicos em que foi utilizada a LIV em lesões ilíacas com calcificação grave.
A primeira utilização ocorreu numa mulher de 70 anos, com antecedentes de tabagismo, dislipidemia e hipertensão, com claudicação glútea e da coxa para curtas distâncias, sem pulso femoral bilateral, com oclusão da artéria ilíaca comum bilateral, com calcificação circunferencial.
O segundo caso era uma mulher de 69 anos, com antecedentes de cardiopatia isquémica, tabagismo e asma, com dor em repouso e lesões tróficas plantares à esquerda, sem pulso femoral esquerdo, com oclusão cálcica da artéria ilíaca comum e estenoses da artéria ilíaca externa e femoral comum à esquerda.
Ambas foram submetidas a recanalização subintimal com reentrada espontânea na aorta, preparação do vaso com cateter-balão *Shockwave*® e kissing stent da bifurcação aórtica com *stents* cobertos *Advanta V12*®.

RESULTADOS: O resultado angiográfico final em ambos os casos foi excelente, com expansão completa dos stents e lúmen vascular, sem lesões residuais ou complicações. Os acessos foram encerrados com dispositivo de encerramento e as doentes tiveram alta após 24 horas de vigilância, sem intercorrências.
Ambas as doentes apresentam-se atualmente assintomáticas, com pulso femoral simétrico.

CONCLUSÃO: A LIV é um método eficaz e seguro em lesões altamente calcificadas, permitindo melhorar os resultados técnicos e clínicos, com baixo risco de complicações. Na opinião dos autores, apresenta como principal vantagem a possibilidade de ser utilizado após recanalizações subintimais, ao contrário dos dispositivos de aterectomia. Prevê-se uma expansão da sua utilização no tratamento endovascular da doença arterial periférica, atualmente ainda residual em Portugal.

CR 16 Anastomotic pseudoaneurysm after abdominal aortic aneurysm open repair: two case reports.

João Diogo Castro, João Cabral, Carlos Pereira, Arlindo Matos, Rui Machado, Rui Almeida

CHUdSA

INTRODUCTION: Abdominal aortic aneurysm open repair still is recommended as the preferred treatment modality for patients with long life expectancy. However, reoperations are technically challenging and related to higher morbidity and mortality. Most reoperations occur due to anastomotic pseudoaneurysms (AP) in the proximal or distal end of the graft resulting from a suture line or anastomosis breakdown. We present 2 cases of patients treated by open repair and subsequently presented with AP.

CLINICAL CASE 1: A 66-year-old male, with a prior history of open repair of a rupture 12cm suprarenal aortic aneurysm 8 years before, presented with abdominal, left flank, and back pain. An angioCT showed a large 11.2 cm pseudoaneurysm at the proximal anastomosis site (image 1A). A CHEVAR was performed to treat the AP and preserve the Celiac trunk (CT) and superior mesenteric artery (SMA) because the patient was on hemodialysis. From left humeral access, we performed left renal artery embolization (to avoid further endoleak), catheterization, and stenting of CT and SMA with self-expanding stent grafts (SESGs). The endoprosthesis main body was delivered from the right femoral access. In control angiography, there was the need to extend CT and SMA SESGs. After the surgery the patient became asymptomatic, and the AP was excluded (image 1B).

CLINICAL CASE 2: A 76-year-old male with prior history of 5.6cm AAA was treated by open repair in 2004. After 18 years, the patient started with epigastric pain, so a new angioCT was performed showing proximal and distal posterior APs. The proximal APs had an angulated, short neck requiring precise planning (image 2A).To exclude both APs a pEVAR was performed using GORE conformable 32x14x140mm main body. However, due to tortuosity the endoprosthesis migrate distally and was a need to extend it proximally with a 32mmx4.5cm aortic cuff. The following steps were performed without complications and the completion angiography showed APs excluded (image 2B).

CONCLUSION: AP is a rare but potentially life-threatening aortic surgery complication requiring vigilant surveillance and timely intervention.EVAR for AP is a less invasive and effective treatment option compared to open surgery, with lower morbidity and mortality rates.

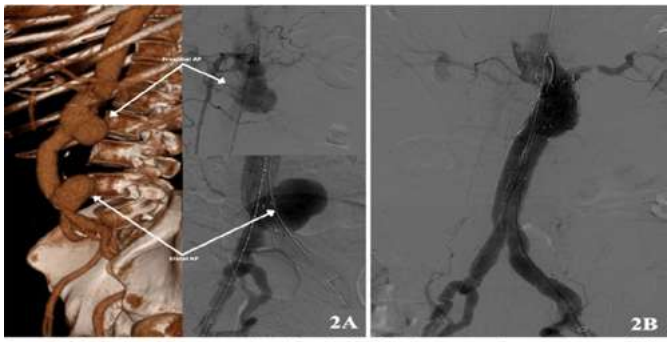

Image 2: 2A - AngioCT 3D reconstruction of proximal and distal anastomotic pseudoaneurysms (AP) and respective angiography findings; 2B – Completion angiography after EVAR to exclude AP.

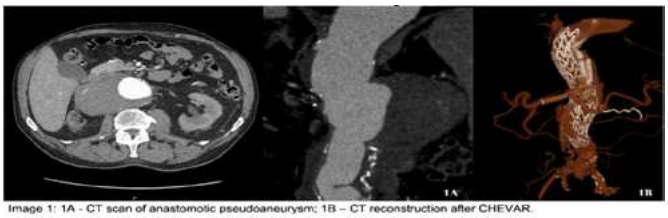

Image 1: 1A - CT scan of anastomotic pseudoaneurysm; 1B – CT reconstruction after CHEVAR.

CR 17 Thoracic aortic aneurysms, a portuguese single center's 10-years experience

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Centro Hospitalar e Universitário de Coimbra

OBJECTIVE: Thoracic aortic aneurysms (TAAs) are an increasingly prevalent pathology with significant associated morbidity and mortality. Thoracic endovascular aortic repair (TEVAR) is the primary line of treatment. The purpose of this study was to analyze our center's experience in the treatment of TAAs.

METHODS: A retrospective review of our institutional database was done to identify all patients treated for TAAs in a 10-year period, from 1 January 2012 to 31 December 2022. Data were extracted from patients' medical records. Primary outcome was all-cause mortality and secondary outcomes were procedure related morbidity (vascular access complications, medullary ischemia, stroke, endoleaks, migration, aneurysm sac enlargement >5mm) and need for reintervention at 1-, 6- and 12-months follow-up. A descriptive and inferential analysis of the data was performed. Statistical analyses were conducted using the IBM Statistical Package for Social Sciences (SPSS) software.

RESULTS: We identified 34 patients treated for TAAs in this period. Mean aneurysm diameter was 63mm [35-100], 55.9% fusiform and 44.1% saccular. The majority (91.2%) were located at the descending thoracic aorta and 3 (8.8%) of them extended to the aortic arch. The most common etiology was degenerative in 22 patients (64.7%), followed by aortic dissection in 8 patients (23.5%). Elective surgery was performed in 19 (61.3%) patients and 12 (38.7%) had urgent repair. TEVAR was the treatment of choice in 24 (77.4%) patients, and the remaining 7 (22.6%) were treated with hybrid surgery. Mean length of hospital stay was 10 days [2-80] (6 days for elective repair versus 16 days for urgent repair, p=0.016). At 1 year follow-up, all-cause mortality was 15%, morbidity was 30% (with 6 (22%) patients having a type Ia endoleak), and need for reintervention was 22%. Aneurysm diameter was a significant risk factor for procedure related morbidity (median diameter of 73.5mm versus 56.0mm in patients with no morbidity; p=0.027). The presence of type Ia endoleak was significantly associated with higher reintervention rates (p=0.001), but not with higher mortality rates (p=0.515). Age, female sex, etiology, and urgent repair weren't associated with any significant differences in the outcomes.

CONCLUSIONS: TEVAR proved to be effective in the treatment of TAAs, with good outcomes at short and mid-term follow-up. TAAs should be diagnosed earlier and be promptly treated when meeting criteria to prevent worse outcomes.

MEAN AGE	68 years [47-87]
GENDER (n=34)	
Male	27 (79.4%)
Female	7 (20.6%)
COMORBIDITIES (n=31)	
Hypertension	29 (93.5%)
Dyslipidemia	17 (54.8%)
Smoking history	14 (45.2%)
Diabetes	9 (29.0%)
Coronary Disease	8 (25.8%)
Arrythmia	4 (12.9%)
Chronic Renal Failure	4 (12.9%)
Obesity	3 (9.7%)
COPD	3 (9.7%)
Heart Failure	2 (6.5%)
Valvular Disease	2 (6.5%)
PRESENTATION (n=34)	
Asymptomatic	14 (41.2%)
Ruptured Aneurysm	10 (29.4%)
Thoracic or Dorsal Pain	6 (17.6%)
Compressive Symptoms	3 (8.8%)
Aortobronchial Fistula	1 (2.9%)

Table 1 - Patients' demographic characteristics and presentation.
COPD: chronic obstructive pulmonary disease.

TIMING	
Elective	19 (61.3%)
Urgent	12 (38.7%)
PROCEDURE	
TEVAR	24 (77.4%)
Hybrid	7 (22.6%)
- Simultaneous	4 (57.1%)
- Staged	3 (42.9%)
GRAFTS	
Medtronic Valiant®	12 (38.7%)
Cook Zenith®	12 (38.7%)
Gore C-TAG®	5 (16.1%)
Jotec E-vita®	2 (6.4%)
MEAN OVERSIZING	18% [7-29]
MEAN STENT GRAFT EXTENSION	214mm [100-451]
MEAN TOTAL SURGERY DURATION	131 minutes [50-375]
MEAN DOSE OF CONTRAST	177mL [30-460]
CSF DRAINAGE	5 (16.1%)
LSA COVERAGE	8 (25.8%)
NUMBER OF STENT GRAFTS	
One	19 (61.3%)
Two	8 (25.8%)
Three	4 (12.9%)

Table 2 – Treatment Details.
CSF: cerebrospinal fluid; LSA: left subclavian artery.

CR 18 Impact of type of anaesthesia in short-term outcomes after endovascular aneurysm repair

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CHUSJ

INTRODUCTION: The combination of general anaesthesia and epidural anaesthesia has been well established as gold standard in open repair of abdominal aortic aneurysm. On the other hand, in endovascular aneurysm repair (EVAR), local, locoregional and general anaesthesia have been variably used and the ESVS guidelines state that anaesthesia in elective EVAR may follow local hospital routine and individual patient assessment and preference. The aim of this work is to compare local/locoregional and general anaesthesia regarding short-term outcomes after EVAR.

METHODS: A retrospective review of all patients undergoing EVAR in a tertiary institution from January 2018 to December 2021 was performed. Patient demographics, procedural and 30-day outcomes were collected. Outcomes were defined according to the SVS EVAR reporting guidelines.

RESULTS: A total of 129 patients were included, 96 (74%) in the locoregional group and 33 (26%) in the general anaesthesia group. Of the 96 patients that underwent locoregional anaesthesia, 77 were exclusively local anaesthesia. Patients that underwent EVAR under general anaesthesia were significantly younger (mean age 70,0 ± 8,1 vs 73,9 ± 8,3; p=0.022), had more cerebrovascular disease (CVD) (30% vs 7%; p<0.001) and more smoking history (73% vs 49%; p=0.018). All other baseline characteristics were similar between the two groups. Mean follow-up was 18 months. There were no significant differences regarding timing of intervention and the majority were performed in an elective setting for both locoregional (75%) and general (85%) anaesthesia groups. Patients that underwent general anaesthesia had significantly more intra-operative complications (39% vs 18%; p=0.011). There were no significant differences regarding length of stay, 30-day procedures, 30-day events or 30-day complications.

CONCLUSION: In our centre, the majority of performed EVARs were done under local/locoregional anaesthesia and there were no differences regarding the timing of the procedure. Patients that underwent general anaesthesia were younger and had higher prevalence of CVD and smoking history. These patients had a significantly higher risk of intra-operative complications. There were no significant differences in short term outcomes between both groups, including length of hospital stay.

CR 19 Operative time and results of elective endovascular abdominal aortic aneurysm repair

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INTRODUCTION: Operative time is a known risk factor for adverse outcomes after open surgery. However, not much is known about how operative time may influence complications after endovascular aortic aneurysm repair (EVAR).

METHODS: A retrospective review of all patients submitted to elective EVAR for infra-renal abdominal aortic aneurysms from January 2018 to December 2021 was performed. Patients with complex repair (F/BEVAR) were excluded. Primary endpoint was the impact of prolonged operative time on 30-day complications after EVAR. Secondary endpoints were secondary interventions and complications during follow-up. Univariate analysis was conducted using chi-square and multivariate analysis was conducted using multivariate logistic regression.

RESULTS: A total of 99 patients submitted to elective EVAR had information about operative time. Mean operative time did not differ between gender (162±81 minutes in male patients vs 170±90 minutes in female patients, p=0.810) or age. Operative time was longer in patients with peripheral artery disease, however not reaching significance (233±164min in patients with PAOD vs 157±70min in patients without PAOD, p=0.27). Operative time did not differ between anaesthesia type and type of endograft configuration. Patients submitted to adjuncts during index surgery had increased operative times, only reaching significance in cases with hypogastric embolization (259±118 min vs 153±70 min, p<0.001). Mean operative time in patients with complications in the first 30-days post-operative was 52 min longer when compared to patients without complications (p=0.012). After adjusting for sex, age and pre-operative adjunct need, operative time did not remain significant (OR 1.006, CI 95% 1.000-1.012, p=0.052). Operative time did not differ in patients with complications during follow-up (179±92 min vs 162±81 min, p=0.495).

CONCLUSION: Longer operative times in EVAR patients were related to adjunct procedures, mainly hypogastric embolization. Patients with longer operative times had more 30-day post-operative complications but did not remain an independent risk factor after multivariate analysis. Longer operative times also did not translate into more complications during follow-up.

CR 20 IVUS no controlo de colocação de endoproteses em aneurismas da aorta

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OBJECTIVO: Validar a utilização de IVUS como metodo de controlo na colocação de endoproteses para tratamento endovascular de aneurismas da aorta toraxica e abdominal com vista a uma politíca de contraste zero.

MATERIAL E MÉTODO: No periodo de três anos entre Janeiro de 2020 e Dezembro de 2022 foram tratados doze (12) doentes com Aneurismas da aorta (onze abdominais e um toraxico) utilizando IVUS no controlo da colocação da endoprotese. A seleção dos doentes baseou-se na existencia de insuficiencia renal crónica em estadio III ou mais avançado (TFG < 60 ml/m/1,73m2). Selecionamos onze homens e uma mulher com idade média 77,2 anos (66-85) Todos foram tratados sob anestesia local e sedação (Midazolam 2mg ev). Em todos os casos foi usada a tecnica percutanea e no final utilizado o sistema de encerramento Manta.O Usamos o cateter de IVUS Philips Vision PV .035. O IVUS foi utilizado para localização da emergencia das arterias renais, das arterias hipogastricas, avaliação das arterias de acesso e do colo aneurismático. A confirmação do planeamento previo foi tambem efectuada. Foi efectuado controlo angiografico imediatamente antes da abertura do sistema de fixação da endoprotese com injeção de 20cc de solução de contraste a 50% (10 cc de contraste e 10cc de NaCl 0,9%). No final da intervenção foi tambem efectuada injeção de 25 cc da solução de contraste.

RESULTADOS: Não houve mortalidade. Todas as endoproteses foram colocadas como previamente planeado poupando em todos os casos ambas as artérias renais e as arterias hipogastricas.Não houve qualquer complicação de acesso ou encerramento. Na angiografia final não se detectou nenhum endoleak tipo 1. A quantidade média de contraste utilizado foi de 27 cc (22,5-40cc). Em todos os casos houve coincidencia entre a identificação da emergencia arterias renais por IVUS e por angiografia. O tempo de fluroscopia variou entre os 14,4 minutos e os 22,3 minutos. A quantidade total de radiação do procedimento variou entre os 443mGy/cm2 e os 1507mGy/cm2. Nenhum doente teve agravamento da sua função renal após o procedimento mantendo os valores de creatinina e TFG sobreponiveis aos do pré intervenção.

CONCLUSÃO: Esta curta série demontra a validade de utilização do IVUS durante o tratamento endovascular de aneurismas da aorta sem qualquer acrescimo de complicações reduzindo significativamente a utilização de contraste, não excluindo a possibilidade de uma politica de zero contraste em casos selecionados.

SESSÃO MELHOR POSTER

P01 Oncovascular surgery: cases report and teamwork perspective

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INTRODUCTION: Surgical resection remains the cornerstone for the curative treatment of malignant tumors, such as pancreatic adenocarcinomas. Pancreaticoduodenectomy with vascular reconstruction is a promising approach for tumors invading the portomesenteric vein and an aggressive surgical approach can improve survival at mid- and long-terms. Thus, vascular surgeons have an increasing role in these surgeries. Therefore, we describe our recent and initial experience, and efforts to grow as a true team to offer a better and systematic response to these patients.

CASE REPORT: We present two cases of 68 and 69 years-old female patients, both with a tumor of the pancreatic head. In the first case, during the pancreaticoduodenectomy, a 4 cm long involvement of the portomesenteric vein in 30% to 50% of its circumference was denoted. The choice for reconstruction, after tumor resection, was a primary repair with a Dacron patch. In the second case, the resection was programmed after neoadjuvant chemotherapy, and a circumferential involvement of the portomesenteric vein in a long extension was observed requiring an extensive venous reconstruction with an interposition graft (Dacron - 8mm) with splenic vein reimplantation.
In both cases disease-free margins was achieved and no mortality was registered within 30 days after surgery.

CONCLUSIONS: With these two initial cases, we concluded that good results can be achieved. As a team, in our center, efforts are being made to delineate preoperatively our strategy to treat these complex patients, choosing optimal vascular reconstructive options tailored to the patient. Recently bovine patch became available in our institution, which is a good alternative to avoid additional operative time and to reduce the infection risk associated with synthetic material use.

P02 Leriche syndrome after visceral aortic revascularization – what now?

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INTRODUCTION: Thoracofemoral bypass (TFB) is an alternative to aortofemoral bypass (AFB) or extra-anatomic

bypass for severe aortoiliac occlusive disease (AIOD). TFB may be particularly useful in select patients with concurrent visceral aortic branch vessel disease, infrarenal aortic occlusions, or after failed AFB.

OBJECTIVES: To describe a clinical case of a syntomatic Leriche syndrome in the presence of with concurrent visceral aortic branch vessel disease.

METHODS: Based in clinical report.

RESULTS-CASES REPORT: Male, 57 years old, with a personal history of hypertension and smoking.The patient went to the emergency department due to flank pain and anuria, with 2 days of evolution, requiring urgent dialysis. An AngioCT was performed revealing: 1) thrombosis of the abdominal aorta, with chronic appearence in the infrarenal segment and acute in the suprarenal segment; 2) permeability of superior mesenteric artery (SMA) and celiac trunk (CT); 3) a patent right renal artery (probably by an adrenal collateral); 4) chronic occlusion of the left renal artery, with left kidney atrophy. Standing at an acute juxtarenal aortic thrombosis with acute kidney ischemia, the patient was proposed for urgent surgery and underwent, by the Octopus technique, to Advanta V12 9x38mm covered stenting of CT, Advanta V12 8x59mm covered stenting of SMA, Advanta V12 7x59mm + 8x38mm covered stent of right renal artery and simultaneous post-ballooning with 10x40mm balloons. Final angiography with permeable SMA, CT and right renal artery. The patient was discharged clinically improved, with full recovery of renal function. During follow-up, due to patient complaints' of disabling intermittent claudication, being very young and active, we decided to perform a TFB, which was challenging but uneventful. The patient is assymptomatic and with palpable pedal pulses at 24 months follow-up. Postoperative CT angiography revealed visceral aorta branches and TFB patency.

CONCLUSION: TFB can be performed with good outcomes for patients with severe AIOD, especially if concomitant visceral/infrainguinal reconstruction is warranted. These results support a continued role for TFB in select patients.

P03 Mycotic aneurysm in a patient with pneumonia and spondylodiscitis: who's guilty?

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INTRODUCTION: Mycotic aneurysm is a rare entity, with rapid progression and which can be fatal without adequate treatment. The incidence of rupture is higher than that of arteriosclerotic aneurysm with a high mortality rate.

CLINICAL CASE: We report a case of a 58-year-old man with known history of HIV infection with good immunovirological staging, treated squamous cell carcinoma of the anal canal and chronic gastritis, who presented with a six days history of intense back pain, malaise, fever and rigors. After examination, he was admitted on suspicion of acute pyelonephritis. During the course of hospitalization, he was diagnosed with pneumonia of the right base, infectious spondylodiscitis and mycotic aneurysm of the abdominal aorta with involvement of the visceral plaque. From the microbiological study performed, only positive blood cultures for Klebsiella pneumoniae were found. After a multidisciplinary discussion of the case, the patient underwent aorto-aortic interposition via thoracophrenolaparotomy with the support of Cardiac Surgery without the need to reimplant visceral vessels due to the patch configuration of the proximal anastomosis under left heart bypass, after six weeks of effective targeted antibiotic therapy.

CONCLUSION: In this case it remains to be defined whether the cause of the mycotic aneurysm was hematogenous dissemination with a focus on pneumonia or by contiguity with a focus on spondylodiscitis. Given the morbidity and mortality associated with this entity, early diagnosis and adequate treatment with surgical correction and antibiotic therapy with adequate duration and dose are important aspects for improving survival in these cases.

P04 Secondary aortoenteric fistula with simultaneous type a aortic dissection after evar for a ruptured abdominal aortic aneurysm – a case report

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BACKGROUND: Ruptured abdominal aorta aneurysm (AAA), acute type A aortic dissection (AD), aortoenteric fistula (AEF) and graft infection are 4 challenging and lethal aortic disorders that require timely but careful surgical planning. We report the case of a patient with a succession of the 4 aforementioned disorders.

CASE REPORT: A 65-year-old patient was electively admitted for an infrarenal AAA EVAR. The surgery was postponed due to symptomatic COVID-19 infection; however, while

awaiting recovery, the patient experienced lumbar pain and hypotension. AngioCT showed an 8.5 cm ruptured AAA, and the patient underwent an urgent ABI EVAR.
At four months post-EVAR, the patient was readmitted with gastrointestinal intermittent bleeding and hemodynamic instability. AngioCT scan showed a hyperacute type A AD extending from the aortic root to the thoraco-abdominal transition with involvement of supra-aortic trunks, as well as a secondary AEF from the jejunum to the aneurysmatic sac. Cardiac surgery decided not to intervene for the AD due to the risk of AEF haemorrhage and prosthetic infection.
Given the high surgical risk of abdominal aortic surgery in a hyperacute AD, definitive surgery was postponed and planned in different times: correction of the AEF, stabilization of the AD to a chronic stage and finally endoprosthesis explantation and revascularization.
Four weeks after AD and with transesophageal echocardiography monitoring, the patient underwent primary closure of the AEF by suturing of the aneurysmatic sac and the jejunum defects. Follow-up angioCT showed reduction of the aneurysmatic sac, and analytic infection parameters remained negative for ten months. At this time, the patient was readmitted with recurrent AEF and endoprosthesis infection and underwent definitive surgery of EVAR explantation, right aorto-iliac interposition with a bovine pericardium tapered tube, femoro-femoral bypass and enteric repair, with no complications to date.

DISCUSSION: Secondary AEF and aortic graft infections are uncommon but life-threatening complications after EVAR. Their management involves explantation of the infected graft, revascularization, and bowel repair. In this rare case, the diagnosis of a hyperacute AD complicated treatment options due to the associated risks of aortic clamping in an acute phase.

P05 Isolated celiac and splenic arteries dissection with splenic pseudoaneurysm: How can someone be that (un)lucky?

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INTRODUCTION: Spontaneous isolated visceral artery dissection (SIVAD) is rare, and the celiac trunk can account for a minority of cases. Rarer still is isolated celiac and splenic arteries dissection (ICSAD) with 42 reported cases. As so, we herein present a unique case of an ICSAD with a large splenic pseudoaneurysm.

CASE REPORT: A 44-years-old man with a recent history of pancreatitis was observed by general surgery in an outpatient setting due to an intermittent mesogastric pain with several weeks of duration. A CT scan was subsequently performed revealing an unexpected ICSAD associated with a pseudoaneurysm with 65mm maximum diameter of the splenic artery. Due to the impending risk of rupture, a prompt endovascular procedure was scheduled to exclude the pseudoaneurysm and treat the dissection. Through a left brachial access, a 7F sheath was placed in the true lumen of the celiac trunk. After reaching the splenic artery distal to the pseudoaneurysm, this arterial segment was embolized with detachable coils (Terumo Azur™ CX). The pseudoaneurysm itself was also embolized with detachable coils (Terumo Azur™ Framing and CX), so was the splenic artery proximal to the pseudoaneurysm (Terumo Azur™ CX). A stentgraft (Gore® Viabahn®) was then placed in the common hepatic artery just proximal to the gastroduodenal artery ostium. A second stentgraft was further placed up to the ostium of the celiac trunk, treating the full extension of dissection of this artery and allowing the complete exclusion of the splenic artery. The patient had an eventful recovery, being discharged two days after surgery. During follow-up, a complete resolution of the pain was observed and the performed genetic screening tests for connective tissue disease were negative. An ultrasound at one month and a CT scan at one year after the procedure were further performed, revealing patency of both stentgrafts, apparent exclusion and shrinkage of the pseudoaneurysm with no spleen infarction areas.

DISCUSSION: Though not believed to be related to atherosclerosis, the etiology of spontaneous isolated visceral arteries dissection remains unclear.
This appear to be the 43rd case of ICSAD. Yet, to the best of our knowledge, adding a splenic artery pseudoaneurysm and a previous acute pancreatitis to the described clinical condition is unique.
The described endovascular approach allowed treat the patient uneventfully and should probably be considered as the first option treatment in these cases.

P06 Extracranial carotid artery aneurysm repair – the importance of technical details

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BACKGROUND: Extracranial internal carotid aneurysms are extremely rare and usually diagnosed as incidental findings although thromboembolic events or rupture can occur. Historically treated by open surgery, endovascular repair is emerging as an alternative. We present our center's experience with both approaches.

CLINICAL REPORTS:

REPORT 1: 60-year-old male presented with an asymptomatic 17mm saccular aneurysm of the carotid bifurcation. He underwent arterial reconstruction with a bypass using a 6mm ePTFE graft and reimplantation of the external carotid artery. There were no complications after two years of follow-up.

REPORT 2: 61-year-old female with presented with an asymptomatic 17mm saccular aneurysm of the internal carotid artery. Aneurismectomy and direct reconstruction through an end-to-end anastomosis was possible due to artery redundancy. There were no complications after one year of follow-up.

REPORT 3: 36-year-old patient with a history of Cushing's syndrome due to a secretory adenoma of the pituitary gland presented with a 16mm fusiform aneurysm of the internal carotid artery. After the recession of the pituitary gland tumor, he underwent arterial reconstruction with an inlay saphenous vein bypass. There bypass is patent with no complications reported by the 8th moths of follow-up.

REPORT 4: 77-year-old female presents with a 27mm saccular aneurysm of the internal carotid artery, causing nerve compression symptoms. Endovascular aneurysm exclusion using a self-expandable covered stent was performed through a cervical carotid surgical approach. Stent occlusion was observed in the postoperative period but without neurological symptoms.

CONCLUSION: There are no specific guidelines to guide clinical practice but the risks associated with intervention favor treating symptomatic patients. Data on endovascular repair is limited to small series and clinical reports. This approach may preclude complex surgical dissections, especially in distal aneurysms. Existing data on short- and medium-term outcomes are comparable to surgery, but long-term results are unknown. Up to 75% technical failure rates are related to artery tortuosity, which may explain the early stent occlusion in our patient. Also, data regarding the best anti-thrombotic regimen is lacking. Nonetheless, endovascular therapy has acceptable results but treatment decisions must be individualized according to the morphology and location of the aneurysm as well as the patient's comorbidities.

P07 Calcifilaxia uma causa rara de úlcera de membro

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INTRODUÇÃO: A calcifilaxia é uma doença rara com mortalidade a 1 ano de 50-80%. Ocorre sobretudo em mulheres com doença renal crónica terminal (DRCt) e manifesta-se por úlceras necróticas com dor intolerável. A Cirurgia Vascular (CV) é a primeira a intervir por suspeita de doença arterial periférica (DAP).

CASO CLÍNICO: Mulher de 40 anos, com DRCt em hemodiálise, obesidade mórbida foi internada no Serviço de CV dor intolerável nas úlceras do pé. Sofreu um arranhão de gato 2 meses antes, com agravamento para úlceras com exposição tendinosa do extensor do hallux (4x4cm) e envolvimento superficial circunferencial (fig.1). Eco-Doppler com curvas bifásicas nas artérias tibiais e competência do sistema venoso. Realizou piperacilina/tazobactan e fluconazol dirigidos a *Serratia marcescens* e *Candida albicanse* e foi submetida a desbridamento cirúrgico com colheita de biópsia que revelou "vasos de parede espessa com calcificação distrófica na íntima e média compatíveis com calcifilaxia". Laboratorialmente com paratormona (PTH) de 1104 pg/ml (11-79,5pg/ml), cálcio total corrigido de 9mg/dl (8,5-10,1mg/dl) e fósforo de 7,1mg/dl (2,5-4,9mg/dl). Realizou penso com apósito de carvão ativado na úlcera e óxido de zinco em redor. O plano de diálise incluiu quelante de cálcio e redução de cálcio do dialisado. A cicatrização foi obtida após oito semanas. (fig.2).

DISCUSSÃO: Na calcifilaxia existe uma desregulação do eixo cálcio-fosfato que produz uma calcificação da média das arteríolas, hiperplasia da íntima e microtrombose.
Os valores séricos de cálcio, fosforo e PTH permitem suspeitar mas é através de biópsia que é possível identificar uma paniculite calcificante septal que suporta o diagnóstico.
O tratamento assenta na correção do cálcio-fosfato e cuidados de penso. Paratiroidectomia poderá ser opção em casos refratários à terapêutica médica. Deverão ser suspensos análogos da vitamina D e suplementos de cálcio ou ferro. Pelo contrário, dieta com restrição de fósforo, dialisado com redução de cálcio, calcimiméticos (cinacalcet) e espoliadores do fosfato (sevelâmero) são opções. O tiossulfato de sódio demonstrou bons resultados na cicatrização.

CONCLUSÃO: A calcifilaxia deverá ser considerada pelo Cirurgião Vascular em doentes com DRCt e úlceras atipicamente dolorosas para melhor orientação do doente.

P08 Giant renal tumor with vena cava thrombus

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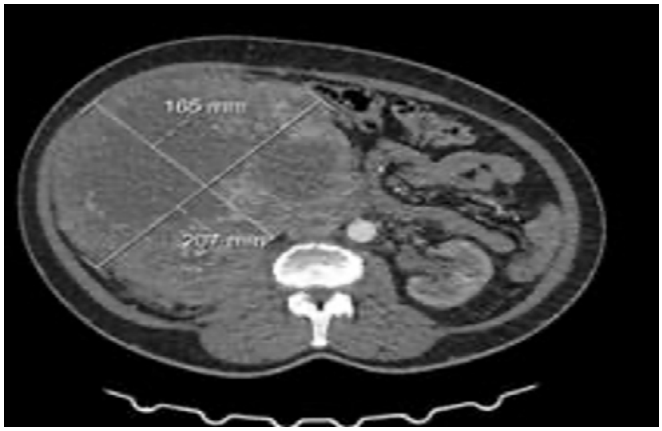
INTRODUCTION: Venous migration and tumour thrombus formation are unique aspects of renal cell carcinoma. These features are relatively infrequent and are associated with significant therapeutic and prognostic implications. We report a case of renal neoplasm with vena cava tumour thrombus, effectively treated with surgical resection and adjuvant chemotherapy.

CASE REPORT: We report a case of a 53-year-old woman, otherwise healthy, that developed gross macroscopic hematuria episodes and a non-pulsatile large abdominal mass. Computed tomographic assessment revealed a giant right renal tumour with thrombus invasion of the inferior vena cava (level 2) and pre-caval and latero-caval adenopathies. (Figure 1) After multidisciplinary discussion, she was proposed to radical nephrectomy, caval thrombectomy and lymph node excision with the collaboration between urologists and vascular surgeons. Billateral subcostal incision was performed. The right kidney was mobilized, the renal artery and vein ligated and nephrectomy performed. Enlarged lymph nodes were excised. IVC lumbar tributaries that tether into the posterior aspect of the infra-hepatic vena cava were carefully ligated to achieve circumferential caval control. Supra-hepatic vena cava exposure was deemed not necessary. After vena cava clamping, a longitudinal cavotomy was performed and the tumour thrombus excised. It was not densely adherent to the IVC wall, thereby easing its removal. The cavotomy was closed with a running polypropylene suture. (Figure 2) No significant hemodynamic shifts were noted during infrahepatic clamping. Post-operative course was uneventful and the patient discharged on the 8th post-operative day. Pathology revealed clear renal cell carcinoma and lymph node metastasis. She is now under adjuvant chemotherapy.

CONCLUSION: Surgical treatment of renal cell carcinoma can be challenging, particularly when concomitant vena cava thrombus is present. The combination of efforts between urology and vascular surgeons can improve patient safety and perioperative outcomes.



P09 A giant arteriovenous malformation of abdominal wall

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INTRODUCTION: Arteriovenous Malformations (AVMs) are high-flow anomalous connections between the arterial and venous systems composed of dysplastic vessels resulting from aberrant angiogenesis. They're congenital and when symptomatic they rarely manifest before adolescence. The cosmetic appearance, pain, bleeding, tissue ischemia or congestive heart failure are clinical presentations of AVMs which may require intervention. Depending on the location, size, stage and severity of the symptoms, treatment options varies from conservative management to surgical resection. There are only few case reports regarding AVM of abdominal wall. We report a case of a giant arteriovenous malformation of abdominal wall (tipe IIIb of Yakes Classification) treated with surgical resection after prior attempts of scleroembolization.

CLINICAL CASE: 54-year-old woman with known history of osteoarticular pathology and dyspepsia presented a mass on the left side of the abdominal wall measuring about 20x10cm with hard consistency, warm, slightly pulsating and tenderness to touch with several years of evolution. The mass showed infiltration of the internal and external oblique muscles sparing the transverse muscle. Clinically she presented easy fatigue with efforts. Due to the risk of abdominal wall herniation after excision of the AVM, scleroembolization was considered first-line treatment in this case and attempts were made with regression of the mass and symptoms improvement. Four years after the last intervention, the patient presented lesion growth, recurrence and worsening of symptoms with severe interference in the QoL. After imaging reassessment and multidisciplinary discussion, she was proposed for complete resection of the AVM. She was first submitted to scleroembolization with Onyx of identified arterial afferents and sclerosis of the lesion nidus with 2% polidocanol. One month after she underwent successfully total resection of the AVM with the collaboration of General Surgery.

CONCLUSION: No unified agreement exists on the best treatment of these complex high flow lesions and it is difficult to establish a comprehensive strategy given the pathology's clinical variability, complex stratification and the risk of relapse. A case-by-case approach is needed in managing these types of lesions.

P10 Targeted therapy with sirolimus in vascular malformations – a case report

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BACKGROUND: Vascular malformations are a heterogenous group of rare vascular development disorders with limited treatment options. Recent studies have shown the potential benefit of mTOR inhibitors – such as sirolimus – in their treatment, particularly in low flow malformations. However, reports on their efficacy in high-flow malformations are scarce and results controversial. We report the successful case of a patient with a combined malformation, with an arteriovenous (AV) component, who benefited from treatment with sirolimus.

CASE REPORT: A 3-year-old female patient was referred to our centre with a diffuse and progressive vascular malformation on her right leg, difficult to classify according to ISSVA, with disabling pain, limb deformity and walking impairment. Initial magnetic resonance imaging showed a diffuse malformation on the deep subcutaneous tissue without muscle or bone involvement, measuring 18cm on the largest axis with 2 feeding arteries. A progressive clinical worsening occurred and, after discussion with an international reference centre in vascular malformations (Royal Free Hospital), it was classified as a diffuse vascular malformation with involvement of contiguous structures without defined borders, with both a low and high flow component. The high flow component behaves like a type IV Yakes AVM. Nevertheless, long term therapy with sirolimus (0.8 mg/m2 twice daily) was instituted when the patient was 9 years old, resulting in complete remission of pain and recovery of walking ability and partial recovery of the valgus of the knee. No side effects were reported. With 28 months of follow-up, the 13-year-old remains pain-free and with improved quality of life, despite absence of imagological improvement.

DISCUSSION: Although the available evidence for mTOR inhibitors, particularly sirolimus, is mainly for low-flow malformations, it may be a safe and effective therapeutic option for highly selected high-flow malformations, when intervention is not a possibility (or deemed either incomplete or disabling) and incapacitating symptoms are present. Some studies have shown a reduction in size of the malformation with treatment; however, this was not the case in our patient, notwithstanding the clear improvement in quality of life for four years without any other intervention.

POSTERS EM EXIBIÇÃO

P11 Giant aneurysmatic degeneration of the brachial artery: a consequence of vascular access ligation

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INTRODUCTION: Arteriovenous fistulas (AVF) are currently considered the best vascular access option for patients with end-stage chronic kidney disease requiring hemodialysis. In rare cases of patients with a chronic AVF, thrombosis or ligation of the access can lead to the development of brachial artery aneurysm. Despite being uncommon, reports on this phenomenon have been rising in the last decades due to an increase in the number of patients undergoing dialysis worldwide. We present the case of a giant brachial aneurysm developing after ligation of an arteriovenous fistula.

CASE REPORT: 62 year-old, male presented at the emergency department with swelling of the medial aspect of the left arm associated with pain, inflammatory signs and finger paresthesia. The swelling started 2 months prior, but had worsened within the last week. He had a history of kidney transplant 20 years ago and a chronic functioning radiocephalic fistula that had not been used since then, which was ligated in the past year due to the development of venous aneurysms. On clinical examination he had a large pulsatile mass of the left arm, hand was warm but radial and ulnar pulses were absent. There was significant venous collateralization of the arm and chest and numbness of the left fingers, suggesting venous and neurologic compression. Computed tomography angiography revealed a contained rupture of a large left brachial artery aneurysm (10,8 x 8,7 x 18 cm). The patient was submitted to aneurysm sac emptying and collateral ligation followed by great saphenous vein interposition with clinical improvement.

CONSLUSION: The presence of a chronic AVF can lead to progressive changes in the arterial wall, leading to dilation and weakening. Sudden ligation or thrombosis of a functioning AVF causes an increase in blood pressure within the artery which may further contribute to its aneurysmatic degeneration. In addition, the use of immunosuppressants after kidney transplant has been described as a synergistic risk factor due to the association between steroid use and aneurysm formation. Despite being a rare complication, patients with a chronic AVF should be closely monitored after vascular access ligation.

P12 Lower limb claudication in a young patient – a curious case

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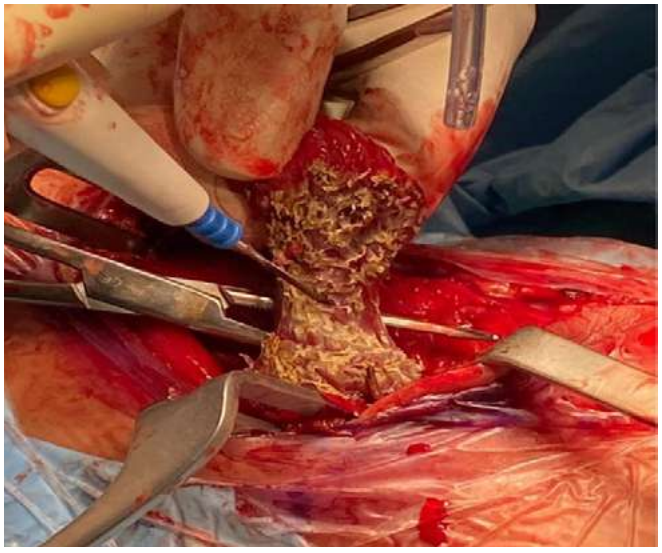
A 36-year-old healthy man presented in the outpatient clinic with right lower limb claudication for <100 meters impacting his QoL (Rutherford grade 3). On physical examination

distal pulses were not palpable however contralateral distal pulses were present. Due to the young age and absence of atherosclerosis risk factors, an angio MRI was performed and a type 3 popliteal entrapment syndrome was diagnosed with sub occlusive stenosis of popliteal artery. Concurrently an eco-Doppler was performed which revealed 90-99% stenosis (PSV of 400 cm/s) in the popliteal artery. After a shared decision, the patient underwent surgery, which included myotomy of the lateral accessory head of the medial gastrocnemius and an interposition graft of the popliteal artery from P1 to P3 with contralateral inverted GSV through a posterior popliteal approach. The post-operative was uneventful, and the patient recovered right lower limb distal pulses, which stills maintain after more than six months later. This case underscores the importance of a thorough diagnostic workup in patients without traditional risk factors for atherosclerosis that present with lower limb claudication.



P13 Um caso de sucesso no tratamento do Síndrome de Dunbar

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INTRODUÇÃO: O síndrome do ligamento arqueado mediano (SLAM) é causado pela compressão do tronco celíaco (TC) pelo ligamento arqueado mediano (LAM). Ocorre sobretudo em mulheres entre os 30-50 anos e manifesta-se pela tríade de dor epigástrica pós-prandial, perda de peso e sopro epigástrico. Outros sintomas poderão ser dor agravada pelo exercício e expiração profunda, náusea e vómitos. O diagnóstico depende da exclusão de outras causas de dor abdominal.

CASO CLÍNICO: Mulher de 37 anos, com tiroidite autoimune e epilepsia foi à consulta por dor abdominal recorrente pós-prandial com 6 meses de evolução, enfartamento e vómitos com refeições copiosas, perda ponderal de cerca de 7kg em 6 meses, tendo realizado um TC que revelou SLAM (fig.1). Em colaboração com a Cirurgia Geral optou-se por secção do LAM por via laparoscópica. Ao 3º dia pós-operatório desenvolveu fístula quilosa que resolveu com estratégia conservadora (suspensão de dieta oral, nutrição parentérica e octreótido). Follow-up a 1 ano com melhoria clinica da dor abdominal e da tolerância alimentar e imagiológica (fig.2).

DISCUSSÃO: Uma localização caudal do LAM ou uma origem cranial do TC poderão desencadear SLAM. A compressão aumenta na expiração e reduz na inspiração profunda devido aos movimentos do diafragma. Devido à proximidade ao gânglio celíaco os doentes podem manifestar dor neuropática. Relativamente ao diagnóstico o eco-Doppler serve de rastreio inicial identificando um aumento das velocidades de pico sistólico (>200cm/s) durante a expiração forçada e uma dilatação pós-estenótica. O angio-TAC em expiração revela uma estenose em gancho e permite determinar o ângulo de defleção do TC que, se superior a 45-50º, poderá ser sugestivo do SLAM diferenciando de uma estenose aterosclerótica. Angiografia é o gold-standard para revelar a compressão dinâmica.
O tratamento consiste na transecção do LAM, com ou sem resseção ou ablação do gânglio celíaco para alívio da dor neuropática. A abordagem laparoscópica é preferencial. A angioplastia com balão/stent ou revascularização convencional do TC poderão ser adjuvantes nos casos refratários.

CONCLUSÃO: O SLAM condiciona grande morbilidade, de modo que um diagnóstico e tratamento precoce permitem uma melhoria significativa da qualidade de vida dos doentes.

P14 Relato de caso clínico: LAAF – laser transdérmico após espuma de polidocanol em perfurante nutridora

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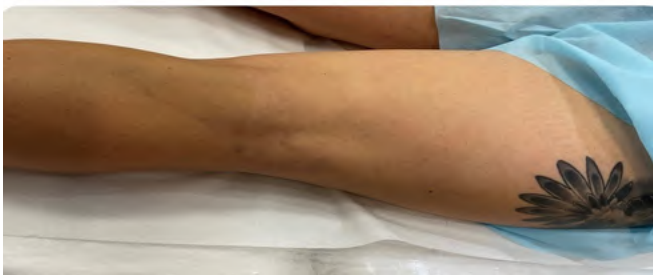
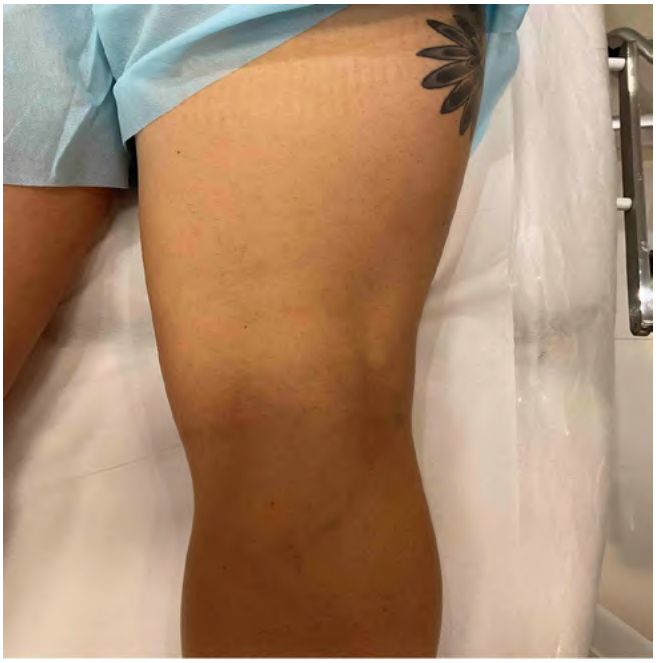
INTRODUÇÃO: O tratamento de varizes ganhou imensa versatilidade na última década. A associação de métodos e técnicas fez-nos transcender os limites antigamente impostos para a tradicional flebectomia. O planeamento terapêutico utilizando anamnese, realidade aumentada eeco-Doppler, bem como uma programação estruturada das etapas de tratamento e dos resultados expectáveis, são fundamentais na satisfação do paciente.A técnica LAAF (LAser After Foam) é uma técnica hídrida de popularidade crescente que, ao juntar as sinergias de escleroterapia e laser, permite reduzir a concentração de esclerosante e a energia do laser, trazendo bons resultados com menos complicações.

MATERIAIS E MÉTODOS: Paciente do sexo masculino com dor e perturbação estética associada a variz de 3.8mm, que se iniciava numa perfurante gemelar insuficiente e cruzava a fossa poplítea até à face lateral da coxa direita, onde originava múltiplas telangiectasias arroxeadas. Após o planeamento terapêutico optou-se por tratar a perfurante e o trajecto varicoso com espuma de polidocanol a 0,25%, 2 punções com 1.5mL, seguida de aplicação de laser transdérmico Sólon® Nd:Yag 1064 nm nos seguintes parâmetros: Spot 6, TRR 25, Fluência 50J. Foi realizado penso com compressão excêntrica com algodão e meia elástica de 35mmHg. Nas telangiectasias foi realizado incialmente laser transdérmico Sólon® Nd:Yag 1064 nm seguido de escleroterapia líquida com glicose a 75%.

RESULTADOS: A perfurante e a variz foram completamente tratadas. As telangiectasias obtiveram uma melhoria de 90%. Observou-se uma pequena hipercromia a curto prazo, com reversão completa após 4 meses.

CONCLUSÃO: A associação de técnicas com clareza no planeamento garante-nos segurança na indicação de métodos menos invasivos, realizados no consultório, com rápida recuperação, sem compromisso das atividades de vida diária, com conforto e excelentes resultados.





P15 Femoral vein duplication: a protector or dangerous anatomic variation?

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INTRODUCTION: Femoral vein duplication is an anatomical variation with high prevalence in general population: up to 25% of limbs. The fact that this is such a common variation emphasizes the need for a careful search during every duplex scan for suspected deep venous thrombosis .
Some authors consider this anatomical variation has a predisposing factor to deep venous thrombosis because of the increase in the vessel's total area with decrease of velocity and increasing of stasis of venous blood flow.
Also, if one limb of a duplication is not visualized, it would be possible to be made a false negative diagnosis of deep venous thrombosis, which reinforces the importance of reporting anatomical variations.

CLINICAL CASE: A 40-year-old healthy woman went to the emergency department with complains of sudden pain in the inner left thigh.
On physical examination no edema, tension or inflammatory signs. Pedious pulses were presente bilaterally.
Doppler ultrasound of the lower limbs showed duplication of the left femoral vein with thrombosis of lower limb of femoral vein.(Figure1)
The patient was discharged with rivaroxaban and elastic compression stocks.

CONCLUSION: In this case, as the clinical symptoms of deep vein thrombosis are masked, doppler ultrasound identification is crucial.
Also, this is an anatomical variation with less risk of pos thrombotic syndrome but a higher risk of pulmonary thromboembolism, if not well diagnosed and treated.

Figure 1: Doppler ultrasound showing duplication of the left femoral vein with thrombosis of one of the limbs

P16 Isolated "blind" popliteal segment bypass is still a valid option in otherwise no-option CLTI patients

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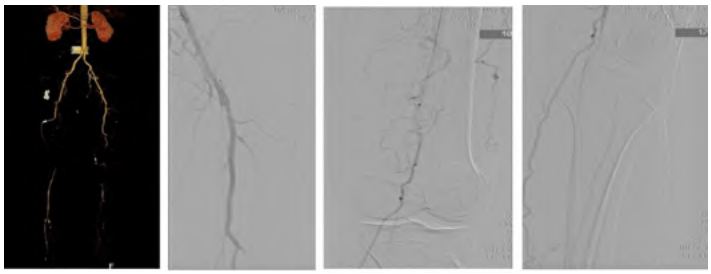
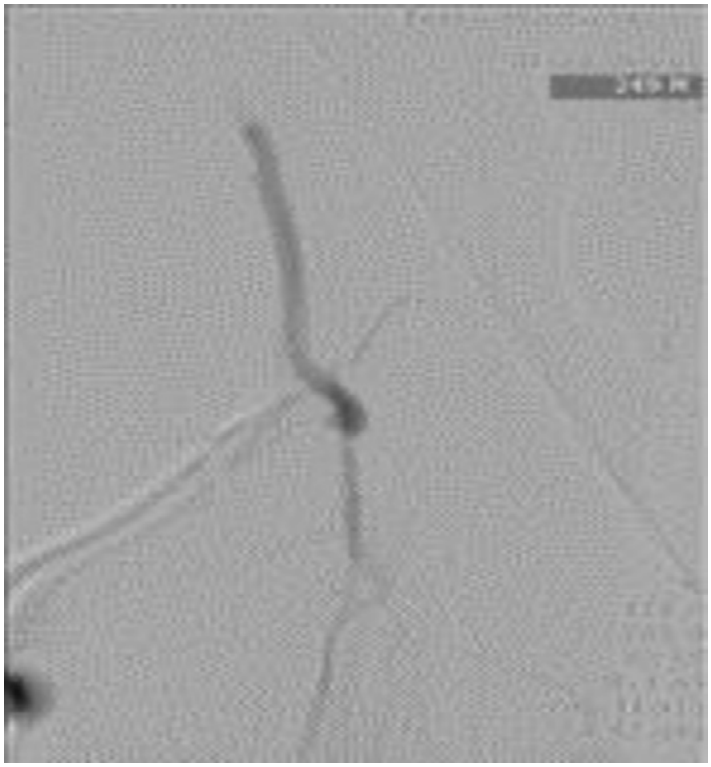
INTRODUCTION: "Blind" popliteal artery segment bypass has been proven as a valid limb-saving procedure for patients with CLTI. Veith et al. demonstrated that providing at least 7cm with valid collaterals could result in gratifying results in this subset. However, with the advancement of endovascular techniques as well as with the increasing experience with tibial or pedal bypass, as well as venous arterialization, this procedure has come into question. We report the case of successful left blind retrogeniculate popliteal bypass for a young patient with CLTI.

CASE REPORT: We report a case of a 47-year-old male patient, previous football player, with a known history of smoking and hypertension. He was previously treated with an infrageniculate femoro-popliteal bypass with reversed great saphenous vein (GSV) to a "blind" popliteal segment due to right-sided critical limb ischemia, achieving successful secondary healing of a transmetatarsal amputation. Six months later he developed critical limb-ischemia (toe necrosis) on the left side. Previous computed tomographic angiography revealed patent aorto-iliac axis and profunda femoris artery, as well as long SFA-popliteal and tibioperoneal occlusion, with just a bilateral popliteal "blind" segment with collaterals patent, as well as just below-knee collaterals (Figure 1). Attending to the anatomic limitations posed, a decision was pursued to perform digital subtraction angiography to map any outflow for revascularization. A good caliber profunda femoris supplying a "blind" retrogeniculate popliteal segment (5cm), from which big collaterals arose was found (Figure 1). Also, infrageniculate runoff was marked just by collaterals. A decision to perform a common femoral – retrogeniculate popliteal bypass was pursued. First, GSV harvesting was performed. Afterwards, femoral bifurcation was exposed and a standard common femoral anastomosis with reversed graft performed. Then, a retrogeniculate incision was done to allow tunnelling of the graft to the popliteal fossa. Subsequently, the patient was repositioned in ventral decubitus and the retrogeniculate popliteal segment and collaterals exposed. Finally, popliteal anastomosis was performed and confirmed patent without complications with DSA (Figures 2-3). The patient had no postoperative complications and achieved adequate healing of his toe amputation. Twelve months in his follow-up he maintains healing, absence of ischemic pain and patent bypass graft.





P18 Embolização supra-seletiva de angiomiolipoma renal

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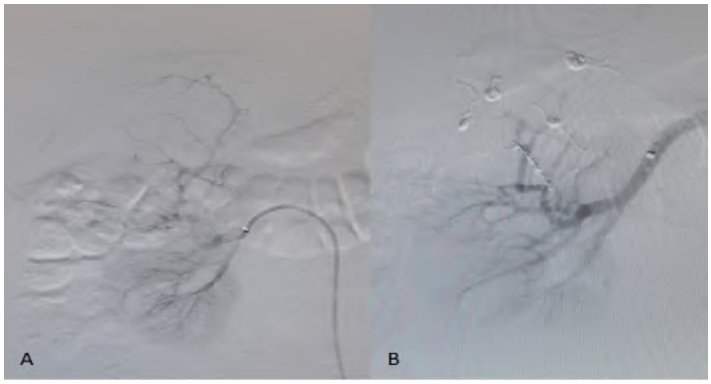
INTRODUÇÃO: O angiomiolipoma renal é um tumor benigno que surge em 80% dos casos de forma espontânea e nos restantes associado a doenças genéticas como a esclerose tuberosa. Afeta sobretudo mulheres com 40-60 anos e são geralmente assintomáticos. Poderão manifestar-se por dor, hematúria e hemorragia retroperitoneal em caso de rotura das arteríolas aneurismáticas que possuem.

CASO CLÍNICO: Mulher de 44 anos com hipotiroidismo primário e obesidade, seguida em consulta de Urologia desde há 8 anos por angiomiolipoma do polo superior do rim com 5cm de diâmetro, mantido sob vigilância por estabilidade da lesão. Última TC, 10 meses antes de solicitada colaboração por Cirurgia Vascular, revelava um aumento tumoral para 87x85x84mm (fig.1). Submetida a embolização tumoral com coils (Concerto® e Tornado®) com intuito de estabilizar a evolução e evitar uma resseção (fig.2). TC de reavaliação, 2 meses após o procedimento (12 meses após o TC prévio) com aumento tumoral para 100x88x85mm. De momento aguarda reavaliação por Urologia para estabelecer orientação.

DISCUSSÃO: Os angiomiolipomas são constituídos por vasos sanguíneos, células musculares lisas e adipócitos. O diagnóstico é realizado pelos exames imagiológicos. Na ecografia verificam-se lesões hiperecoicas. A TC identifica lesões de baixa densidade contudo para distinguir de linfomas e liposarcomas poderá ser necessário biópsia aspirativa de agulha fina. Na RM o tumor surge desprovido de sinal nas sequências supressoras de gordura.
O tratamento assenta em vigilância nos assintomáticos. Tumores com mais de 4cm possuem microaneurismas o que agrava o risco de rotura. A intervenção preferencial é a nefrectomia poupadora de nefrónios (convencional/laparoscópica). Tumores de pequenas dimensões poderão ser submetidos a ablação térmica. A embolização supra-seletiva é importante quer na fase aguda de rotura tumoral, quer na fase crónica para doentes não candidatos a cirurgia abdominal. Nestes casos apesar da redução do diâmetro tumoral cerca de 20% necessitam de re-embolização conforme estudos. Apresenta complicações como o síndrome pós-embolização e abcesso renal. O tratamento médico com Everolimus poderá ser opção contudo apresenta efeitos adversos significativos.

CONCLUSÃO: A embolização supra-seletiva é eficaz na rotura de angiomiolipomas, contudo na fase crónica apesar de poder reduzir o tumor, está associada a uma elevada taxa de re-embolizações que é necessário acautelar.



CASE REPORT: We report the case of 68-year-old male patient electively admitted to the Vascular Surgery ward for an asymptomatic AAA over surveillance limits dimensions and a HK. He has a previous history of arterial hypertension, dyslipidemia, coronary artery disease with acute myocardial infarction with coronary revascularization in 2011, diabetes mellitus type 2 and chronic obstructive pulmonary disease. The kidney vascularization was characterized by the presence of 3 arteries, two arising in a coronary plane at the same height, and a third "polar" artery arising from below. The dimension of the polar artery was 6mm in diameter, bigger than the other two. The patient was subjected to EVAR under general anesthesia and triple surgical access (bifemoral and left brachial). A custom-made Cook (Cook Medical, Bloomington, Indiana, USA) endoprosthesis was implanted below the "main" renal arteries with a branch for the polar artery that was stented with a BeGraft (Bentley InnoMed GmbH, Hechingen, Germany) 7x57mm stent. The post-operative period was uneventful and the patient was discharged on the third postoperative day. The 1-month follow-up angio-TC scan revealed a successful outcome, with total aneurysm exclusion, branched graft patency and no endoleak.

CONCLUSION: This clinical case highlights the importance of versatility assessment in the pre-operative endovascular procedures planning. In rare conditions as anatomical anomalies, like HK and aberrant renal arteries, it is particularly important the preservation of polar renal arteries, an underestimate process in many endovascular procedures. With new custom-made endovascular devices and a proper preoperatory planning, this could represent the best option and the new gold standard for these patients.

P19 B-EVAR procedure for an abdominal aortic aneurysm in a patient with horseshoe kidney: a case report

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INTRODUCTION: Horseshoe kidney (HK) is an anatomical variant characterized by abnormalities in the position, rotation and vascular supply of the kidney, with functioning renal masses on both sides of the vertebral column fused together in the isthmus. Endovascular aortic repair (EVAR) for aortic abdominal aneurysms (AAA) in the presence of HK may require a customized preoperatory planning, due to the altered pattern of kidney vascularization.

P21 Utilização de anticoagulantes orais na profilaxia do tromboembolismo venoso em cirurgia de varizes – revisão da literatura

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Centro Hospitalar e Universitário de Coimbra

INTRODUÇÃO: O tromboembolismo venoso (TEV) é uma complicação rara, mas grave, do tratamento cirúrgico de varizes. Existem recomendações relativas à profilaxia do TEV, sobretudo com recurso a baixa dose de HNF, HBPM e fondaparinux. Apesar de os anticoagulantes orais directos (DOAC) já terem demonstrado eficácia e segurança na profilaxia do TEV noutras áreas cirúrgicas, a sua utilização após tratamento cirúrgico de varizes ainda é escassa.

MÉTODOS E MATERIAIS: Pesquisa bibliográfica na base de dados *Pubmed* e revisão de *guidelines* e recomendações publicadas pelas sociedades científicas internacionais.

RESULTADOS: Até à data, apenas a Society for Vascular Surgery (SVS), a European Society of vascular surgery (ESVS) e a Royal Society of Medicine (RSM) apresentam recomendações de profilaxia do TEV relativas a tratamento cirúrgico de varizes. A SVS e a ESVS recomendam profilaxia com HBPM de acordo com o risco trombótico individual e a RSM recomenda a utilização de HBPM ou DOACs, nomeadamente o Rivaroxabano e Apixabano.
Um inquérito realizado aos cirurgiões vasculares na Suíça mostrou que administravam sempre profilaxia após termoablação endovenosa (EVTA), utilizando preferencialmente DOACs. Por outro lado, no Brasil, a prática recai sobre prescrever mais DOACs pós EVTA e HBPM após cirurgia convencional de varizes. Na Grécia, a utilização de HBPM mantém-se a mais prevalente.
Uma revisão sistemática mostrou eficácia dos DOACs na profilaxia do TEV, apresentando eficácia não inferior relativamente a HBPMs ou Fondaparinux.
Murzina et al comparou a utilização de Enoxaparina com Rivaroxabano, em 2021, não encontrando diferenças de eficácia ou segurança.

CONCLUSÃO: Apesar da literatura ser escassa relativamente à profilaxia do TEV com DOACs após cirurgia de varizes, estes parecem apresentar um bom perfil de segurança e eficácia. Ressalva-se assim a importância de estudos de maior dimensão amostral para aferir com mais rigor a utilidade dos DOACs na profilaxia do TEV após cirurgia de varizes, determinando a posologia e duração mais adequada.

P22 Vena cava syndrome as first manifestation of lung cancer and its endovascular approach: case report

Francisco José Andrade Basílio, Nuno Coelho, Ricardo Gouveia, João Peixoto, Luís Fernandes, Marta Machado, Patricia Carvalho, Alexandra Canedo

Centro Hospitalar Vila Nova de Gaia/ Espinho

INTRODUCTION: Superior Vena Cava Syndrome (SVCS) signs and symptoms normally develop over weeks to months and, in up to 60% of patients, it can be associated with the initial presentation of a undiagnosed tumor. Conservative treatment is associated with little, or no symptoms improvement and radiotherapy has too many side effects that hinder its use. Dedicated venous stents may be a good alternative considering its minimal invasiveness and effectiveness, in well selected cases. Nevertheless, there is insufficient data and guidelines regarding its use.

RESULTS: We present a case of a 61-year-old heavy smoker female admitted in the emergency department due to dyspnea, facial oedema associated with marked thoracic venous collateralization with two weeks of evolution. Imaging studies revealed a lung mass measuring 8 x 7.5 cm with mediastinal invasion causing SVC compression. Initially the patient was medically treated but her condition did not improve leading to a more invasive intervention. The patient was submitted to SVC stenting (dedicated self-expandable venous stent). Symptoms immediately improved and she was discharged 24 hours later on low molecular weight heparin and aspirin.

CONCLUSION: Alleviate symptoms related to SVC obstruction is one of the pillars of treatment of SVCS.
When conservative measures fail and invasive intervention is needed, endovascular treatment may be considered the standard of care, especially in patients with malignancy related symptomatic SVCS.

P23 Effectiveness of mesenchymal stem cell therapy in diabetic ulcer management: a systematic review

Miguel Castro e Silva, Luis Orelhas, Leonor Baldaia, Eduardo Silva, Celso Nunes, Vânia Oliveira, João Alegrio, Manuel Fonseca

Centro Hospitalar e Universitário de Coimbra

Diabetic foot ulcers are a common and debilitating complication of diabetes mellitus. Mesenchymal stem cells (MSCs) have emerged as a promising therapy for diabetic ulcers due to their potential to promote tissue repair and regeneration. This systematic review aimed to summarize the current evidence on the use of MSCs for diabetic ulcers. A systematic literature search was performed using PubMed, Embase, and Cochrane Library databases, and 22 studies met the inclusion criteria. Most of the studies were randomized controlled trials and the primary outcome measures varied across the studies. The studies showed that MSCs were effective in promoting wound healing and reducing ulcer size, with no serious adverse events reported. The overall safety and efficacy of MSCs for diabetic ulcers are encouraging and warrant further investigation in larger and well-designed clinical trials. The heterogeneity in study design and outcome measures highlights the need for further research to establish the optimal MSC source, dosage, and delivery method.

P24 Contemporary results of EVAR in the treatment of ruptured abdominal aortic aneurysms

Lara R. Dias, Leandro Nóbrega, Marina Dias-Neto, Armando Mansilha

Centro Hospitalar Universitário de São João

INTRODUCTION: Endovascular aortic aneurysm repair (EVAR) has emerged as a safe and effective treatment for ruptured AAA (rAAA), being now recommended as the first strategy for anatomically compatible aneurysms.

METHODS: A retrospective review of all patients submitted to EVAR for infra-renal AAA from January 2018 to December 2021 was performed. Patients with isolated iliac aneurysms or complex repair (F/BEVAR) were excluded. Patients submitted to EVAR due to rAAA were compared to elective cases undergoing EVAR. Primary endpoints were postoperative complications, aneurysm-related complications, and secondary interventions at 30 days. Secondary endpoints were 30-day mortality, mid-term patient survival and secondary interventions.

RESULTS: A total of 132 patients were submitted to EVAR for AAA, with 22 patients being submitted to EVAR for rAAA (rEVAR). There were no differences in gender, age, comorbidities and use of statin and antiplatelets between elective and rAAA EVAR patients. Mean diameter was 79±22 mm for rAAA and 62±15mm for elective AAA (p=0.003). Most cases of rEVAR used an aortic-biliac endograft configuration, with only one patient having an aortic-uniliac graft placed. Four patients (19%) had secondary interventions related to rAAA repair in the first 30 days (vs 9.1% in elective patients, p=0.239). rAAA patients had a significant higher incidence of 30-day complications (54% vs 7%, p<0.001), with the most common being kidney injury (29%). Aneurysm-related complications in the first 30-days were similar (14% for rAAA vs 11% for elective patients, p=0.716). Mean follow-up was 20.6±16.4 months for rAAA and 18.6±15.3 months for elective EVAR. Thirty-day mortality was 9.1% for rAAA and 4.5% for elective EVAR (p=0.583). Patient survival at 18-months was 70.5% for rAAA and 90.7% for elective EVAR. Secondary interventions during follow-up were similar between rAAA and elective AAA.

DISCUSSION: rAAA patients have higher thirty-day mortality when compared to elective AAA, however not reaching significance. rAAA patients have a higher rate of systemic complications in the early post-operative course, presumably due to initial instability. Mid-term survival was also reduced for rAAA patients. However, secondary interventions were similar between elective and rEVAR.

P25 Quisto da adventícia arterial: quem disse doença do adulto jovem?

Joana Rodrigues, Carolina Mendes, André Marinho, António Santos Simões

Centro Hospitalar Tondela Viseu

INTRODUÇÃO: Os quistos da adventícia arterial constituem uma doença rara com a qual um cirurgião vascular contacta pontualmente ao longo da sua carreira. Afetam sobretudo doentes do sexo masculino (1:15), entre a 4ª e 5ª décadas de vida e caracterizam-se pela presença de uma lesão quística na adventícia arterial com conteúdo mucinoso. Envolvem parcialmente ou a totalidade da circunferência vascular e podem causar graus variáveis de estenose luminal e isquémia. Localizam-se na proximidade de articulações e a artéria poplítea é o vaso mais atingido por esta condição clínica (até 90% dos casos). A sua etiologia é ainda hoje motivo de controvérsia, com os argumentos mais favoráveis associados à teoria "sinovial" que aponta como origem do quisto a invasão da adventícia por uma membrana sinovial adjacente.

MATERIAIS E MÉTODOS: Os autores apresentam o quadro clínico de 2 doentes com quisto da adventícia arterial, ambos na 8ª década de vida.

Caso 1: sexo feminino, 77 anos, antecedentes de HTA e gonartrose esquerda, com queixas de claudicação gemelar direita para <100m com vários meses de evolução. Realiza ecodoppler arterial que revela um quisto excêntrico no 2º segmento da artéria poplítea e a angiografia em flexão confirma a estenose focal significativa.

Caso 2: sexo masculino, 79 anos, antecedentes de HTA, bronquite crónica e prótese total do joelho esquerdo, com queixas de claudicação gemelar direita para <200m, com 1 ano de evolução. A ecografia revela uma estenose crítica femoral comum direita confirmada por angiografia. O diagnóstico de quisto foi realizado intra-operatoriamente.

RESULTADOS: A doente foi submetida a resseção segmentar da artéria poplítea lesada e interposição de enxerto venoso e o doente a resseção da artéria femoral comum e enxerto de interposição protético ilio (ilíaca externa) - femoral com reconstrução da bifurcação femoral. Ambos se encontram livres de doença, com enxertos permeáveis e fluxo arterial distal trifásico aos 2 e 4 anos de follow-up respetivamente.

CONSLUSÕES: Estes casos são duplamente raros, quer pela idade de diagnóstico de ambos os doentes, quer por se tratarem, num caso de um doente do sexo feminino e no outro de uma localização apenas referida na literatura mundial em poucas dezenas de casos isolados (<50). A divulgação sistemática das patologias raras é fundamental para evitar que sejam descuradas até quando improváveis e desenhar a sua melhor abordagem terapêutica a curto e longo prazo.

P26 Wound complication in thigh sarcoma leading to life-threatening superficial femoral artery rupture – a case report

Lara R. Dias, Miguel Andrade Almeida, Leandro Nóbrega, Tiago Moura, Diogo Domingues-Monteiro, Tiago Costa-Pereira, Filipa Jácome, António Pereira-Neves, Pedro Paz Dias, Armando Mansilha

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INTRODUCTION: Soft tissue sarcomas (STS) are rare tumors of mesenchymal origin, most commonly arising in the extremities. Primary treatment is complete tumor resection, if feasible. However, wound complications are common and occur in up to 40% of patients. We report the case of a life-threatening bleeding from superficial femoral artery due to wound dehiscence after thigh soft tissue sarcoma resection.

CASE REPORT: We report the case of a 77-year-old patient which had been diagnosed and treated for a thigh soft tissue sarcoma in the adductor compartment of the left lower limb 3 months prior, with surgical resection of adductor and vastus medialis muscles, as well as femoral vein resection. Post-operative course was complicated by upper tight wound dehiscence, which was being managed conservatively with negative pressure therapy in outpatient setting. The patient presented to the emergency room after bleeding from the wound and a syncopal episode at home. In the emergency department he was stable, and no active bleeding was noticed. While on observation on the emergency department, massive pulsatile bleeding from the thigh wound was observed and managed with prompt compression and stabilization. The patient was then transported to the operating room for hemorrhage control. Intraoperatively, the superficial femoral artery was found at the base of the wound dehiscence with two areas of erosion. Due to the absence of local conditions for reconstruction and extensive soft tissue fibrosis in the inguinal area, the superficial femoral artery was ligated with prolene sutures with hemostatic control. Post-operative course was uneventful, with no signs of leg ischemia, and the patient was discharged on the fourth post-operative day.

DISCUSSION: Wound complications are common after soft tissue sarcomas, and adequate follow-up is necessary. Femoral artery rupture is a rare life-threatening complication that must be promptly identified and treated. However, revascularization is difficult and high risk in such patients with extensive soft tissue resection, increasing the risk of both limb loss and wound complications. In this case, femoral artery ligation was performed with no acute lower limb ischemia. However, adequate follow-up of these patients is warranted.

P28 A rare case of upper limb phlegmasia cerulea dolens

Leandro Nóbrega, Lara Dias, António Pereira-Neves, Filipa Jácome, Diogo Monteiro, Tiago Moura, Tiago Pereira, José Almeida Lopes, Pedro Paz Dias, Sofia Silva, Armando Mansilha

CHUSJ

INTRODUCTION: Phlegmasia cerulea dolens is a rare clinical entity that manifest as a swollen, blue, painful limb. It most often occurs in the lower limb and is associated with iliofemoral deep vein thrombosis. Its occurrence in the upper limb is even rarer.

METHODS: The authors present a rare case of upper limb phlegmasia cerulea dolens in a patient with homozygous Factor V Leiden.

RESULTS: A 58-year-old woman with known history of homozygous Factor V Leiden and under acenocoumarol came to the emergency department after severe trauma. The CT angiography (angio-CT) revealed a spleen rupture and a left retroperitoneal hematoma. Given these findings, she underwent emergent surgery. The patient was admitted to the ICU afterwards. On the first night on the ICU, the patient was evaluated for suspected acute limb ischemia of the upper left limb. She presented oedema of whole limb with hand cyanosis. The patient also had cold hand and forearm, with palpable tension on the hand and blisters on second and third fingers. Pulses were not palpable. On doppler ultrasonography she had no signs of arterial occlusion, with multiphasic doppler on the radial and cubital arteries but revealed extensive deep vein thrombosis. After reviewing the angio-CT images, a deep vein thrombosis of the subclavian vein was noted. Given these findings, a phlegmasia cerulea dolens diagnosis was assumed. As the patient had contraindication for fibrinolysis and had indication to withhold therapeutic anticoagulation, an initial conservative approach with low dose heparin, postural drainage, thermal protection and wound care was deemed the best option. On the following days, there was overall improvement of cyanosis, only remaining irreversible on the distal phalanges of the third and fourth fingers. There were no complications regarding the blisters and the edema slowly improved. Six days after the diagnosis therapeutic anticoagulation was started. After ten days, radial and cubital pulses were palpable. After one month, she underwent amputation of the distal phalanges of the third and fourth fingers. She was discharged after a total of two months at the hospital. She underwent rehabilitation with a slow but full recovery of autonomy.

CONCLUSION: The presented case is an example of a rare event in a complex patient treated successfully with a conservative approach.

P29 Superior vena cava obstruction treated by thrombolysis

J Ferreira, J Campos, I Pinto, J Pinto, L Machado

CHTMAD

INTRODUCTION: Superior vena cava syndrome is a clinical condition arises from the obstruction of blood flow though the superior vena cava, resulting in various signs and symptoms. This obstruction can cause edema in the upper body, including the head, neck, and upper extremities. Clinical signs and symptoms can include plethora, cyanosis, dyspnea, stridor, cough and hoarseness.

CASE REPORT: In this report, we present a case of a 63-year-old woman who experienced swelling of the face, upper limbs, dyspnea and dysphagia for three weeks. Her past medical history was marked by left mastectomy, radiotherapy and chemotherapy for breast carcinoma. She had recently undergone central venous catheter insertion for her chemotherapy course. A CT scan revealed absent filling of the superior vena cava adjacent to the central venous catheter. The patient was successfully treated with catheter-directed thrombolysis, whereby an infusion catheter was placed adjacent to the thrombosis through the left cephalic approach, and alteplase infusion was performed for 36 hours. The patient's clinical condition improved notably and she was discharge on oral anticoagulation. After 6 months of follow-up, the patient reported no complaints.

CONCLUSION: In severe acute superior vena cava syndrome cases, catheter directed thrombolysis can be a potential therapeutic method.

P30 Thoracic aortic aneurysm presenting 28 years following trauma

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INTRODUCTION: Blunt Thoracic Aortic Injury (BTAI) remains the second most frequent cause of mortality after blunt force trauma. The formation of a chronic thoracic aortic aneurysm is an uncommon consequence of blunt, nonpenetrating injury to the thoracic aorta. Mortality from blunt aortic injury is high and only 10–20% of patients survive to hospital. Of these, aortic injury, most frequently caused by rapid deceleration trauma, goes unrecognised in 1-2% and a chronic false aneurysm may subsequently form. Diagnosis of these aneurysms may only occur years later, either due to incidental findings, late rupture, or the development of nonspecific symptoms.

OBJECTIVES: To describe a clinical case of a chronic thoracic aortic aneurysm presenting 28 years following trauma

METHODS: Based in clinic report.

CASE REPORT: Female patient, 46 years old, with a background of a car accident 28 years ago, which resulted in limited mobility in the left knee, without the need for surgery at the time, according to the patient. With no other relevant antecedents. In a routine medical evaluation, a chest X-ray was requested by the attending physician, who described alterations suggestive of dilatation of the descending thoracic aorta, which led to the request for a thoracic CT angiogram, which revealed a saccular-looking aneurysm of the descending thoracic aorta with about of 4.2 cm, with a permeable lumen, without aspects suggestive of rupture. In this context, the patient is sent for observation in an outpatient clinic by Vascular Surgery. The patient denies any symptoms, objective examination without relevant changes. Given the saccular aspect of the aneurysm, proposal for surgical correction, being submitted to TEVAR with GoreTag thoracic stent graft tapered 26x21x110 mm endoprosthesis, uneventful, being discharged 2 days after surgery. A control angio-CT was performed 30 days after the operation, which revealed total exclusion of the thoracic aneurysm, with no endoleak.

CONCLUSION: In conclusion, this case illustrates an uncommon but important consequence of blunt, nonpenetrating injury to the thoracic aorta. It highlights an important clinical lesson for clinicians at all levels; a background of significant trauma is an important part of a patient's past medical history and should not be overlooked.

P31 Vascular trauma in a young children

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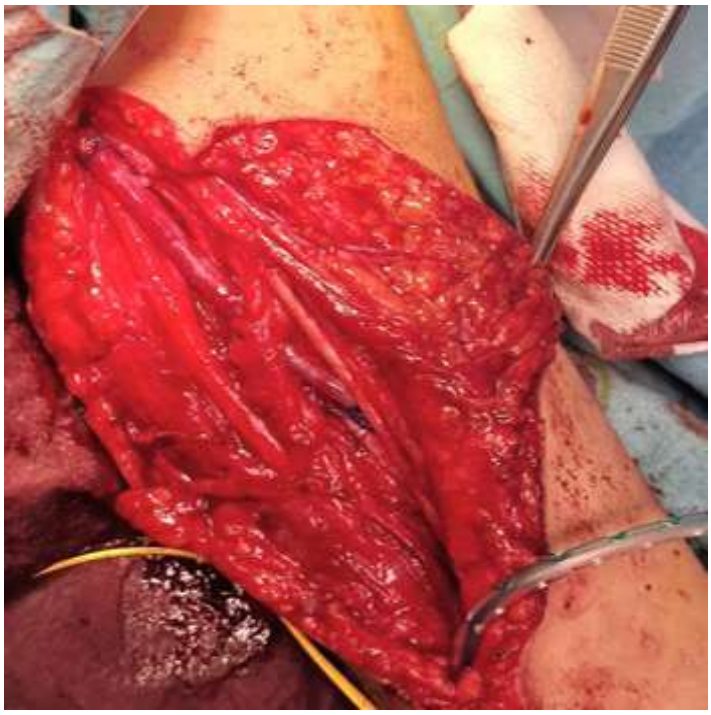
Centro Hospitalar Universitário de São João

This clinical case describes the successful management of an 11-year-old boy that suffered a laceration of the brachial artery. The patient fell into a grid resulting in a Vshaped 5cm wound and was rushed into the emergency department of a regional hospital. During physical examination the patient presented pallor of the left arm and hand and no radial or cubital pulse were palpable. The patient didn´t had sensory or motor deficits. Given the findings, an Angio CT was performed, where there was absence of contrast

perfusion in the medium portion of the brachial artery. The patient was transferred to a tertiary hospital with vascular unit where he underwent surgical exploration, during which the brachial artery was identified and found to be lacerated. An interposition graft using the ipsilateral basilic vein was performed with termino terminal anastomosis with separated suture points. In the postoperative period the patient recovered radial and cubital palpable pulses without any other sign of ischemia or oedema. The patient was discharged under anticoagulation therapy. This case highlights the importance of prompt and accurate diagnosis and surgical intervention and its particularities in managing vascular injuries in children.



P32 Mudança de paradigma das comunidades científicas: o virtual é real

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Vivemos num mundo de profunda transformação digital, cuja expansão foi ainda mais logarítmica com a Pandemia por COVID-19. As redes sociais, sites, plataformas e aplicações tornaram-se indispensáveis na vida diária dos cidadãos e os utilizadores de tecnologias digitais representam hoje mais de 53% da população mundial. Os médicos, naturalmente, não ficaram alienados desta realidade e abraçaram uma panóplia de soluções tecnológicas: teleconsultas, webinares, vídeo-conferências, cursos online, podcasts e plataformas de e-learning. Na Cirurgia Vascular, algumas Sociedades Científicas reconheceram a importância da criação de núcleos relacionados com inovação tecnológica. A SVS tem as comissões "SVS Health Information Technology Committee" e "Social Media Subcommittee" e a ESVS o núcleo "E-Committee". Especificamente na Cirurgia Vascular, as plataformas online podem ajudar a identificar alterações na prática clínica de forma mais rápida e eficiente, colmatando o atraso inerente à publicação científica. As estratégias digitais representam uma oportunidade de partilhar casos, conhecer outras pessoas de qualquer parte do mundo, disseminar resultados de pesquisas e participar em debates virtuais com experts internacionais. Um estudo recente mostrou que trocar ideias com outros profissionais, fomentando discussões clínicas, é o motivo mais frequente de uso das redes sociais, entre médicos. Estas alternativas anulam barreiras geográficas e linguísticas. O networking digital permite atualização de informação, interação, crescimento e progresso em tempo real.

Os autores pretendem demonstrar os conceitos expostos, relatando a sua experiência de enriquecimento profissional e pessoal através do uso de uma aplicação de E-Learnig Vascular. Esta aplicação criou uma comunidade científica cibernética organizada em redor dos mesmos temas, valores e propósitos, que fomenta a evolução global da Especialidade como um todo.

P33 When the answer is upside down: a case of urgent TEVAR in a challenging anatomy

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INTRODUCTION: Despite its low incidence, mycotic thoracic aortic aneurysms carry a dismal prognosis, with mortality rates from 30 to 50%. While open aortic surgery with adequate debridement remains the gold standard, TEVAR is a promising approach with short term mortality benefits. Concomitant peripheral artery disease is an additional challenge in these complex patients.

CASE REPORT: We report the case of a 77-year-old male, with previous history of COPD and smoking habits. He had previous abdominal surgery for a perforated peptic ulcer. The patient presented with fever and severe cough over the previous week and was admitted to the Pneumology ward for pneumonia. Blood cultures were positive for E.coli and he was treated with cefotaxime, according to susceptibility testing. During his stay, he developed symptoms of repetitive cough and hemoptysis. Due to de novo anemia, a CT angiography was performed showing

a 60mm saccular pseudoaneurysm in the descending thoracic aorta. Moreover, there was evidence of an infrarenal abdominal aortic aneurysm of 34mm and severe aortoiliac occlusive disease (bilateral iliac occlusion). The patient was immediately transferred to a tertiary Vascular Surgery center. After multidisciplinary discussion, the pseudoaneurysm was excluded through TEVAR. The graft was introduced through a surgical right axillary access, while the left axillary artery was used for angiographies. Technical success was achieved with no immediate evidence of endoleak. Serial CT angiographies showed a persistent type 2 endoleak, although with adequate proximal and distal sealing. At 1 month, the aneurysm was excluded with no evidence of endoleak or bleeding. The patient eventually deceased in the intermediate care unit due to acute respiratory failure and mass compression of the digestive tract.

DISCUSSION: TEVAR appears to be a valid solution for urgent control of descending thoracic mycotic aneurysms. In patients with difficult vascular access, femoro-iliac conduits/endoconduits may be envisioned. In this case, a right axillary arterial approach was preferred due to severe aortoiliac occlusive and aneurysmal disease, as well as a hostile abdomen. Despite short-term success, this condition still carries a gruesome prognosis with high mortality rates, especially in unfit patients.

P34 Shock it to expand it – intravascular lithotripsy for treatment of stent underexpansion

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CHVNG/E

INTRODUCTION: Intravascular lithotripsy (IVL) is an emerging approach for the modification of calcified plaque with the advantage of not damaging the arterial inner wall, avoiding the risk of distal embolization and mandatory use of high-pressure balloon. Ideally, IVL should be performed intraluminal and before stent placement. The DISRUPT PAD II and III studies showed promising results of 100% of primary patency in 30 days, 80% in 60 days, and 70% in 12 months and absence of complications. Herein, we present a case of the use of Shockwave™ IVL for treatment of stent underexpansion on a heavily calcified superficial femoral artery.

CASE PRESENTATION: A 65-year-old male with history of smoking, diabetes, hypertension, and coronary artery disease presented to our hospital with a Rutherford class 6 lesion. Due to several comorbidities an endovascular approach was preferred. He was classified as a Global Limb Anatomic Staging System grade III (Femoropopliteal (FP) grade 4, infrapopliteal grade 4). A complex recanalization of the FP sector, tibioperoneal trunk and posterior tibial artery using the "SAFARI" technique was performed, and two bare metal self-expandable stent (BM-SES) Boston Scientific Innova™ 6.0x120mm were placed on the superficial femoral artery (SFA) and popliteal artery (PA). Due to the high grade of calcification, severe underexpansion of the BM-SES placed on the SFA was persistent after post dilation up to 30 atm. Due to immediate unavailability of alternative adjuncts, the patient was anticoagulated and brought to the angiosuite four days later. A 110-cm long M5 Shockwave™ IVL 6.0 mm × 60 mm balloon (1:1 ratio) was placed at the level of the stent collapse, and 5 complete cycles of 30 pulses at 4 atm were applied and subsequently post-dilated to 6 atm. Two 30-pulse cycles following the same protocol were performed at a residual stenosis on the PA and the remaining 3 cycles available on the catheter were performed on the different places of the stents where full expansion was not achieved. Final angiography showed great improvement on stent expansion with absence of complications.

CONCLUSION: IVL has its applicability on the treatment of severely calcified lesions for luminal gain but also as a vessel preparation method for optimal stent placement. However, the unpredictability of complex cases demands boundaries to be pushed. This case describes the feasibility and safety of IVL even in adverse, non-ideal conditions for this technology.

P35 Um caso raro de aneurisma bilateral da hipogástrica

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INTRODUÇÃO: Os aneurismas isolados da artéria ilíaca interna (AII) são uma entidade clínica rara, com uma incidência de 2%. A principal etiologia é a aterosclerose e costuma de afetar homens entre os 65–70 anos. A grande maioria são assintomáticos, o diagnóstico frequentemente é feito em caso de rutura, com uma elevada taxa de mortalidade associada. Outros sintomas estão relacionados com a compressão de estruturas adjacentes, como dor abdominal, hidroureteronefrose, dor lombar, obstipação ou TVP.

CASO CLÍNICO: Homem de 68 anos, fumador, sem outros antecedentes, levado ao serviço de urgência em Agosto de 2021 por quadro de dor torácica e síncope. À admissão, apresenta-se hipotenso, taquicárdico e em acidose metabólica. A angio TC mostrou rotura de aneurisma da AII direita, de 70x75x70mm associado a extenso hemoperitoneu e aneurisma da AII esquerda de 36x44mm,

sem rotura. No Bloco Operatório de Urgência foi submetido a embolização da AII direita com coils e posterior colocação de 3 stents cobertos Gore VBX, um na artéria ilíaca comum (AIC) sobre a origem da AII (8x79mm) e 2 de extensão na ilíaca externa (AIE) direita (8x39mm).
No pós-operatório, por queda persistente de hemoglobina, foi indentificado leak por ausência de overlap dos stents da AIC e AIE direitas, pelo que foi submetido a colocação de bridge-stent Gore VBX 8x79L e sobredilatação da zona de selagem proximal com balão Zelos 2x18mm, com bom resultado angiográfico no final do procedimento.
Pós-operatório complicado com descompensação de DPOC e síndrome de privação alcoólica com delirium tremens. Teve alta ao 22º dia de internamento.
Em Maio de 2022, foi internado electivamente para tratamento endovascular do aneurisma da AII esquerda, com 34x32x50mm de dimensões, sob anestesia local.
Neste caso, foi possível preservar a permeabilidade da AII esquerda com a colocação de 2 stents cobertos Gore VBX, um na AII (11x59mm) e outro na artéria glútea esquerda (7x59mm), tendo tido sucesso na exclusão do aneurisma.
Teve alta no dia seguinte.

CONCLUSÃO: A relevância deste caso baseia-se no facto de perante a mesma entidade optarmos por duas abordagens distintas dependo da situação clínica do doente. Em ambas, o tratamento endovascular destacou-se pela sua eficácia e baixa morbilidade associada ao procedimento.

P37 Traumatic rupture of a common femoral artery aneurysm - case report

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Centro Hospitalar Universitário de Santo António

BACKGROUND: True common femoral artery (CFA) aneurysms are rare (5/10000) and most of these cases have synchronous arterial aneurysms in other locations. Complications, such as rupture, are even rarer with very few reports published. CFA aneurysm (CFAA) rupture is a life-threatening situation requiring prompt surgical treatment.

REPORT: A 77-year-old male with a past medical history of hypertension, active smoking (61 pack years), and a sigmoid colon adenocarcinoma under treatment, presented in our emergency room with a pulsatile right inguinal mass following a fall with trauma of the right thigh. At admission, the patient was hemodynamically stable and had distal pulses bilaterally. Blood workup exposed a minor anemia with a hemoglobin of 7,7 g/dl and was otherwise unremarkable. A contrasted CT scan revealed an infra-renal abdominal aorta aneurysm, a left common iliac artery aneurysm and a large ruptured type I CFAA.
The patient was promptly taken to the operating room. An inguinal longitudinal incision was made over the pulsatile mass and adequate dissection and isolation of the external iliac artery, superficial femoral artery (SFA) and deep femoral artery (DFA) was performed. After opening the false-aneurysm sac, we confirmed that the CFAA anterior wall was completely ruptured up to the level of the femoral bifurcation. Moreover, both the SFA and DFA were intact and were non-aneurysmatic. We proceeded to perform aneurysmectomy and reconstruction of the common femoral artery with an inlay 10 mm straight ringed ePTFE graft. Samples were sent for microbiological culture. After the procedure popliteal and distal pulses were easily palpable.
The postoperative period was uneventful, microbiological culture of the aneurysm sac was sterile and the patient was discharged one week after the procedure.

CONCLUSION: In spite of being a rare condition, CFAA can cause serious complications in case of rupture, such as acute ischemia of the limb, loss of limb and death. Early detection by ultrasound can help prevent these life-threatening situations, with this being especially important in patients with a history of other arterial aneurysms. Open surgical repair of CFAA and its complications is the preferred treatment, however, endovascular repair can be an option in selected cases.

P38 An intriguing case of chronic aortic dissection

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INTRODUCTION: Aortic dissection is a risk factor for development of thoracoabdominal aortic aneurysms with up to 40% of patients with chronic dissection eventually requiring surgical repair, which is technically challenging. It is presented a clinical case with a phased treatment of a thoracoabdominal aneurysm due to aortic dissection.

RESULTS: The patient was a 56-years old woman, referred to a vascular appointment with right lower limb claudication for short distances. She had a past medical history of arterial hypertension, dyslipidaemia and a type A aortic dissection eight years ago due to which she had undergone surgical repair by the cardiac surgery team from another hospital. She had never been seen by a vascular surgeon.
The Angio-CT scan showed aneurysmatic dilatation of the thoracic, visceral and abdominal aorta, and also an aneurysmatic dilatation of the innominate artery and the right common carotid artery and subclavian artery (which is distally occluded).
Due to the great complexity of the case, it was planned a

surgical approach with three sequential procedures. The first surgery consisted in a left carotid-subclavian bypass and implantation of a Conformable GORE TAG thoracic endoprosthesis with good deployment in the aortic arch. Six months later, the second surgery consisted in implantation of a Zenith Alpha Thoracic Endovascular Graft Proximal component combined with a custom-made Zenith® CE Fenestrated Stent Graft with three fenestrations for the celiac trunk, superior mesenteric artery and right renal artery and finally a standard EVAR with a Zenith Alpha Abdominal Endovascular Graft.
Nowadays, the patient remains asymptomatic and the angio-CT scan showed a type II endoleak, but without enlargment of the aneurysmatic sac, and it was also observed a right vertebral artery with good perfusion emerging distally from the innominate aneurysm. So the third intervention with the final goal of excluding the aneurysm of the innominate artery has yet to be done. The patient is waiting for a new follow-up CT scan to observe the arterial remodelling of this territory to further plan a less invasive procedure and also to minimize the risk of distal embolization of the right vertebral artery.

CONCLUSION: In aortic dissection with chronic aneurysmatic degeneration in the entire aorta, careful evaluation of patient anatomy and the aortic remodelling should be done in planning for these procedures and to overcome challenging cases limitations.

P39 Venous kissing stenting in a case of superior vena cava syndrome

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INTRODUCTION: Superior vena cava (SVC) syndrome is a serious condition resulting in facial edema and dyspnea. In over 90% of cases, an intrathoracic malignancy is responsible for significant compression of venous outflow. While conservative measures and aimed chemoradiation are the main treatment, endovenous recanalization of the SVC remains an important tool.

CASE REPORT: We report the case of 62-year-old female patient electively admitted to the Vascular Surgery wardfor symptomatic SVC syndrome. She has a history of hormone-sensitive, ductal invasive breast cancer subjected to neoadjuvant chemotherapy followed by right mastectomy and adjuvant chemoradiation. In August 2022, the patient was admitted in the emergency room with de novo dyspnea at rest and face swelling. A CT angiography was performed, showing an anterior mediastinal conglomerate with evidence of SVCcompression and right internal jugular and brachiocephalic veins thrombosis. She was put on anticoagulation and admitted in the Oncology ward for lesion staging. Further PET scans identified hypermetabolic foci in this lesion, along with supradiaphragmatic lymph nodes, bone and subcutaneous tissue. Lesion biopsies were positive for breast cancer metastases. After multidisciplinary discussion, chemoradiation was performed. Due to persistent dyspnea, she was evaluated by a Vascular Surgery team. Elective SVC recanalization was performedin December 2022. Through bilateral femoral vein access and a through and through approach for the rightbrachiocephalic venous axis, both venous brachiocephalic trunks were recanalized with 0.035” guidewires and stented in a kissing stent configuration. The postoperative period in the ICU was uneventful, with symptom control up to one month after surgery.

CONCLUSION: SVC syndrome is a debilitating condition caused by intrathoracic malignancy in over 90% of cases. In patients with dismal prognosis due to malignancy, palliation and symptom relief are top priorities. In tolerated cases, the patient may benefit from chemoradiation or corticotherapy for lesion debulking. Recently, endovascular recanalization and stent angioplasty of the SVC appear to be an alternative for symptom palliation. Although there are few case reportson complex recanalizations such as this, recent data shows primary patency rates up to 80% and secondary patency rates up to 100%.

P40 Chronic mesenteric ischemia provoked by a coral reef aorta – the open surgery still as a role

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Centro Hospitalar de Trás-os-Montes e Alto Douro

INTRODUCTION: Atherosclerotic lesions in the abdominal aorta usually occur below the renal arteries or at the level of the aortic bifurcation. Coral reef aorta is an uncommon syndrome caused by a distribution of rock-hard calcifications in the visceral part of the aorta. These heavily calcified plaques can be associated with visceral ischemia, renovascular hypertension, and malperfusion of the lower limbs.

CASE REPORT: We present a case of a sixty-year-old male patient, with a medical history including hypertension and tobacco use (100 pack-years). He was hospitalized in the medicine department to study a 40Kg weight loss in four months, associated with postprandial epigastric pain and constipation alternating with diarrhea. An extensive investigation was performed, including complete laboratory tests, gastrointestinal endoscopies, computed tomography (CT) scan, positron emission tomography scan and an excisional biopsy of a cervical lymph node. Our observation

was requested one month after having performed the CT scan. The later revealed a coral reef at the visceral part of the aorta, occluding the ostium of the celiac trunk and superior mesenteric artery (SMA). A prominent inferior mesenteric artery was observed with a stenosis at its origin. The two internal iliac arteries were patent. The diagnosis of chronic mesenteric ischemia was confirmed.
An endovascular revascularization of the SMA was initially attempted, but the occlusion was impossible to be crossed. Based on the age and an adequate cardiopulmonary reserve of the patient, an open anterograde revascularization of the SMA was proposed to treat the patient.
Therefore, the patient was submitted to a bypass from the supraceliac aorta to SMA with an 8mm PTFE graft. The postoperative course was uneventful, and the patient was discharged home ten days after surgery, tolerating food with complete relief of symptoms.
A follow-up CT angioscan was performed tree months after surgery demonstrating patency and adequate position of the bypass. The patient recovered 20Kg in three months.

CONCLUSION: The diagnosis of chronic mesenteric ischemia requires a high degree of clinical suspicion to avoid submitting the patients to extensive non-invasive and invasive diagnostic tools.
The open surgery remains a durable solution for young and fit patients with chronic mesenteric ischemia provoked by a coral reef aorta.

P42 Carotid web: treatment of a rare symptomatic carotid disease – a case report

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INTRODUCTION: Carotid web is a non-atheromatous intraluminal projection of hyperplasic intima that typically extends from the posterior wall of the proximal internal carotid artery, which can be a nidus for thrombus formation. Its cause is not well defined, and it is proposed as a stroke mechanism, particularly in younger patients without vascular risk factors. The associated stroke risk and management of these vascular findings is still unclear.

CASE REPORT: We present a case of a 40-year-old woman with an history of multiple transient ischemic attacks (TIA) of undetermined cause, during a 3-month period, followed by an embolic stroke of the left medium cerebral artery treated with percutaneous thrombectomy with complete deficit reversion. The TIA's and the stroke were all in the territory of the left internal carotid artery. Carotid doppler ultrasound after the stroke revealed a non-atheromatous intraluminal projection in the proximal internal carotid artery without morphologic significance, compatible with a carotid web. Further imaging studies were caried out to better describe the ultrasound findings (MRI and CT angiography). Other stroke causes were excluded. The patient was submitted, 10 days after the stroke, to excision of the internal carotid segment with the intraluminal protrusion suspected of being a carotid web and internal carotid artery reimplantation in the carotid bifurcation. In the two months follow-up, patient had no further episodes.

CONSLUSION: Carotid webs are a relevant and little publicized cause of embolic strokes of undetermined source, especially in young patients. Surgical treatment is an acceptable option. This report illustrates an uncommon cause carotid associated stroke.

P43 Anastomotic pseudoaneurysm eight years after a femoropopliteal bypass. What are the odds?

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CHVNG/E

INTRODUCTION: Anastomotic pseudoaneurysms (aPA) are rare complications that can occur years after surgical revascularization, most commonly in association with prosthetic grafts.
The clinical presentation is variable, ranging from an asymptomatic pulsatile mass to rupture.
We herein present a successful endovascular treatment of an asymptomatic aPA at the distal anastomosis of an above-knee (AK) femoropopliteal (FP) prosthetic graft.

CASE REPORT: We report a 74-year-old male, regularly followed in our outpatient clinic due to peripheral artery disease, previously submitted to an aortobifemoral bypass in 2010 and a right AK FP bypass in 2012, both with Dacron grafts. Two months after the later procedure, the patient underwent open thrombectomy and patch angioplasty of the distal anastomosis due to acute graft occlusion. He had an additional past medical history of smoking, hypertension, dyslipidemia, atrial fibrillation, and chronic obstructive pulmonary disease.
Eight years after FP bypass, a routine follow-up CTA showed an incidental distal aPA measuring 30mm of maximum diameter. On physical examination, it was also possible to notice a pulsatile mass in the medial aspect of the lower thigh. A PET scan further excluded infection.
Due to the patient's comorbidities and previous surgeries, it was decided to perform an endovascular approach. After

ipsilateral FP graft puncture, two Gore® Viabahn® stent grafts (6mm*10cm and 7mm*10cm) were deployed. A completion angiogram showed successful PA exclusion.
After two years of follow-up, the patient remains asymptomatic with serial ultrasonographies showing patency of stent grafts.

DISCUSSION: Although the mainstay of treatment of popliteal aPA remains open surgery, endovascular management has become more attractive, especially in high surgical risk patients.
In this case, given the patient's comorbidities and prior surgeries presumably with postoperative scarring and adhesions at the anastomotic site, we decided to perform an endovascular repair using self-expandable stent grafts, whose flexibility is a valuable characteristic in the popliteal area, where the artery is exposed to significant flexion/extension, torsion and compression forces.
Further studies will be needed to identify which patients benefit most from endovascular treatment.

P44 Temporal trends in acute organ ischaemia

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CHVNG/E

INTRODUCTION: Arterial thromboembolism causing acute organ ischaemia (AOI) leads to a significant increase in mortality and morbidity. Adverse outcomes in this population remains incredibly high.
Research focusing on the progressive changing management in AOI with the hopes of improving outcomes remains scarce.
An evaluation of the temporal trends in management and clinical outcomes is needed to inform clinicians on opportunities to improved care.
The purpose of this project is to study the changing tendencies in incidence, management, and outcomes of AOI.

METHODS: We identified patients admitted to our center from the 1 January 2013 to 31dezember 2022 with the diagnosis of an acute organ ischaemia (upper limbs, lower limbs, mesenteric, renal, and coeliac/hepatic).
Relevant comorbid status was also collected such as presence of arrhythmias, heart disease (heart failure and coronary artery disease), chronic pulmonary obstructive disease, cerebrovascular disease, hypertension, dyslipidaemia, diabetes, peripheral artery disease, smoking habits, and end-stage chronic kidney disease.
Previous anticoagulation and antiaggregation status were also recorded.

RESULTS: Within the selected time frame, there were 533 patients admitted to our hospital with AOI diagnosis and adequate comorbid information for analysis.
Patients admitted presented with a high burden of known risk factors for embolism and atherosclerotic risk factors.
There were a total 438 lower limb ischaemia events (82.2%), 67 upper limb ischaemia events (12.6%), 23 mesenteric ischaemia events (4,3%), and 2 patients (0,4%) had renal and hepatic artery occlusion.
A descending trend in the relative proportion of embolic AOI was observed throughout the years. The number of untreated patients with known atrial fibrillation also decreased, being accompanied by an increased number of patients treated with direct-acting oral anticoagulants. The type of treatment given to these patients also showed a tendency shifting from conventional open surgery to endovascular techniques.

DISCUSSION: Between 2013 to 2022, a decreasing number of patients hospitalized for embolic AOI has been decreasing throughout the years and an increasing percentage of patients treated with endovascular techniques.
These results may be, in part, due to a possible increase in the number of patients with known atrial fibrillation who are under anticoagulant drugs.

P45 Ex vivo renal aneurysm repair and autotransplantation: a case report

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CHULN

INTRODUCTION: Renal artery aneurysm(RAA) is a very rare condition. Its repair is recommended, in asymptomatic patients, for diameters higher than 2-3 cm, due to rupture risk associated with high mortality rates.
In patients with symptoms or rupture or childbearing potential or medically refractory hypertension and functionally important renal artery stenosis, treatment should be done regardless of size.

CASE REPORT: A 57 years old female, with hypertension (controlled with 3 drugs), dyslipidemia and hypothyroidism, was diagnosed with a 20mm saccular hilar right RAA, in a computed tomography angiography (CTA) performed in the workout of a right lumbar pain. Other aneurysms were excluded.
A laparoscopic nephrectomy was performed by an urology team. Then the kidney was immersed in ice slush and perfused with Celsior® solution in a back table, allowing for arterial repair. The aneurysm was sacular and involved the middle and inferior segmental arteries. A aneurysmorrhaphy was performed followed by reimplantation of the superior segmental artery to make way for the arterial anastomosis.

The kidney was reimplanted in the external iliac artery and vein, through a Gibson incision made by widening the extraction laparoscopy port. There was a need to redo the arterial anastomosis due to kidney hypoperfusion, which resulted in a good arterial pulse and blush. A intraoperative angiography, performed by retrograde right femoral puncture, excluded arterial filling defects.
Post operative ultrasound and CTA also showed good renal perfusion and arterial patency.
At discharge, the patient presented the same renal function as before. Within 1 month, the blood pressure levels were controlled with one less drug.

DISCUSSION: Most RAA are incidental findings. History of hypertension is frequent and in most patients improve after aneurysm repair.
Several techniques are available for RAA repair; ex vivo renal aneurysm repair was performed based on the distal location of the aneurysm and the involvement of renal artery branches, because it enabled better access and longer reconstructive times. Despite the low mortality in elective surgical treatment of RAA, perioperative morbidity is significant.

CONCLUSION: This case highlights the advantage of combining minimally invasive surgery with the effectiveness of ex vivo repair to treat complex distal RAA.

P46 Venous thoracic outlet syndrome treatment in two steps approach

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INTRODUCTION: Thoracic outlet syndrome results from compression of the neurovascular structures traversing the thoracic outlet. Although neurological variant is by far the most common, some studies suggest a concomitant vascular compression in up to 50% of the cases.

OBJECTIVES: To describe a clinical case of a venous thoracic outlet syndrome.
METHODS: Based in clinic report.

RESULTS-CASE REPORT: A female firefighter with 23-years had a cervical trauma related to a car accident (at age of 16) and anterior mediastinal Hodgkin's lymphoma (at age of 19, treated with curative chemotherapy and radiotherapy). After a left axillo-subclavian vein thrombosis complicated by pulmonary emboli (at age of 21) she presented with ongoing left hand fourth and fifth fingers paresthesia and intermittent left upper limb exercise related swelling with progressive worsening. She was evaluated by a thoracic surgeon which performed left supraclavicular first rib resection and anterior scalenectomy for suspected thoracic outlet syndrome. It was noticed partial neurological clinical improvement and a conservative approach with physiotherapy therapy was taken.Nonetheless the patient kept left upper limb exercise related swelling and claudication with worsening of left shoulder superficial venous distension and was referred to a vascular surgeon. The CT-venography showed subclavian vein occlusion associated with extensive chest and upper arm venous collaterals (Figure 1) The patient underwent left axillo-subclavian vein stenting (Sinus Venous 10x100mm Optimed®) under local anesthesia after percutaneous ultrasound-guided left brachial vein puncture (Figure 2). Clinically that was a regression of the left upper limb edema and a significant improvement of the exertional fatigue.

CONCLUSION: Venous TOS is overlooked with hard diagnosis. First rib resection is crucial but should be immediately followed by an evaluation and repair of the vein. Venous stenting is an option only after the treatment of extrinsic compression.

P47 Trombose: tratamento natural de aneurismas aorto-ilíacos?

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CHUSJ

INTRODUÇÃO: Os aneurismas aorto-ilíacos têm como principal complicação a rotura. No entanto, a trombose destes aneurismas, apesar de rara, pode também resultar em situações de elevada urgência, com índices de mortalidade elevados. A apresentação clínica típica destes casos é de dor abdominal severa, com sintomas de isquemia aguda dos membros inferiores. Apesar disto, a trombose dos aneurismas aorto-ilíacos pode ser assintomática, sendo estes descobertos de forma incidental ou no estudo diagnóstico de doença arterial periférica.

CASO CLÍNICO 1: Homem de 62 anos, com antecedentes de tabagismo e hipertensão arterial, orientado para consulta de Cirurgia Vascular por quadro de claudicação da face posterior da coxa esquerda de início recente. AngioTAC demonstrou aneurisma da artéria ilíaca comum esquerda, com cerca de 2,1cm, trombosado, e aneurisma da artéria ilíaca comum direita de 2,4cm, permeável. Dois anos mais tarde, o doente desenvolveu claudicação de novo no membro inferior direito, de características semelhantes às do membro contralateral,

e o estudo por angioTAC confirmou trombose do aneurisma da artéria ilíaca comum direita. Aos 6 anos de follow-up, o doente permanece sob tratamento médico otimizado, e com claudicação estável, não limitante.

CASO CLÍNICO 2: Homem de 79 anos, com antecedentes de hipertensão arterial e doença renal crónica, orientado para consulta de Cirurgia Vascular por achado incidental em ecografia abdominal de aneurisma da aorta abdominal infrarrenal, com 6,5cm de maior diâmetro. O estudo por AngioTAC demonstrou trombose do aneurisma supracitado, logo após a emergência das artérias renais, com repermeabilização distal através das artérias epigástricas inferiores. Aos 4 anos de follow-up, o doente permanece sob tratamento médico otimizado, e com claudicação estável, não limitante.

CONCLUSÃO: A trombose de aneurismas aorto-ilíacos é uma entidade clínica rara, com clínica heterogénea. O seu diagnóstico pode ser feito de forma incidental ou no estudo de um doente com claudicação intermitente. A vigilância destes doentes é fundamental, uma vez que se mantém o risco de crescimento do saco aneurismático e consequente rutura.

P48 SVS/AAVS grading for pulmonary status and contemporary outcomes of elective endovascular aortic aneurysm repair

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AIMS: Chronic obstructive pulmonary disease (COPD) is a known risk factor for increased postoperative morbidity and mortality. The aim of our study was to analyse the impact of SVS/AAVS grading system on mortality and complications after endovascular aortic aneurysm repair.

METHODS: A retrospective review of all patients undergoing elective EVAR for infra-renal abdominal aortic aneurysms (AAA) from January 2018 to December 2021 was performed. Patients with isolated iliac aneurysms, complex repair (F/BEVAR) or presenting with rupture or symptomatic aneurysms were excluded. Primary endpoint was aneurysm-related complications during follow-up according to SVS/AAVS pulmonary status while secondary endpoints were aneurysm-related and systemic complications at 30-days and overall survival.

RESULTS: A total of 99 patients were identified: 73 were pulmonary status grade 0, 18 were grade 1, 6 were grade 2 and 2 were grade 3. Most patients with pulmonary status grade 1-3 were male (25 males, 96,2%). There were no differences in other comorbidities between patients with grade 0 and 1-3. Intra-operative complications occurred in 30,8% of grade 1-3 patients, vs 17.8% in grade 0 patients (p=0.263). At 30-days, there were no differences in aneurysm related complications, while systemic complications were higher in grade 1-3 (11.5% vs 2.7%, p=0.112), the most frequent being acute kidney failure. Mean follow-up was 18,9 ± 15,25 months. There were no differences in aneurysm-related complications during follow-up (15.1% grade 0 vs 11.5% grade 1-3, p=0.756). Overall survival at three-year follow-up was worst for patients grade 1-3 when compared with grade 0 (57,2% vs 89,9%, p=0,008), which was mainly due to the effect of patients grade 2 and 3. Overall three-year survival for patients grade 0-1 was 87,1%, versus 20% of patients grade 2 (p<0.001).

CONCLUSIONS: Patients with pulmonary status SVS/AAVS grade 2 and 3 have worst survival after EVAR, while patients grade 0 and 1 have similar survival Consequently, a judicious evaluation of pulmonary function is mandatory to improve outcomes.

P49 Aortoenteric fistula after aortobifemoral bypass - an ingenious solution to a complex problem

João Peixoto, Pedro Brandão, Ana Carolina Semião, Luís Fernandes, Marta Machado, Francisco Basilio, Patrícia Carvalho, Alexandra Canedo

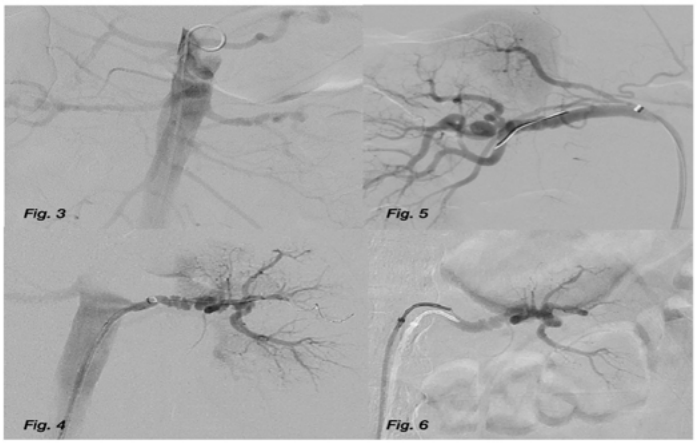
CHVNG/E

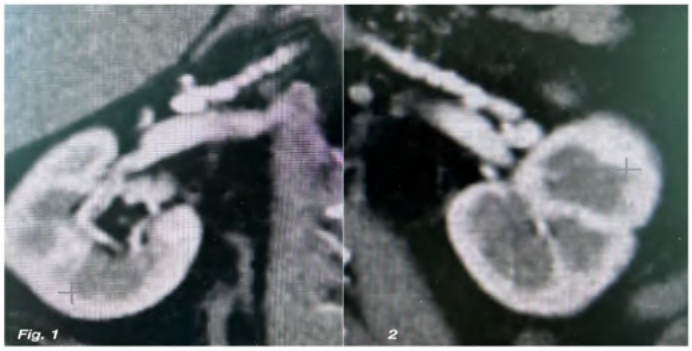
INTRODUCTION: Although rare, late complications after aortic surgery occur and pose an important threat to the patient.
Aortoenteric fistulas are uncommon complications of prosthetic grafts and potentially life-threatening conditions. Open surgical repair carries significant morbidity and mortality. We describe a case of a patient successfully treated with an endovascular approach.

CASE REPORT: 74-year-old male patient, admitted in the ER for haematemesis. History of an aortobifemoral bypass procedure 12 years before and a year prior, he had been admitted in the vascular surgery department for ischæmic rest pain being submitted to a femoropopliteal bypass of the left lower limb. Other comorbidities included hypertension, diabetes, COPD, and active smoking habits. Endoscopy study showed the presence of a “foreign body” on the third portion of the duodenum and CTA showed the intimate relation between the duodenum and the bypass graft.

Given the patients' age, co-morbidities, persistent elevated inflammatory parameters, and fever, we decided to perform an endovascular procedure as a temporary "bridge technique". The goal was to exclude the aorto-enteric fistula however maintaining the perfusion of the native aorta - due to complete occlusion of both external iliac arteries, pelvic perfusion was dependent on the right internal iliac artery (perfused anterogradely through the native vessel). Procedure consisted of deployment of an iliac extension endograft which was deployed proximally at the native infra-renal aorta and distally on the Dacron body graft of previous bypass, as well as a parallel covered stent maintaining native aortic perfusion.

CONCLUSIONS: We described an aortoenteric fistula found 12 years after the primary procedure. During this admission, blood cultures remained negative, which according to literature are positive only in 35% of cases. An endovascular strategy was chosen to avoid a more invasive approach in a patient who was already physiologically and nutritionally deconditioned.
ESVS guidelines recommend that in the emergency setting, treatment with an endograft should be considered, as a temporary measure or even as a definitive solution in selected cases. In the meanwhile, oral antibiotics will be kept indefinitely.





P50 Uma causa incomum de hipertensão arterial

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INTRODUÇÃO: A DRV (doença renal vascular) é uma das principais causas de hipertensão arterial (HTA) secundária e doença renal isquémica. A displasia fibromuscular (DFM) é responsável por uma minoria destes casos. Histologicamente caracteriza-se pela proliferação da camada muscular arterial, mais frequente a nível renal e carotídeo. Afeta principalmente mulheres de meia idade (90%) e a HTA é a apresentação em > 70% dos casos, geralmente refratária ao tratamento médico. Tipicamente, associa-se ao sinal angiográfico de "cordão de contas". Nos casos de refratariedade ao tratamento médico, a angioplastia da artéria renal surge como o tratamento alternativo.

CASO CLÍNICO: Reportamos um caso de DFM numa mulher de 48 anos de idade, que se apresentou na consulta com um quadro de HTA refratária a quatro classes de fármacos anti-hipertensores na dose máxima, associado a crises hipertensivas com queixas de cefaleia hemicraniana. A Angio-TC abdominal, realizada para excluir causa renovascular para a HTA, documentou a presença de dilatações multifocais de morfologia sacular no terço médio de ambas as artérias renais (Fig 1 e 2). Não foi documentada doença território carotídeo no angio-TC cervical e craniano. Neste contexto, foi submetida a angioplastia com balão (Armada Abbott® 5x40mm) de ambas as artérias renais, por acesso femoral unilateral após angiografia diagnóstica (Fig 3 a 6). O procedimento foi complicado de hematoma perirrenal esquerdo, iatrogénico e despercebido durante o procedimento cirúrgico, vigiado de forma expectante com tratamento conservador com sucesso. A doente teve alta clínica ao quarto dia pós-operatório, apresentando-se normotensa desde o pós-operatório imediato.

CONCLUSÃO: Deve suspeitar-se de DFM em caso de HTA secundária em mulheres jovens. A literatura recomenda angioplastia com balão das lesões arteriais renais, com resposta clínica duradoura. A perfuração de pequenos colaterais corticais renais pode complicar o procedimento e ameaçar a vida do doente.

P51 Isquemia medular aguda: apresentação clínica de oclusão aórtica?

Tiago Moura, António Pereira-Neves, Filipa Jácome, Leandro Nóbrega, Diogo Monteiro, Lara Dias, Tiago Costa-Pereira, Paulo Dias, Joel Sousa, Armando Mansilha

CHUSJ

Isquemia medular - apresentação inicial de oclusão aórtica aguda

INTRODUÇÃO: A oclusão aórtica aguda constitui uma emergência cirúrgica, a qual requer um diagnóstico rápido e intervenção imediata. A sua apresentação é dependente da extensão e nível de oclusão da aorta, sendo a oclusão infrarrenal a mais comum. O aparecimento súbito de dor e alterações sensitivo-motoras nos membros inferiores, em conjunto com sinais de isquemia ao exame físico, aumentam a suspeição para esta patologia. As suas etiologias são diversas, e incluem embolização, trombose aórtica in situ ou oclusão aguda de aneurisma da aorta.

CASO CLÍNICO: Mulher, 74 anos de idade, com antecedentes de hipertensão arterial, fibrilação auricular, hipertensão pulmonar e substituição valvular mitral com anuloplastia da válvula tricúspide. No registo de medicação habitual destaca-se a varfarina (INR à admissão: 2,76).
Foi admitida no SU por quadro súbito de paraplegia, com força grau 0 em todos os movimentos exceto grau 1 na flexão da coxa, e hipoestesia total dos membros inferiores (com nível sensitivo em T12). Sem pulsos femorais e distais, com fluxos monofásicos nos tripés femorais.
Realizou AngioTAC toraco-abdomino-pélvico, que revelou oclusão da aorta abdominal infrarrenal numa extensão de 40mm, com extensão a ambas as artérias ilíacas comuns e repermeabilização distal nas bifurcações ilíacas. Realizou também RMN medular, que concluiu pela existência de alterações sugestivas de lesão isquémica medular subaguda. Sem capacidade de tratamento interventivo pela Neurologia (fibrinólise e drenagem de LCR, por estar hipocoagulada). Após decisão multidisciplinar, decide-se realização de tromboembolectomia aorto-ilíaca por abordagem femoral bilateral, com remoção de extenso material trombótico e hialino e recuperação de pulsos femorais. No pós-operatório observou-se reversão do quadro de isquemia e recuperação imediata parcial dos défices sensitivo-motores.

CONCLUSÃO: A oclusão aórtica aguda é uma entidade clínica que requer diagnóstico imediato e tratamento emergente. A isquemia medular constitui uma apresentação atípica cujo reconhecimento precoce e abordagem multidisciplinar é fundamental para uma correta orientação terapêutica.

P52 Superior vena cava syndrome: double barrel stenting case report

Diogo Domingues Monteiro, Tiago Moura, Filipa Jácome, Paulo Dias, Joel Sousa, Armando Mansilha

Centro Hospitalar Universitário de São João

INTRODUCTION: Superior vena cava syndrome (SVCS) is a highly morbid and potentially fatal condition. It is usually secondary to compression, invasion, and/or thrombosis of the superior vena cava and/or the brachiocephalic veins, and its symptoms are correlated to the acuity and extent of the venous obstruction and inversely correlated to the development of the venous collateral circuits. The advent of endovascular treatment strategies has allowed for minimally invasive treatment of this condition.

CLINICAL CASE: A 66 years-old male presented to the emergency department with facial, neck, upper body and arms swelling, associated with chest pain, dysphagia and shortness of breath. Symptoms had started 2 months prior, and aggravated progressively since then.
A computorized tomography angiography (CTA) was performed upon admission, and revealed a mediastinal mass, measuring approximately 5.6cm in diameter, and causing obliteration of the superior vena cava, right brachiocephalic vein and proximal portion of the left brachiocephalic vein, with obvious collateralization to the azygos system. Given the clinical impact of the SVCS and unsatisfactory response after steroid therapy, and endovascular recanalization was planned. As such, a jugular-femoral vein through-n-through was established and both SVC and bilateral brachiocephalic vein recanalization was performed using self-expandable stents placed in a double-barrel fashion. Completion angiography revealed permeability of both brachiocephalic veins and superior vena cava, reducing the collateralization to the azygos system. Significant clinical improvement was observed, and the patient was discharged on the 2 post-operative day.

CONCLUSION: Endovascular stenting for malignant superior vena cava obstruction allows for minimally-invasive symptom improvement. In patients with SVC syndrome secondary to malignant disease, endovascular recanalization remains the gold-standard for SVCS management.

P53 Endoanchors as a rescue solution for complex TEVAR

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Centro Hospitalar de Lisboa Central - Hospital de Santa Marta

We report a case of 83-year-old woman with a ruptured distal thoracic aortic aneurysm (TAA) treated with endovascular repair using endostaples.

METHODS: The patient had a history of hypertension, dyslipidemia and hypothyroidism. She was brought to ER with sudden unset of acute thoracic pain and severe hypotension (64/36mmHg). Thoracic X-ray showed a left "white lung" so the patient went for an emergent CTA that revealed a 85mm distal aortic thoracic aneurysm, with signs of ruptured (left hemothorax).

RESULTS: The patient was transferred to our center, being stable at admission. The CTA revealed a long proximal sealing zone but a short distal neck of 8 mm proximal to the celiac axis and a moderate mismatch between proximal and distal aortic diameter, raising the complexity of the TEVAR procedure. Therefore, the decision to perform TEVAR in a distal to proximal fashion and the use of endostaples for distal fixation was made. Right common femoral artery was accessed and preload with 2 Prostar closure systems. A 24 Fr sheath was inserted and an aortogram confirmed a short distal neck. The celiac artery was roadmapped. Two VALIANT THORACIC ® Endo Grafts (Medtronic) 30 x 100mm + 32x150mm were deployed from above the celiac axis to aortic arch zone 4. An intermediate angiogram showed a type 1b endoleak. Six Aptus Heli-FX Thoracic EndoAnchors were placed at AP position, 30 RAO and 30 LAO. Final angiogram showed no endoleak and good filling of the celiac artery. The patient tolerated the procedure without any complications. A left thoracic drainage was performed by Thoracic Surgery team the same day and she was discharged uneventfully at day 6, remaining well at one month follow-up. Post-op CTA confirmed good placement of graft with no endoleak and aneurysm completely excluded.

CONCLUSIONS: There are multiple options for obtaining distal fixation during TEVAR, including coverage of the celiac axis, parallel stenting, fenestrated/scalloped/branched stent grafts and physician modified endografts. This case is an example of a distal TAA with difficult anatomy due to a short distal neck treated with endovascular repair using endoanchors to ensure distal sealing, emphasizing the role of endostaples as a safe and viable alternative, specially in bail out cases, maintaining the procedure complexity acceptable and avoiding the need for more complex treatments. Results of endostaples are promising, but further studies are warranted to evaluate long-term safety and durability.

P54 Correction of a type Ib endoleak: parallel graft technique

Diogo Domingues Monteiro, Tiago Moura, Paulo Dias, Joel Sousa, Armando Mansilha

Centro Hospitalar Universitário de São João

INTRODUCTION: A type Ib endoleak (T1bEL) is a postoperative complication that usually requires additional interventions following endovascular aortic aneurysm repair. Endovascular aneurysm repair (EVAR) has become the first-line treatment modality for infrarenal aortic aneurysms. However, obtaining successful long-term results frequently requires reinterventions. Particularly, delayed type 1b endoleaks pose a challenging problem, as they are often associated with distal extension of the aneurysmal process to the iliac bifurcation or the external iliac artery.
Reports on the incidence of aneurysm enlargement after EVAR vary between 0.2% and 41%. Continuous growth could lead to rupture of the aneurysm sac.
Reinterventions after EVAR are common; however, it is unclear how frequently these are required because of aneurysm enlargement. Aneurysm enlargement after EVAR remains a subject of debate, as this could lead to aortic rupture.

CLINICAL CASE: A 83 years-old male, with history of EVAR to correct a 9cm diameter Abdominal Aortic Aneurysm (AAA) and a 5cm left common iliac artery aneurysm, came to the emergency department presenting with a sudden onset of back and abdominal pain. The Computorized Tomography Angiogram (CTA), which reported a significant growing of the aneurysmatic sac (109mm*105mm versus 94mm*93mm) due to a T1bEL in the right Iliac axis. In addition, the CTA also reported a type II Endoleak (T2EL) with origin in the left circumflex femoral artery.
The patient was submitted to a parallel graft technique in the Right Common Iliac Artery bifurcation, (10mm*150mm + 10mm*150mm Viabahn stent grafts). The left-sided T2EL was solved with an extension of the EVAR stent graft to the left external iliac artery with a Viabahn 13mm*100mm stent graft. The final angiogram showed a satisfactory result, with no visible endoleaks.
The patient was discharged asymptomatic and maintains strict follow-up with no grow of the aneurysmatic sac or visible endoleaks.

CONSLUSION: Use of parallel grafts showed mid-term safety and feasibility with low incidence of persistent endoleaks requiring intervention or progression of aneurysm diameter. This type of complications emphasizes the need for life-long radiologic surveillance during follow-up.

P55 An unusual case of mycotic aortic aneurysm by streptococcus pneumoniae

Filipa Jácome, Tiago Pereira, Margareth Soares, Tiago Moura, Diogo Monteiro, Lara Dias, Leandro Nóbrega, António Neves, José Ramos, Maria Dias-Neto, Armando Mansilha

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INTRODUCTION: Mycotic aortic aneurysms (MAA) are a rare condition, representing 1%–2.6% of all aortic aneurysms. The most common pathogens involved are gram positive bacteria, most frequently Staphylococcal and enterococcus species, but also Streptococcus pneumoniae and Clostridium species. Mycotic aneurysm repair is always recommended irrespective of aneurysm size and, thus, early diagnosis, immediate administration of systemic antibiotics, and prompt surgical treatment are cornerstone to improve outcomes.

METHODS: Patients' clinical registries and imagological studies were retrospectively reviewed.

CASE REPORT: A 53-year-old man was admitted to the Emergency Department with a 2-week history of fever, asthenia, headache and epigastric pain. Abdominopelvic CT scan revealed a common iliac artery occlusion, thickening of infrarenal aortic wall and surrounding fat stranding, suggestive of unspecific aortitis. Lumbar punction results were consistent with purulent meningitis. Blood cultures on admission were positive for Streptococcus pneumoniae, and the patient was promptly treated with intravenous penicillin. On the 45th day of hospitalization, an intense aggravation of the abdominal pain occurred and urgent CT scan revealed a 52mm infrarenal aortic aneurysm, with irregular and indistinct walls (Fig. 1), suggestive of instability, and a 16mm thoracic aortic pseudoaneurysm in zone 3 of Ishimaru. The patient underwent an open surgical repair, where lobular and fibrotic aortic walls were appreciated, and an aorto-bi-iliac bypass was successfully performed with a silver impregnated graft (Fig. 2). The patient evolved favorably in the postoperative course and the abdominal pain ceased. Currently, he maintains antibiotic therapy with penicillin (decided to be ad eternum) and is waiting for open thoracic pseudoaneurysm surgery.

CONCLUSION: Early MAA diagnosis and multidisciplinary team evaluation and management are of paramount importance to improve outcomes.Open surgical repair is regarded as the gold standard for definitive treatment of MAA, alongside with directed and intensive antibiotic therapy. The optimal duration of antibiotic therapy is still debatable, although the use of PET-CT to determine inflammatory activity could be a valuable tool to guide future recommendations.

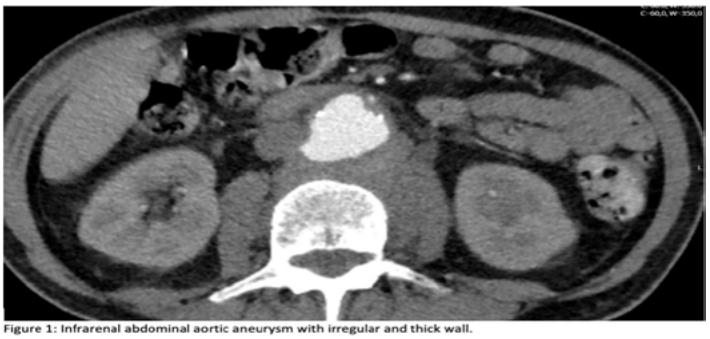

Figure 1: Infrarenal abdominal aortic aneurysm with irregular and thick wall.

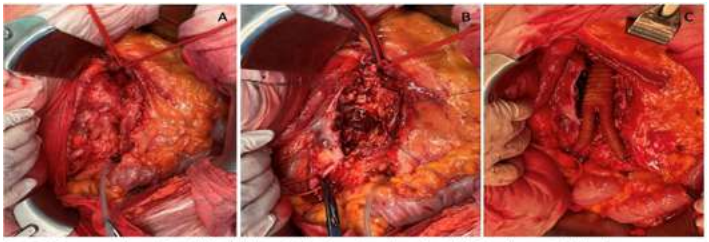

Figure 2: Open surgical repair, in which a lobular and fibrotic aortic wall was found (A, B), and an aorto-bi-iliac bypass was successfully realized with silver impregnated graft (C).

P56 Challenging repair of a ruptured TAA due to combined type ia and ib endoleak: a two-act play

Patrícia Sofia Ribeiro Carvalho, Daniel Brandão, João Peixoto, Luís Fernandes, Marta Machado, Francisco Basílio, Alexandra Canedo

CHVNG/E

INTRODUCTION: Thoracic Endovascular Aortic Repair (TEVAR) has become the mainstay of therapy of Thoracic Aortic Aneurysms (TAA). However, late complications have been reported, particularly endoleaks, whose incidence after TEVAR range from 5 to 20%.
We describe a challenging endovascular repair of a ruptured TAA caused by combined type 1a (EL1a) and 1b (EL1b) endoleaks.

CASE REPORT: A 68-year-old female, with a prior history of smoking, hypertension, dyslipidemia, and a TAA previously submitted to TEVAR (COOK® Zenith Alpha™ endograft, from zone three to five) and a subsequent successful EL1a correction five months later with proximal ballooning, presented, nine months after the initial TEVAR, to her local hospital complaining of interscapular pain and dyspnea. On physical examination, she was hypoxic (SpO2 84%), with mottled skin and decreased respiratory sounds on the left hemithorax. Hemoglobin level was also decreased (9.4g/dL). A CTA was performed showing aneurysmal sac enlargement and contained aortic rupture induced by a large EL1a and an EL1b, resulting in left hemothorax with atelectasis.
The patient was transferred to our institution where she was

submitted to proximal and then distal endograft extension in two staged surgical times (two days apart), both using GORE® TAG® Conformable Thoracic Stent Grafts. In order to establish adequate landing zones, left subclavian artery (LSA) and celiac artery (CA) were sequentially covered. In the first procedure, the LSA was additionally occluded using an Amplatzer™ Plug II. To treat hemothorax, a chest tube was inserted with 1200mL of blood drainage.
The patient remained stable during hospital stay, being discharged one month after the procedures. CTA performed at that time, showed complete exclusion of endoleaks and lung expansion.

CONCLUSION: Type 1 endoleaks are associated with poor sealing zones and can occur immediately after graft placement or during follow-up, which demonstrates the importance of surveillance after TEVAR.
In this case, it was necessary to cover LSA and CA to achieve adequate landing zones and prevent recurrent endoleaks. This manoeuvre may be associated with an increased risk of stroke, spinal cord and mesenteric ischemia. Meticulous vigilance for alarming symptoms should be maintained in the post-operative period.

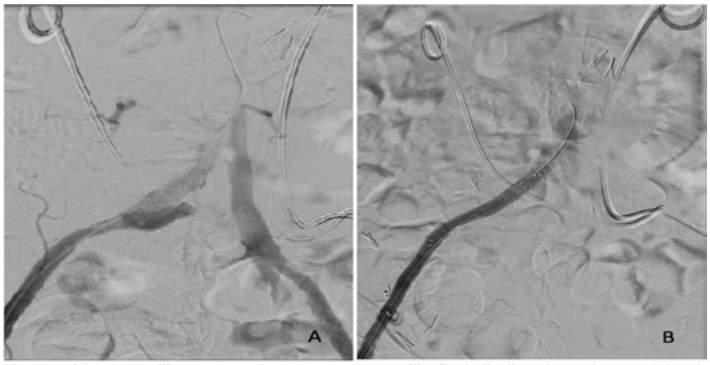

Figure 1: Right common iliac artery pseudoaneurysm and uretero-iliac fistula distally to the previous stent (A) and pseudoaneurysm and uretero-iliac fistula exclusion with covered stents.

P57 Uretero-iliac fistula: a rare and recurrent life-threatening condition

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INTRODUCTION: Uretero-iliac fistulae (UIF) is a rare life-threatening condition with a mortality rate up to 9%, which is most often secondary to an outside factor, such as radiotherapy, double J stent placement or loco-regional surgery. Endovascular treatment of UIFs is becoming the gold-standard treatment due to its efficacy and safety.

METHODS: Patients' clinical registries and imagological studies were retrospectively reviewed.

CASE REPORT: A 74 years-old woman, with previous transurethral bladder resection and adjuvant radiotherapy in 2016 due to bladder cancer, was admitted in the Emergency Department with gross macroscopic haematuria and acute anemia in August/2022. CT scan revealed a common iliac artery pseudoaneurysm adjacent to the right ureter, and angiography put in evidence an UIF, which was successfully treated with a covered balloon-expandable stent in the right common iliac artery. In December/2022, the patient had a new episode of macroscopic haematuria associated with hemodynamic instability and severe Hb drop. Angiography showed pseudoaneurysm persistence in the distal portion of the previous stent (Fig 1A), which was successfully treated by distal extension of the previous stent with a self-expandable covered stent (Figure 1B). Although no microbiologic agents were identified in both urine and blood cultures, after multidisciplinary discussion, the patient was placed under empiric antibiotic therapy with piperaciclin/tazobactam for 2 weeks, followed by prolonged antibiotic therapy with amoxicillin/clavulanic acid. In March/2023, there was a new recurrence of macroscopic haematuria, and another pseudoaneurysm with UIF was evident in the distal end of the previous stent. Once again, successful distal sealing was achieved with a new self-expandable covered stent. The patient maintains regular surveillance and antibiotic therapy.

CONCLUSION: In case of gross hematuria in patients with risk factors, UIF must be suspected and immediately treated, as it represents a life-threatening condition. Endovascular treatment is a minimally invasive, fast and effective procedure. Multidisciplinary approach, involving Infectious Diseases, Vascular Surgery and Urology is paramount in the management of these patients.

P58 Superior vena cava syndrome: case report

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Centro Hospitalar Universitário de Santo António

INTRODUCTION: Superior Vena Cava Syndrome (SVCS) is a medical condition that occurs when the Superior Vena Cava (SVC) becomes obstructed, either from external or internal causes. The wider use of indwelling devices is becoming a frequent iatrogenic cause of SVCS.

CASE REPORT: We report a 53-year-old male with a history of dysfibrinogenemia leading to multiple mesenteric thrombotic events and ischemia, ultimately requiring extensive intestinal resection. Due to intestinal malabsorption, the patient had a tunneled Central Venous Catheter (CVC) placed in the right subclavian vein one year earlier to allow parental nutrition. The patient presented at the emergency room with complaints of dry cough, pleuritic pain, face and neck swelling, orthopnea, and dilated chest veins in the right hemithorax. A CT scan revealed a total obstruction of the SVC and right brachiocephalic vein. The distal tip of the tunneled CVC was placed at the proximal SVC. An extensive right pleural effusion leading to atelectasis was also detected (Image 1). The patient was submitted to a thoracocentesis, draining 5 liters of a yellowish amicrobial liquid. Other possible etiologies of pleural effusion were excluded.
Considering the symptomatic SCVS, surgery was proposed. The patient was placed under general anesthesia and a right jugular access obtained under ultrasound guidance. Diagnostic phlebography confirmed SVC total occlusion, with the venous flow being redirected to the left brachiocephalic and azygos vein (Image 2). The recanalization of the SVC was achieved and a stiff guidewire placed in the inferior vena cava . Sequential SVC angioplasties were performed using 4, 7, 12 and 14mm plain balloons. Afterwards, a 18x80mm dedicated stent was placed in the SVC. Post dilation was performed using a 18x40mm balloon. Control phlebography evidenced the permeabilization of the SVC and the absence of contrast in the azygos system (Image 3). After the procedure, the patient's symptoms ceased, and the pleural effusion remained steadily decreasing.

CONCLUSION: The SVCS is a rare syndrome, consequently health professionals must maintain a high clinical suspicion to diagnose and treat this condition. The decision between conservative and interventive treatment must be decided upon each case, depending on its cause and duration. In patients with benign pathology, as the one in this case, endovascular stenting represents a safe and effective alternative.
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P59 Thyrocervical trunk false aneurysm: two different approaches

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INTRODUCTION: Pseudoaneurysms of the thyrocervical trunk or its branches are extremely rare. They are often the result of a penetrating injury and commonly iatrogenic in origin. Most such injuries are iatrogenic and are associated with central venous catheterization.

CASE 1: We report a case of a 19-year-old man involved in a motor vehicle collision and had multiple central venous catheterization attempts of the right Internal Jugular Vein who presented with a massive hemothorax over the course of 24 hours and haemodynamic instability. A Computorized Tomography Angiogram (CTA) examination was requested to evaluate the cause of the hemothorax, which showed an active bleeding source from the right Thyrocervical Trunk. Since the patient was hemodynamically unstable, it was decided to place a Bentley BeGraft 7*37mm in the first porting of the right Subclavian Artery, covering the origin of the Thyrocervical Trunk, with resolution of the active bleeding. The patient regained hemodynamic stability during the next few days.

CASE 2: We report a case of a 65-year-old man, who was admitted for surgical treatment of Aortic Dissection type A. In post-op CT was detected a false aneurysm of thyrocervical trunk, a branch of subclavian artery, with 22x20mm diameter. The patient was proposed for endovascular correction via braquial artery access.
The thyrocervical trunk was successfully embolized with 4 coils (1 coil 3x2mm and 3 coils 4x2mm). Completion angiography demonstrated complete occlusion of thyrocervical trunk, with exclusion of the false aneurysm. Post-op CTA confirmed exclusion of the false aneurysm.

CONCLUSION: Endovascular approach for thyrocervical trunk false aneurysms allows a safe and effective treatment with few complications, especially in patients with hemodynamic instability. However, further studies are needed in order to establish the long-term complications.