SUPPLEMENT

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VASCULAR SURGERY

THE GUPTA PERIOPERATIVE RISK FOR MYOCARDIAL INFARCT OR CARDIAC ARREST (MICA) CALCULATOR AS AN INTRAOPERATIVE NEUROLOGIC DEFICITS PREDICTOR IN CAROTID ENDARTERECTOMY

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Keywords: *Carotid endarterectomy, Carotid stenosis, Major Adverse Cardiovascular Events, survival analysis, MICA score, Atherosclerosis, perioperative stroke*

INTRODUCTION

Patients undergoing carotid endarterectomy (CEA) may experiment intraoperative neurologic deficits (IND) during the carotid cross-clamping. This work aimed to assess the impact of the National Surgical Quality Improvement Program Gupta Perioperative Myocardial Infarct or Cardiac Arrest (MICA) risk calculator in the IND.

METHOD

From January 2012 to April 2021, patients submitted to CEA with regional anesthesia for carotid stenosis with IND and consecutive controls without IND were selected. Patients' characteristics were retrieved. Univariate analysis and binary logistic regression were performed, and a regressive predictive model was created together with receiver operating characteristic (ROC) curves. A Classification and Regression Tree (CRT) algorithm was also conducted.

RESULTS

194 patients were included. Ninety-seven developed IND. Obesity showed an adjusted odds ratio (aOR)=4.01 (95% CI:1.66-9.67) and MICA an aOR=1.21 (1.03-1.43). Higher contralateral stenosis showed an aOR=1.29 (1.08-1.53). The AUROC curve was 0.656 (95% CI:0.580-0.732, R2=0.204) with a negative predictive value of 97%. Higher ipsilateral stenosis has presented an aOR=0.69 (0.51-0.94). A CRT algorithm has discriminated obese patients with a MICA score≥8. Regarding non-obese patients, the model identified the presence of contralateral stenosis≥55% with a MICA≥10.

CONCLUSIONS

MICA score might play an additional role in stratifying patients for IND in CEA. Obesity was determined as the greater discrimination factor, followed by a MICA score of at least 8. For non-obese patients, a MICA score of 10 together with contralateral stenosis of at least 55% was also discriminative. Larger studies might validate the true benefit of MICA score regarding the risk of IND.

PLANTAR ACCELERATION TIME A NEW TECHNIQUE TO ASSESS PERIPHERAL ARTERIAL DISEASE

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Keywords: *Plantar Acceleration Time, Peripheral Arterial Disease, Ultrasound, Ankle Brachial Index*

INTRODUCTION

The use of the ankle-brachial index (ABI) in the diagnosis and evaluation of the severity of peripheral arterial disease (PAD) is well established; however, its application is limited in patients with marked oedema of the limb, leg and foot ulcers or severe arterial calcification with uncompressible arteries, making it impossible to measure ankle pressures in these patients. Thus, non-invasive alternatives have been developed to assess blood flow to the foot, namely toe-brachial index (TBI) and transcutaneous oxygen pressures (TcPO2), yet these are not as widely available and their application is not as widespread as ABI. In 2019, the use of ultrasound to measure plantar acceleration time (PAT) at the arteries of the foot was first described as a new method to evaluate arterial perfusion to the foot and assess PAD severity, requiring only the use of ultrasound, in patients with marked calcification at the ankle, where ABI was unmeasurable, showing promising results.

AIMS

Review the published literature about the technique and analyze the results on the use of plantar acceleration time as a non-invasive method to evaluate PAD. Using PubMed, EMBASE and Cochrane Library databases all articles referring to the applications of PAT in PAD were selected.

METHOD

Three retrospective studies were published between 2019 and 2022 where the use of PAT is described. A total of 399 patients and 660 limbs were examined, 23,1% of patients were diabetic, 48% were active smokers. The first published study managed to establish a correlation between ABI and PAT with statistical significance ($p<0,001$) in a non-diabetic population and divide patients into 4 categories which correlated with PAD clinical severity. Similar results were obtained between TAP and TBI in another study. One study measured PAT before and after revascularization for chronic limb-threatening ischemia (CLTI) and concluded that all patients that achieved limb salvage had marked improvement on PAT, whilst patients undergoing major amputation after revascularization were associated with no improvement in plantar acceleration time after surgery.

RESULTS AND CONCLUSION

The published literature supports the use of PAT as a new tool to assess the severity of PAD as an alternative to ABI or TBI when these are not readily available or cannot be measured, while also showing promising results as a predictor of limb salvage in patients with CLTI. Furthermore, this technique is readily available, requiring only the use of ultrasound and basic anatomic knowledge of the arteries in the foot, allowing a fast and easily reproducible evaluation.

ENDOMETRIAL STROMAL SARCOMA EXTENDING TO THE RIGHT ATRIA: AN EXCEEDINGLY RARE ENTITY

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Keywords: *endometrial stromal sarcoma; smooth muscle tumor; vena cava tumor invasion; intracardiac tumor*

INTRODUCTION

Endometrial stromal sarcomas (ESS) are rare entities, representing less than 0.2% of all uterine malignancies. Large vessel involvement is exceedingly rare. Although the clinical course is insidious, recurrence is not uncommon, and the prognosis is dependent on complete surgical resection.

CASE REPORT

We present a case of a uterine endometrial stromal sarcoma in 45-year-old women presenting with gynecological bleeding and a deep vein thrombosis of the right lower limb. A pelvic mass was found and confirmed by ultrasound and upon further investigation a tumoral thrombus was identified occupying the entire extension of the inferior vena cava with proximal extension to the right atria. The patient was evaluated by a multidisciplinary team of sarcoma specialized General Surgery, Cardiac Surgery and Vascular Surgery and ultimately proposed for a joint radical surgery with total abdominal hysterectomy, bilateral salpingo-oophorectomy, cavotomy and right atriotomy. The patient is currently undergoing hormonal therapy with megestrol and is 1-year disease-free with no complications from the surgery.

DISCUSSION

ESS is a slowly growing neoplasia that is often misdiagnosed or diagnosed late because of its unspecific presentation. Depending on the histologic analysis it can be classified in low-grade or high-grade ESS with implications mainly in the rate and timing of recurrence. Surgery, if feasible, offers the only curative approach in both settings, with a free resection margin being the most important prognostic factor for long-term survival.

CONCLUSION

Atypical presentations of severe deep vein thrombosis in young patients should always prompt exclusion of paraneoplastic syndrome. For ESS with caval extension radical surgery is feasible and relatively safe and should be pursued in order to achieve a cure.

TOTAL AORTIC REMODELING AFTER AORTIC DISSECTION WITH MEDICAL THERAPY: CASE REPORT AND LITERATURE REVIEW

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Keywords: *aortic remodeling, aortic dissection, medical therapy*

INTRODUCTION

Aortic dissection is a serious condition and may be lethal if not diagnosed and treated early. Medical therapy, with medications that decrease blood pressure and heart rate which lowers the stress on the aortic wall, is usually the standard of care for acute uncomplicated type B dissection. Surgery or endovascular intervention is reserved for patients with complicated type B or type A aortic dissection. Aortic remodeling consists in the increase of the true lumen and decrease of false lumen volumes.

AIMS

We aim to review the literature about aortic remodeling after aortic dissection and present a case report in this matter.

METHODS

We describe a case report of an aortic dissection treated with medical therapy with total aortic remodeling, with presentation of the radiological findings. We performed a thorough electronic search of the literature using PubMed and Embase databases, using the following combination of key words in our search strategy ((aortic remodeling) AND (aortic dissection) AND (medical therapy*)).

RESULTS AND CONCLUSIONS

We present a case of a 49-year-old female patient with a diagnosis of type A aortic dissection complicated with a postoperative stroke. She had history of smoking and resistant hypertension diagnosed 4 years before. The patient was submitted to total prosthetic replacement of the ascending aorta. On the postoperative CT scan 1 year after surgery, an aortic dissection extending from 7cm distally to the aortic valve, to the aortic bifurcation was still observed. After 5 years on medical therapy with good control of blood pressure and heart rate, the follow-up CT scan showed a total aortic remodeling without aortic dissection. Results from the ADSORB trial suggest better aortic remodeling outcomes with TEVAR plus medical therapy over medical therapy alone, 1 year after dissection. In the INSTEAD trial about the benefit of differed TEVAR in survivors of uncomplicated type B aortic dissection, TEVAR didn't improve 2-year survival and adverse event rates, despite better aortic remodeling.

Despite better aortic remodeling outcomes with surgery or endovascular treatment described in the published literature, total aortic remodeling after dissection is possible with medical therapy if a rigorous control of the blood pressure is achieved.

ROLE OF POOR RUNOFF ON THE OUTCOMES OF POPLITEAL ARTERY ANEURYSM REPAIR

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Keywords: *Popliteal aneurysm, Run-off, Patency*

INTRODUCTION

Popliteal artery aneurysms (PAA) are the most common peripheral artery aneurysms. Open repair of PAA has been the gold standard for treatment. However, with the technological advances, endovascular intervention with a stent graft has become a valid therapeutic option.

AIMS

We aimed to explore the role of poor runoff on the postoperative outcomes of PAA.

METHODS

A retrospective review of our institutional database was done to identify all patients treated for PAA, from 1st December 2019 to 31st June 2022. Symptomatic and asymptomatic PAA >2 cm treated using open surgery or an endovascular procedure were included. Patients' demographics, clinical presentation, imaging modality, runoff vessels, treatment details, and follow-up time were extracted from patients' medical records. Primary outcomes were primary patency, amputation-free survival, and overall survival. Statistical analysis of the data was performed using percentages and odds ratio (OR).

RESULTS AND CONCLUSIONS

We identified a total of 31 patients to include in our analysis. Mean age was 71 years [42-89] and all patients were male. Presentation varied between no symptoms (n=11), intermittent claudication (n=3), pain at rest (n=2), trophic lesions (n=3), compressive symptoms (n=2), and acute ischemia (n=10). Diagnosis and assessment of the run-off vessels was done through angiography (n=6), CTA (n=21), or doppler ultrasound (n=4). Mean PAA size was 36mm [20-79]. 12 (38.7%) patients had 1 run-off vessel and 19 (61.3%) patients had ≥2 run-off vessels. Only 4 (12.9%) patients were treated with endovascular procedures, and the remaining 27 (87.1%) with open surgery (24 (89%) with classic femoral-popliteal bypass and 3 (11%) with graft interposition by posterior approach; 20 (74%) used vein and 7 (26%) prothesis as a conduct). Loss to follow-up occurred with 27 patients present at 3 months, 19 patients at 6 months, and 13 patients at 1 year. Primary patency was respectively 80.0% vs 88.24% (OR=1.88; CI[0.22;15.93]; p=0.613), 50.0% vs 80.0% (OR=4.0; CI[0.39;41.23]; p=0.272), and 66.67% vs 70.0% (OR=1.17; CI[0.074;18.35]; p>0.999) for patients with 1 run-off vessel versus patients with ≥2 run-off vessels, at 3 months, 6 months and 1 year. Amputation-free survival and overall survival were also higher in the group of patients with ≥2 run-off vessels in this follow-up period.

This single-centre retrospective analysis showed worse outcomes after PAA repair in patients with only one run-off vessel, with lower primary patency and amputation-free survival rates. Further investigations with longer follow-up are warranted to better understand the role of poor run-off on the post-operative outcomes of PAA repair.

CARACTERIZACIÓN EPIDEMIOLÓGICA, CLÍNICA Y DEL TRATAMIENTO QUIRÚRGICO DEL TRAUMA VASCULAR PERIFÉRICO

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Keywords: *Trauma vascular periférico, lesiones vasculares extremidades superiores, extremidades inferiores*

INTRODUCTION

A descriptive observational study of a case series was carried out with the purpose of describing the clinical and epidemiological characteristics and surgical treatments of patients with peripheral vascular trauma treated in the emergency department.

angiology and vascular surgery of the saturnino Lora Torres surgical clinical hospital in Santiago de Cuba in the period from September 2018 to October 2021. It was made up of patients between 20 -59 years with a diagnosis

of peripheral vascular trauma. A random sample of patients of size n = 55 graduated from said hospital institution with 79.2% male and 21.8% female with urban origin with signs was selected.

Obvious signs (hard signs) of vascular injury such as signs of distal ischemia and active hemorrhage, expansive hematoma, absence of distal pulses, fremituses or murmurs, and soft signs such as proximal arterial tract injury, palpable pulse but weak, peripheral neurological deficit with bleeding clinical form, acute arterial ischemia, shock, dry wound, pulsatile hematoma that can be open, closed and iatrogenic located in upper and lower limbs. It has been made

doplex, duplex ankle arm index, arteriography, angiography. medical and surgical treatment is applied and few of the patients have complications after surgery that allow reintervention in case of bleeding, compartment syndrome,

arterial thrombosis, local sepsis or amputation during the study the improvement of the patients evolves satisfactorily a total of 7 patients were left with functional and anatomical limitations.

CASE REPORT: SPONTANEOUS RUPTURE OF THE SUBCLAVIAN ARTERY

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Keywords: *Rupture, Subclavian artery, Neurofibromatosis*

INTRODUCTION

Spontaneous rupture of an artery is a rare, but often life-threatening event. It often occurs in connective tissue disorders, vascular tumoral invasion, arteriovenous malformations and, more rarely, in other diseases, such as Neurofibromatosis type 1 (NF-1).

NF-1 is an autosomal dominant disease that affects 1 in 3000 individuals, but vascular involvement occurs in only 0,4-6,4% of these patients, most of which are asymptomatic. When symptomatic, it can manifest as aneurysms, stenosis or arteriovenous malformations. There are several theories concerning the pathogenesis of these lesions, nevertheless the most frequent histologic pattern is fibromuscular dysplasia with predominance of intimal thickening.

RESULTS AND CONCLUSIONS

A 47-year-old male, with history of NF-1, presented to the emergency department with sudden onset of right chest pain and dyspnea. On admission, the patient was pale and tachypneic, but hemodynamically stable. On the physical examination, multiple café-au-lait spots and skin neurofibromas could be observed in the thorax and abdominal wall, with tenderness on palpation of the right parasternal area.

The chest x-ray revealed a pleural effusion and an angio-CT was requested, which showed an iv-contrast leak in the posterior aspect of the right subclavian artery, immediately distal to the origin of the vertebral artery, with active bleeding and a massive hemothorax.

The CT also showed a paravertebral lesion, apparently solid and nodular, adjacent to the right subclavian artery at the level of the bleeding.

The patient was managed endovascularly with the placement of a covered stent (Viabahn 8x50mm) just distal to the origin of the vertebral artery. After deployment of this stent graft, persistent bleeding remained, so a second covered stent (Viabahn 10x50mm) was placed, covering the ostium of the right vertebral and internal mammary arteries.

A thoracotomy was then performed to evacuate clots and to drain the hemothorax.

The patient remained clinically stable, without neurological symptoms, and was discharged 7 days after admission with dual anti-aggregation.

At 3-month follow-up, the patient is asymptomatic, undergoing study of the mass identified adjacent to the rupture site.

The vascular manifestations of NF-1 are the least common, but the most important cause of morbidity and mortality in these patients. They can be found in arteries of all sizes, from the aorta to arterioles.

There are less than ten published cases of spontaneous rupture of the subclavian artery in NF-1 patients. The spontaneous rupture of a large blood vessel, depending on its location, can be managed endovascularly, with good results, minimizing invasiveness and blood loss.

ONE-STAGE VS TWO-STAGE BRACHIOBASILIC FISTULA CREATION LITERARY REVIEW

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Keywords: *Brachiobasilic fistula, One-stage, two-stage, Haemodialysis*

INTRODUCTION

In recent years the number of patients undergoing haemodialysis has increased worldwide, thus choosing the best access to secure long term patency of the arterio-venous fistula (AVF) is essential. Although brachiobasilic fistulas (BBF) pose as a second line access option, after radiocephalic and brachiocephalic fistulas, there is an ongoing debate on whether they should be performed as a one-stage or two-stage procedure.

AIMS

The aim of this study was to review the published literature regarding this matter and assess patency, maturation and postoperative complications with each technique.

METHODS

This review was performed through Pubmed database and manual online search; all articles published in the last decade comparing or analyzing the outcomes of both procedures were included.

A total of 22 articles were included: 16 retrospective studies, 5 systematic reviews and 1 review article. A total of 4309 BBF were performed (1941 one-stage; 2368 two-stage). Eleven studies seemed to favor the two-stage procedure, 2 favored the one-stage while 9 studies suggested that there were no significant differences between these procedures. Reported successful maturation rate (33%-100% vs 58%-100%), 1 year primary patency (26%-92% vs 13-100%) and secondary patency (44%-93% vs 76%-96%) respectively for one- and two-stage, were similar, with only one systematic review favoring maturation rate and another favoring 1 year secondary patency, both for the two-stage approach ($p<0,05$). Although most studies reported more postoperative complications on the one-stage group, with a trend towards access thrombosis, none of the systematic reviews achieved statistical significance on overall complications. Overall, there was a trend for two-stage procedures in basilic veins with small caliber (<3-4mm). Older age, obesity, smoking and small brachial artery diameter were identified as potential causes for failed access maturation.

RESULTS AND CONCLUSIONS

Despite an overall trend towards favoring the two-stage procedure, most studies failed to show significant differences between one- and two-stage brachiobasilic fistula construction. Clinical decision should be made on a case-by-case basis taking into account patient characteristics as well as urgency to start dialysis.

CHRONIC MESENTERIC ISCHEMIA: TWO DIFFERENT CASES, ONE SINGLE STRATEGY

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Keywords: *Chronic mesenteric ischemia*

INTRODUCTION

Chronic mesenteric ischemia (CMI) is defined as postprandial abdominal pain caused by intestinal hypoperfusion that typically occurs as the result of mesenteric arteries stenosis or occlusion. CMI is a rare condition, more common in women over 60 years of age. The main cause is atherosclerosis.

The classic presentation is postprandial abdominal pain, weight loss and abdominal bruit, but other atypical symptoms may also be present. CMI usually occurs when there is a stenosis of at least two of the three mesenteric arteries. The diagnosis is usually made by doppler Ultrassound and CT angiography. Either open or endovascular revascularization can be considered albeit the last is getting more acceptance due to the minimal invasive nature in this often frail group of patients.

METHODS

Two male patients aged 68 and 62 years-old respectively, presented to the emergency department with blunt abdominal pain aggravated after meals, vomiting and weight loss for several months. Both patients had a history of smoking and cerebrovascular ischemic events.

On CT angiography, the first patient showed stenosis > 70% of the celiac trunk (CT) and superior mesenteric artery (SMA). The second had total occlusion of SMA and a stenosis > 90% of CT.

Both underwent balloon angioplasty and stenting, in the first case of SMA and the second case of CT. Both are asymptomatic and with weight gain two months after treatment.

RESULTS AND CONCLUSIONS

Mesenteric arterial stenoses are very prevalent lesions and most cases remain asymptomatic. A high level of suspicion is needed in cases of postprandial abdominal pain without other apparent cause. Because of the gastrointestinal symptoms, the risk of acute mesenteric ischemia and associated high mortality rates all symptomatic patients should be treated and even asymptomatic ones should be closely followed up.

Duplex ultrasound is the first line diagnostic exam and usually complemented with CTA for pre- operative planning.

Conventional angiography is still considered for diagnose, but is used more often for therapeutic purposes if a stenosis is detected.

Treatment intends to address symptom alleviation and to prevent bowel infarction. Single vessel angioplasty is recommended as a first approach with low complication rates and high success in short term follow-up as seen in our cases. Usually the SMA is the main target for revascularization. In the second case, the CT was treated as the SMA was not technically feasible.

OPEN SURGERY TREATMENT FOR AORTIC CORAL REEF LESION CAUSING MESENTERIC ISCHEMIA: CASE REPORT AND LITERATURE REVIEW

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INTRODUCTION

Coral reef aorta (CRA) is characterized by heavily calcified exophytic plaques that grow into the lumen of the aorta. Malperfusion of the aortic branches can lead to several symptoms, such as intermittent claudication, refractory hypertension, renal impairment, or intestinal angina. The optimal treatment for CRA has not yet been established.

AIMS

We aim to review the literature about clinical presentation and treatment approach of patients with CRA and present a case report in this matter.

METHODS

We describe a case report of a symptomatic coral reef aorta treated with open surgery, with presentation of the radiological and intra-operative findings. We performed a thorough search of the literature using PubMed and Embase databases, using the following combination of key words in our search strategy ((coral reef) AND (aorta) AND (vascular surgery* OR treatment*).

RESULTS & CONCLUSIONS

We present a case of a 68-year-old male patient with previous history of an abdominal aortic aneurysm rupture treated 2 years ago with a Dacron graft replacement, a bilateral femoral endarterectomy for treatment of intermittent claudication, hypertension, and dyslipidemia. He presented with exacerbation of a chronic intestinal ischemia with 1 month evolution of intestinal angina. An urgent CT scan was done, and it showed an exophytic atherosclerotic plaque involving the ostium of the celiac trunk and superior mesenteric artery. The patient was submitted to open surgery for mesenteric revascularization with retrograde aortomesenteric bypass graft with PTFE prothesis. In the first postoperative day, the patient needed reintervention for splenic laceration with hemoperitoneum and hemorrhagic shock, and an open abdominal revision with splenectomy was performed. Intra-operatively, it was found that the aortomesenteric bypass was still patent. Postoperatively, the patient had a great relief of the symptoms, with tolerance for solid diet and regular bowel function. From what we gathered from the literature, both open surgery and endovascular intervention could be a valid therapeutic option for patients with CRA. However, there are less studies for patients treated with endovascular procedures, and open surgery can be the preferred option for some patients, depending on the extent and localization of the calcified lesions.

CRA is a rare condition, but physicians should be aware of this diagnosis in patients with symptoms of mesenteric ischemia because an early intervention can prevent serious future complications. Although it seems to be associated with higher risk for reintervention and post-operative complications, open surgery can be the most suitable therapeutic option, especially for patients with renal or visceral involvement.

SECONDARY AORTOENTERIC FISTULA – CAN EVAR BE A DEFINITIVE OPTION? ON THE PURPOSE OF A CASE

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Keywords: *Aortenteric Fistula*

INTRODUCTION

Secondary aortoenteric fistula (SAEF) is a fearsome and ominous complication of conventional aortic reconstructions associated with significant mortality, especially in frail patients. The gold standard of prosthetic explantation and in situ repair may be a durable option, despite its relevant initial mortality (30 to 40%), which has driven the off-label use of the EVAR technique as part of the treatment.

AIM

The authors report a case of SAEF in a frail patient, which was successfully treated by endovascular intervention.

METHODS

A 74-year-old man, smoker, with ischemic heart disease, aortic valve stenosis, heart failure and a background of conventional surgery for an infrarenal aortic aneurysm, was admitted to the Medical Department for symptomatic anemia in the context of lower gastrointestinal bleeding. During hospitalization, he presented a sudden episode of abdominal pain, abundant hematochezia and shock. An abdominal angioCT was performed and showed a aortic distal anastomotic pseudo-aneurysm, with evidence of an aorto-enteric fistula.

Under local anesthesia and sedation, the EVAR technique was performed via bilateral femoral access with implantation of a bifurcated infrarenal aortic endoprosthesis with bilateral primitive iliac extension (Zenith Alpha), which excluded the aortoenteric fistula.

The postoperative period evolved favorably, under light diet and empirical antibiotic therapy, with no recurrence of gastrointestinal bleeding. Postoperative control abdominal angioCT showed the intervention in good condition. In the follow-up long-course antibiotherapy was maintained and there was no evidence of protesis infection, however, aggressive lung cancer was diagnosed, responsible for death at 6 months.

RESULTS & CONCLUSIONS

Conventional surgery with explantation and in situ reconstruction remains the gold standard, as a definitive treatment. EVAR as a single treatment for aortenteric fistula, yields an important early/midterm infection rate, so it's usually reserved for treatment as a bridging option in the emergent setting, as part of a staged procedure. In frail patients with limited life expectancy EVAR might by a reasonable definitive treatment, as this case illustrates.

POPLITEAL VEIN ANEURYSM: A CASE REPORT

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Keywords: *Aneurysm, Popliteal vein, Deep vein thrombosis*

INTRODUCTION

Although popliteal vein aneurysms (PVAs) are uncommon, they can have significant consequences including deep vein thrombosis, pulmonary embolus (PE), and death.

AIMS

The aim of this study is to report a case of a patient with popliteal vein aneurysm and compare it with the existing literature.

METHODS

We report the case of a 29-year-old woman who previously had a deep vein thrombosis and a pulmonary embolus secondary to saccular left popliteal vein aneurysm discovered by lower limb duplex ultrasound. Aneurysm was treated with open tangential aneurysmectomy and lateral venorrhaphy, with no peri or post-operative morbidities.

RESULTS & CONCLUSIONS

Despite its rarity, due to thromboembolic complications related to PVAs, patients with PE should be checked with venous duplex scanning. Surgical treatment is indicated in all PVAs. Tangential aneurysmectomy with lateral venorrhaphy is the procedure of choice.

RENAL STENTING – IS IT STILL WORTHWHILE? INAUGURAL EXPERIENCE IN A DISTRICT HOSPITAL

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Keywords: *Renal stenting*

INTRODUCTION

Atherosclerotic renal artery stenosis (ARAS) is a recognized cause of arterial hypertension and renal failure. However, randomized trials such as ASTRAL and CORAL have shown limited benefit in renal stenting in the treatment of ARAS.

AIMS

The authors present the initial experience in a district hospital of renal stenting in selected patients with ARAS, appreciating its impact on hypertension and renal function.

METHODS

A retrospective analysis was carried out on a selected group of patients with ARAS greater than 70%, mostly referred from a dedicated consultation, with difficult-to-control arterial hypertension, expressed by systolic blood pressure (SBP) equal to or greater than 155 mmHg and/or need of 2 or more antihypertensive agents with or without renal dysfunction and who underwent renal stent implantation. It was intended to evaluate the impact of renal stenting on SBP and creatinine clearance, in addition to assessing the morbidity and mortality of this intervention performed in a district hospital.

10 patients (5 women and 5 men) with a mean age of 70 years, underwent renal angioplasty with stent implantation (Formula Cook Medical) by femoral access.

After stent implantation, SBP normalized in approximately two-thirds of patients after 3 months, associated with a reduction in antihypertensive therapy. There was an improvement in creatinine clearance in half of the patients, however it was only clinically significant in patients with relevant previous renal dysfunction (Cr greater than 1.5 mg/dl).

There were no cardiovascular morbidity and mortality or major complications of vascular access.

RESULTS & CONCLUSIONS

Our series showed clinical benefit, particularly, in controlling symptomatic hypertensive episodes and reducing the use of antihypertensive drugs. In patients with previous relevant renal dysfunction, the contribution to the improvement of renal function was significant. Our sample is small and the average follow-up is less than one year, so the study is underpowered.

Important randomized trials (ASTRAL and CORAL) did not support the clinical benefit of renal stenting. Despite the known criticisms of these trials, they influenced "real-world" practice. In our opinion, it is important to develop trials with selected cohorts of patients with ARAS with proven significant hemodynamic impact and a clinical context that strongly suggests a benefit in renal revascularization.

RUPTURED VISCERAL ARTERY ANEURISMS: A CASE REPORT

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Keywords: *Visceral artery, Aneurysm rupture, Endovascular therapy*

INTRODUCTION

Although visceral artery aneurysms are rare, with an incidence of approximately 0.01–0.1% in the population, mortality due to their rupture is high. Visceral aneurysms can have multiple causes including atherosclerosis, tunica media degeneration, trauma, vascular inflammatory diseases or infection. Patients with a ruptured visceral artery aneurysm usually present with symptoms such as abdominal pain, full-blown acute abdomen, and signs of shock and sepsis. The manifestations vary, depending on the function of the respective end organ supplied by the aneurysmal vessel. Endovascular therapy is an effective and less invasive option technique for rupture of a visceral artery aneurysm.

AIMS

The aim of this study is to report a case of a patient with a spontaneous rupture of a middle colic artery aneurysm and review the existing literature of visceral artery aneurisms.

METHODS

We report a case of a 40 year-old male patient admitted to our hospital with symptoms of sudden-onset abdominal pain and signs of shock. CT scan revealed rupture of a middle colic artery aneurysm and also a celiac artery aneurysm. The ruptured aneurysm was treated with transarterial coil embolization. After the procedure, the patient evolved well, and was discharged 27 days later.

RESULTS & CONCLUSIONS

In order to prevent mortality and life-threatening complications of visceral artery aneurisms, urgent diagnosis and treatment strategy should be considered. Endovascular procedures are effective for both asymptomatic and ruptured visceral artery aneurysms.

OPEN SURGERY IN THE EVAR ERA - THE OLD "SWISS ARMY KNIVE"

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Keywords: *Evar era*

INTRODUCTION

With low mortality and high feasibility, EVAR is currently the first option for treatment of abdominal aortic aneurysms (AAA) in the modern world. Unsuitability for EVAR is frequently an indication for open surgery.

AIMS

The authors report a case of a large pararenal AAA in a fit patient, outside the indications for use (IFU) for standard EVAR.

METHODS

A 64-year-old man, smoker, was admitted to our district hospital with a large asymptomatic AAA for treatment. The CT angiography study showed an AAA with absence of an infrarenal neck for standard EVAR and complex visceral morphology (accessory renal arteries to be preserved and significant proximity of the visceral ostia). The preoperative study showed physical robustness, so open surgery (OS) was chosen.

Under general anesthesia, he underwent paramedian laparotomy, medial visceral rotation, supra-celiac clamping (24 minutes), interposition of an aorto-biliac prosthesis (Hemagard Getinge) and partial aneurysm resection.

For the first 72 hours postoperative the patient was admitted in the intensive care unit with a transient increase in creatinemia for 48 hours but no cardiovascular complications. On the 5th postoperative day, he was autonomous in his activities and under general diet. An isolated febrile episode (48h) then occurred, so he started empiric antibiotic therapy for 10 days, despite the absence of any bacterial isolation. The patient was discharged asymptomatic, after a postoperative abdominal angioCT showed the intervention in good condition.

RESULTS & CONCLUSIONS

In a few decades, EVAR has gone from being a technique offered to patients with high-risk for OS, to being the method of choice for treatment of patients with AAA. Straightforward infrarenal AAA are usually offered EVAR. Unsuitability for EVAR as pushed the need for higher skills in OS, as nowadays the selected patients for OS tend to be juxtarenal or more proximal. OS for AAA in the EVAR as significantly decreased in overall volume but increased in complexity, requiring more frequently suprarenal cross-clamping, renal/visceral grafting and higher blood loss.

HOW DID SARS-COV-2 PANDEMIC AFFECT THE CASE SERIES OF ACUTE LIMB ISCHEMIA? A TERTIARY SINGLE CENTER EXPERIENCE

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INTRODUCTION

The exceptional situation resulting from the coronavirus disease 2019 (COVID-19) pandemic forced a reorganization of all levels of health care in order to improve the response to infected patients which ended in the postponement of non-urgent surgeries and the temporary suspension of consultations and treatments. Additionally, the governments have imposed measures in attempt to stop de outbreak which had psychological and health impact with cardiovascular risk increase, beyond the consequences of the infection itself.

AIMS

The aim of this article is to understand the impact of the SARS-CoV-2 infection and the adaptations imposed by the COVID-19 pandemic on admissions for acute limb ischemia to our department in the pandemic period.

METHODS

We conducted a descriptive and observational study. A pre-pandemic period was compared with the same period after the beginning of the pandemic. Demographic data, case characteristics, treatments, outcomes and mortality were collected from all admissions for acute limb ischemia in both periods. During the pandemic period, the number of patients infected during hospitalization or with known previous infection was counted with the support of the SINAVE platform.

We observed an increase in the number of admissions for acute ischemia during the pandemic period (26 vs 52 cases) and a longer mean time of symptoms evolution (1,91 vs 2,57 days). A total of 11 SARS-CoV-2 infection cases were reported in this period: five cases were positive during hospitalization in Vascular Surgery department and six patients had already had SARS-CoV-2 infection in the past. There were 9 cases of early recurrence of acute limb ischemia in the pandemic period which included four cases in patients with previous COVID-19 infection (mean time between infection and acute event of 28,25 days) and two cases in positive patients compared to one case in the pre-pandemic period in a patient with an active carcinoma. Three of the four patients underwent reintervention with successful revascularization. The fourth patient presented with irreversible ischemia and for that was amputated.

RESULTS & CONCLUSIONS

Since SARS-CoV-2 is a relatively novel virus, there is still many unanswered questions about the consequences of the SARS-CoV-2 infection and the pandemic period, especially in long-term period. The effect of a previous infection on thrombotic risk is unknown. It remains unclear whether the cases of early recurrent thrombosis are related to a previous infection or it's just an incidental finding. More research for long-term health outcomes is needed to clarify.

STENT EXCLUSION OF A MYCOTIC RENAL ARTERY ANEURYSM BY USE OF A COVERED CORONARY STENT SYSTEM

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INTRODUCTION

Mycotic aneurisms are uncommon. The visceral arteries are the most unusual site and rupture is often associated with life-threatening hemorrhage.

METHODS

Clinical case: We present a case of a visceral mycotic aneurysm located in the left superior segmental artery, branch of the renal artery, in an immunosuppressed patient with positive blood cultures for Salmonella enteritis. The aneurysm showed a growth from about 9 mm to 25 mm in four weeks. It was excluded with a 3,5x20mm monorail balloon-expandable covered stent (PR Papyrus(R)) that is typically used by cardiologists for the treatment of acute coronary perforations. The final angiogram showed complete exclusion and preservation of the branch and the procedure had no perioperative complications.

RESULTS & CONCLUSIONS

The capability of technical adaptation to achieve a better solution with no risk increase is a constant in the clinical practice of vascular surgeon. The monorail balloon-expandable stent delivery system provides rapid introduction of the device over the guidewire, and its low profile facilitates the use of small sheaths to minimize access-site complications.

A LARGE, COMPLEX AND MULTIPLE SPLENIC ARTERY ANEURISMS ENDOVASCULAR TREATMENT: A CASE REPORT AND LITERATURE REVIEW

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INTRODUCTION

Despite splenic artery aneurysms (SAA) represent a rare clinical entity, they have been established as the most common of the visceral artery aneurysms. SAA are seldom bigger than 3 cm and those larger than 10 cm are extremely rare and considered to be giant. Complications of SAA can be life threatening and include the spontaneous rupture which may lead to severe retroperitoneal hemorrhage and death. Although the indications to treatment are clear, there is still debate on the first-choice technique specially on the treatment of the hilar splenic aneurisms.

AIMS

We reviewed the literature and treatment options and present a case of a saccular hilar splenic aneurism and the endovascular approach for its primary repair.

METHODS

Clinical Case: An 84 old woman was referred to our institution after incidental diagnosis of a large splenic hilar aneurism with 6x4 cm; beyond that, she presents with a very tortuous and redundant artery which have two more smaller aneurisms on this course. The large size of the aneurysm was indication for treatment. The patient underwent a challenging endovascular treatment with coil embolization with no peri-operative or post-operative complications, with discharge two days later. Follow-up CT confirmed the success of the procedure.

RESULTS & CONCLUSIONS

This case is an example of the benefit that endovascular treatment brings to clinical practice. With a lower morbidity and faster recovery we were able to offer a definitive treatment with a minimal invasive approach. In addition to endovascular options and conventional surgery, there are also laparoscopic and robotic surgery which represent a valid choice to treat SAA in accordance with the available literature. It is up to each vascular surgeon to adapt the best technique to the patient's profile and anatomy according to personal preference and experience, but multidisciplinary teams, with vascular and general surgeons skilled in robotic and laparoscopic procedures, could allow to offer a tailored treatment for each patient.

AN NON COMPLICATED BUT HIGH RISK AORTIC DISSECTION CASE

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Keywords: *Aortic dissection, TEVAR, Aortic debranching*

INTRODUCTION

Current evidence supports medical treatment (antihypertensive drugs and analgesia) for the acute phase of uncomplicated type B aortic dissections (TBAD), being surgery used only in complicated TBAD cases.

When compared to medical therapy alone, endovascular surgery for TBAD performed in the acute and subacute settings increases aortic remodeling and long-term survival and decreases late complications. However, it is associated with significant morbidity and mortality, which is significantly higher in the acute phase. In recent years, attempts have been made to define "high-risk" factors for developing late complications and to identify patients who benefit from this treatment in the subacute phase.

AIMS

TA 67-year-old woman with a history of poorly controlled hypertension presented with sudden-onset chest pain with irradiation to her back. She was hypertensive and tachycardic, didn't have pain at abdominal palpation and the distal pulses were palpable. CTA showed TBAD originating in the descending thoracic aorta, extending proximally to the left subclavian artery and extending distally to the distal segment of the descending thoracic artery. As it was considered an uncomplicated TBAD, medical treatment and surveillance were instituted.

METHODS

On the 3rd day, due to pain and refractory hypertension, CTA was repeated and showed no progression. On the 10th day, due to new-onset pain, another CTA was performed, showing no evolution of the dissection, but with partial thrombosis of the false lumen and dilation of the descending thoracic aorta at the level of the entry port (42 mm). As this is a case of TBAD with high-risk factors (recurrent pain, aortic diameter >40mm, growth >1cm during the acute phase), the patient was proposed for surgical treatment in the subacute phase.

On the 21st day, she was submited to surgery: debranching of zone 2 and implantation of a plug at the origin of the left subclavian artery. The following week (28th day), a chest endoprosthesis (TEVAR) was implanted in zone 2. The surgeries and postoperative period were uneventful and the patient was discharged on the 31st day.

Control CTA at 1 month revealed total thrombosis of the false lumen, with overlapping aortic diameter.

RESULTS & CONCLUSIONS

In the subacute phase, endovascular surgery for TBAD has the same benefits as in the acute phase, with significantly lower morbidity and mortality rates. In cases of TBAD with high risk factors and anatomy favorable to endovascular surgery, surgical treatment in the sub-acute phase should be considered due to the long-term benefits.

FULMINANT PHLEGMASIA CERULEA DOLENS IS REAL AND LIMB AND LIFE-THREATENING

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Keywords: *compartment syndrome, limb ischemia, phlegmasia cerulea dolens, thrombectomy*

INTRODUCTION

Phlegmasia Cerulea Dolens (PCD) is a rare manifestation of deep vein thrombosis involving extensive venous obstruction with impending limb loss due to extreme levels of venous hypertension.

AIMS

To describe a clinical case of a fulminant PCD in a young woman.

METHODS

A 23-year-old woman presented at the ER with progressive 24-hour ongoing right leg painful swelling associated with livid discoloration and sensory motor limb impairment. Past medical history didn't reveal venous thromboembolic events. She was smoker and was on oral contraceptive.

On admission the patient presented conscious, eupneic, with a blood pressure of 118/92mmHg, heart rate of 121 bpm and oxygen saturation of 98% breathing air ambient. Physical examination revealed a cyanotic painful swelling of the right lower extremity, without popliteal pulse. Motor function was impaired with foot dropping. The sensation was impaired on the leg and anesthesia of the foot was present. Duplex ultrasound revealed right ileofemoral thrombosis. Peak systolic velocity at the popliteal artery was 30cm/seg with monophasic profile. There was no blood flow in the distal tibial arteries.

After systemic heparinization, the patient underwent emergent surgical thrombectomy followed by venography. It revealed a high-grade stenosis of the right common iliac vein, that was treated with stenting. The patient underwent immediate fasciotomies of the leg. In the immediate postoperative period there was reduction of the venous congestion with partial recovery of sensory and motor impairment. About 6 hours after surgery, sensory and motor extremity worsened associated with painful tight tension, hemodynamic instability and rhabdomyolysis. It was performed tight fasciotomies. The patient was admitted in a ICU for 16-days with need of vasopressor support and renal replacement therapy with favorable evolution. The patient recovered distal arterial pulses and partial sensory and motor function. It was noticed delimitation of segments of muscular necrosis of all fasciotomies. It was performed muscular surgical debridement, direct tight fasciotomies closure and leg fasciotomies closure with cutaneous graft. The patient is still hospitalized one month later, healing the wounds and under rehabilitation.

RESULTS & CONCLUSIONS

In this case multifactorial risks may had contributed to the severe fulminant presentation. The choice for surgical thrombectomy was based on the imminent limb loss risk. Reperfusion injury after surgical thrombectomy and angioplasty played a significant role in the life-threatening condition and the worsening of status limb function.

BEST MEDICAL TREATMENT IN PATIENTS WITH ASYMPTOMATIC CAROTID STENOSIS: MYTH OR REALITY?

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Keywords: *Carotid stenosis, Asymptomatic, Best Medical Treatment*

INTRODUCTION

Approximately 1.4 million strokes/year causing about 1.1 million deaths annually occur in Europe and 10-15% of those strokes are result of thromboembolism from a previously significant asymptomatic carotid stenosis (ACS). Medical treatment has improved considerably in the last 15 years however its success depends on patient compliance.

AIMS

The aim of our study was to evaluate, in patients with ACS, the implementation and patient adherence to best medical treatment (BMT). Additionally, we sought to determine the "real world" incidence of cerebrovascular/coronary events in a cohort of non-operated ACS patients and weighing this risk against surgical complications in patients with ACS undergoing surgical treatment at our Department.

METHODS

Patients with ACS ≥ 60% identified by a carotid ultrasound performed at our Department were retrospectively evaluated. Patients selected to BMT were excluded if the follow-up period was inferior to 2 years, as well as patients lost in follow-up, with missing clinical information and submitted to carotid stenting. Patients data collection was supported by hospital reporting system and data were introduced into a database created for the purpose. Statistical analysis was performed using SPSS-25 software.

RESULTS & CONCLUSIONS

After exclusion criteria were applied, the last 120 consecutive patients (60 with ACS submitted do carotid endarterectomy and 60 with ACS under BMT) were retrospectively evaluated. 21 patients had had ipsilateral events for more than 6 months. Most patients had hypertension (n=107; 89%), dyslipidemia (n=101; 84%), 40% had diabetes, 33% diagnosed coronary disease, 32% were overweight or obese and 17% were current smokers. Blood pressure control, normal weight, statin with/without ezetimibe association and antiaggregant therapy was only achieved in 33 patients and only 5 had additionally low-density-lipoprotein levels < 70 mg/dL, hemoglobin A1c < 7% and were non-smokers. Of the 60 patients assigned to medical treatment, 3 (5%) had a stroke at 2 years follow-up, which was fatal in 1 patient. Among patients submitted to carotid endarterectomy perioperative stroke was documented in 3% of the patients, none of them disabling or fatal.

Although some recent studies report a risk of ipsilateral stroke of only 0,34% per year in patients with ACS ≥ 50% under BMT therapy in our everyday practice strict compliance to medical treatment fails in the majority of the patients. In consequence, we think that a "one-size-fits-all" guideline policy may not be appropriate for all patients and the management of specific ACS patients may need to be individualized.

ACUTE MESENTERIC ISCHEMIA: PREDICTORS OF IN-HOSPITAL AND MEDIUM AND LONG TERM MORTALITY

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Keywords: *Isquemia mesenterica aguda*

INTRODUCTION

Acute mesenteric ischemia (AMI) is life-threatening if not identified and treated early with high associated mortality (60-80%). Early diagnosis with contrast-enhanced CT and revascularization can reduce the overall mortality by up to 50%. Our aim was to evaluate the results of our single tertiary center in the approach of patients with acute arterial occlusive mesenteric ischemia (AAOMI) and identify variables associated with higher mortality.

AIMS

We conduced a retrospective cohort study of patients with at least one AAOMI, who were admitted to a single hospital, during a 5-year period (2017-2021). Patients were identified by ICD10/9 codes and case-by-case analysis of patients registered in the general surgery and vascular surgery operating room. Were included only patients with AAOMI. Were excluded AMI with other etiology, chronic MI, ischemic (left) colitis and small bowel strangulation. Data was obtained from electronic health records. Descriptive and bivariate analyses were used to assess factors related to 3, 7, 30 and 365-days mortality. Logistic regression was used to estimate associations (odds ratio). Survival analysis was used to obtain Kaplan-Meier curve.

METHODS

In this period 45 patients with AAOMI were diagnosed. 66.7% were female with a median age of 79 years old. The most frequent clinical complain was abdominal pain (93%). Leucocitosis and renal disfunction were associated with higher mortality at 7 ($p=0.016$; OR 7.2; $p=0.018$; OR 7.58), 30 ($p=0.038$; OR 3.6; $p=0.012$; OR 5.25), 365 days ($p=0.041$;OR=4.8 $p=0.005$;OR=19.3). Median time since beginning of symptoms was 12hours and between arrive at emergency department and beginning of surgery was 9 hours. Patients that went to hospital early had reduced mortality at 3 days ($p=0.013$; OR5.89). 45.6% patients were submitted to revascularization: 33.3% by endovascular and 66.7% by open surgery. 27.3% were submitted intestinal resection and second look laparotomy. The mortality at 72 hours, 7 and 30 days and 1 year was 40%; 51.1 %, 60.4% and 69.8% respectively. Endovascular revascularization was associated with a reduced risk at 30 days mortality ($p=0.024$).

RESULTS & CONCLUSIONS

AAOMI should be managed by a multidisciplinary team (general surgeon, vascular surgeon and intensivist). Timing-based management protocols that emphasize early referencing to a multidisciplinary team should be established. The aim should be revascularization, preserve as much bowel as possible and remove the non-viable bowel, which can lead to multisystem organ failure. Endovascular treatment has improved the management of AAOMI and it must be adopted when possible (particularly in patients without bowel necrosis). Close monitoring for bowel necrosis is essential.

CAROTID ENDARTERECTOMY WITHIN THE TRAINEE PERFORMANCE LIABILITY

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Keywords: *carotid endarterectomy, patient outcomes, stroke, morbimortality*

INTRODUCTION

Carotid endarterectomy is a procedure any vascular surgeon should master and for that to be achieved surgical training is essential, this training needs to be balanced with the expectation of poorer outcomes led by surgical trainees, making this balance a focal concern of patient safety.

AIMS

This retrospective study assesses the impact of having a surgical trainee performing this procedure on the post-operative rates of stroke and death.

METHODS

Consecutive patients, who underwent carotid endarterectomy between 01/05/2016 and 31/7/2022, were entered into a retrospectively database. Patients were stratified into two categories – consultant-led cases and trainees-led cases. Primary outcomes were 30- day stroke rate, and 30-day morbimortality. We performed a sub analysis and grouped the patients in whether there was a neurological event in the previous six months – symptomatic or asymptomatic. Differences between groups were assessed using multivariate analysis, adjusting for potentially confounding covariables.

RESULTS & CONCLUSIONS

Three-hundred-and-eighty-one patients, with a mean age of 70.1 years, and 82.4% being male patients, underwent carotid endarterectomy over a 6.5-year period. They were grouped into two categories consultant ($n = 246$) or trainee ($n = 135$). The median clamping time was 13.9 min, being shorter in the consultant group with statistically significant difference ($p < 0.001$). In terms of patient outcomes, in respect to hematomas rates (with need for surgical drainage), 2.2% and 4.4% for trainees and consultants, respectively, no statistical difference was reached. The overall 30-day-mortality was 2.1%: 1.5% in the trainees' group and 2.4% in the consultants' group ($p=0.79$) whereas the 30-day stroke rate was higher in the trainees group: 5.2% comparing to 2% in the consultants' group ($p<0.05$). When accounting for 30-day cardiac events, 30-day stroke and 30-day mortality, overall morbimortality was 4.2%, in which trainees had a 6.6% rate and consultants a 2.8% rate ($p<0.001$). Therefore, after performing a sub analysis of the groups, these results were owned to the difference noted in the asymptomatic patients ($p<0.05$) leading to a higher morbimortality in the trainees group.

Future multicenter data research is essential in this setting to assess more accurate outcomes, since individual centers carry smaller numbers of operations. Another limitation of the study is the reliance upon accurate data collection due to the study's retrospective design. This study makes us wonder if asymptomatic patients should be operated by a trainee, since the acceptable death/stroke rate is lower.

DESCENDING THORACIC AORTA TO FEMORAL AND ILIAC ARTERY BYPASS IN A PATIENT WITH CORAL REEF AORTA

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Keywords: *Descending thoracic aorta, coral reef aorta, aortic bypass, case report*

INTRODUCTION

In the literature, bypass from descending thoracic aorta (DTA) has been described as a remedial operation in patients with hostile abdomen conditions contraindicating the transabdominal approach. Here we present a case of a patient with coral reef aorta, a rare condition, where the pathogenesis and etiology are yet to become clear, characterized by exophytic, irregular and heavily calcified plaques, mostly located in the suprarenal and juxta renal aorta. Either open surgery or endovascular treatment or a combination of both are previously described.

CASE REPORT

A 73-year-old female was referred to our department presenting with incapacitant claudication on both lower limbs. Past medical history revealed uncontrolled high blood pressure and diabetes mellitus. On the physical examination absence of femoral pulses was noted. Abdominal computer tomography (CT) revealed a heavy calcified juxta renal aorta with a pre occlusive aortic lesion on the left renal artery level. Endovascular treatment was attempted, however, while performing the angiography, it was decided to be a very high-risk procedure that could compromise the visceral arteries. A retroperitoneal celiac aorta approach was tried but deemed to unsuccess since a secure aortic clamping was not safe owning to the calcified lesions on this level.

After one week, with the patient in a right semi-lateral position and intubated with a double-lumen endotracheal tube, allowing deflation of the left lung, a posterolateral thoracotomy through the eighth intercostal space, continued through the previous incision, was performed. Then, the distal DTA, right common iliac and left common femoral arteries were exposed. After partial clamping of the DTA, a bifurcated DACRON graft was tunneled through the left retrorrenal space and anastomosed to the aorta in an end-to-side fashion. Distally, the graft was anastomosed to the right common iliac artery and the left common femoral artery. Left renal artery bypass with DACRON graft (6mm) was also carried out. After placing a chest tube in the left pleural space all incisions were closed. Postoperative course was uneventful, and the patient was discharged 10 days after surgery.

DISCUSSION & CONCLUSIONS

Even though, DTA inflow is only 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.

ANGIOJET SYSTEM AS A RESCUE OPTION TO PERMEABILIZE THE DEEP FEMORAL ARTERY: A CASE REPORT

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Keywords: *AngioJet, Lower Extremity Ischemia, Revascularization, Endovascular Procedure*

INTRODUCTION

Treatment of critical lower extremity ischemia (CLI) remains a clinical challenge. Acute limb ischemia is even a more challenging situation in a CLI environment. The multiple forms of presentation in a previously treated patients and the complexity of their treatment make it interesting to know all the available options.

AIMS

Clinical case report and review of the literature on rescue revascularization options in acute deep femoral artery thrombosis.

CASE REPORT

A 73-year-old diabetic man with multiple revascularizations of both lower limbs came to the emergency department for severe right lower limb pain. During last hospitalization in vascular surgery, a femorodistal bypass with PTFE was performed. This femorodistal bypass was connected to a previous reconstruction of femoral bifucartion performed with a PTFE graft from the common femoral artery to the deep femoral artery. In outpatient clinic follow up femorodistal bypass was informed as occluded some 6 months after previous surgery.

The patient reported 5 days evolution of severe pain not controlled with analgesia. He was admitted to our unit and a Duplex ultrasound + AngioCT scan was requested. AngioCT findings: Thrombosis of the previous femorodistal bypass (already noted in previous outpatient clinic follow up) and de novo acute thrombosis of the deep femoral artery graft were observed. Profunda femoris repermeabilization was too distal to consider a new bypass surgery. Due to the limited revascularization options, we decided to proceed with endothrombectomy using the angioJET system. Emergency thrombolysis and 24h fibrinolysis procedure was performed. These emergency procedures resulted effective in achieving permeability of the deep femoral artery. A distal anastomotic stenosis was found as the potential cause for deep femoral graft thrombosis and so a drug coated balloon was used to dilate this stenotic lesion with good angiographic result.

RESULTS

After the intervention, triphasic flow was observed in the popliteal artery and monophasic flow in the peroneal artery. During the immediate postoperative period, the patient evolved positively, achieving remission of rest pain in the extremity.

CONCLUSION

Endovascular treatment of the deep femoral artery remains as infrequent as controversial, even nowadays. However, in extreme cases, with marginal revascularization options, unusual indications can be considered and could represent the only limb salvage option available. In our case, endothrombectomy of the deep femoral artery graft with the angioJET system achieved repermeabilization of the artery and thus an improvement in the patient's symptoms. As a comment, unconventional situations frequently can require unconventional treatments

10 YEARS OF ABOVE-THE-KNEE AMPUTATIONS: ARE WE SAVING MORE LIMBS?

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Keywords: *Major limb amputation, Above knee amputation*

INTRODUCTION

Lower extremity amputations are significant complications peripheral artery disease (PAD). It implies a reduced quality of life and approximately three-fold higher risk of mortality than people who have not undergone a major amputation.

Changes in demographic factors, and in the prevalence of risk factors (as well as advances in clinical care) may have altered the prevalence and incidence of above-the-knee (AK) amputations.

Studies suggested a decline in major amputation rates, despite rising prevalence of other risk factors for PAD.

Development of newer lower extremity endovascular techniques have changed therapeutic approach to PAD. However, it isn't clear whether these changes translate into improvement in limb preservation.

AIMS

The purpose of this study was to report our centre's changing trends in revascularization treatment and evaluating whether these changes resulted in decreasing AK amputation rates.

CASE REPORT

A retrospective analysis was performed of all patients submitted to AK amputations from August72012 to August 2022 due to chronic limb threatening ischaemia (defined as presenting with ischemic rest pain, non-healing ulcers and gangrene (Leriche-Fontaine category III and IV)). Patients submitted to AK amputations due to an acute limb ischaemia event were excluded.

A total of 313 AK amputation procedures were registered: 207 in men (66.1%) and 106 (~33.9%) in woman.

In the first year period of this study, a total of 50 AK amputations were made and 44% of patients had previously been submitted to a revascularization procedure(s) (with a total of 50 endovascular and 50 surgical procedures). One year mortality rate was 42%. A total of 2 patients achieved prothetization (4%).

In the nineth year period of this study, a total of 24 AK amputations were made and 42% of patients had previously been submitted to a revascularization procedure(s) (with a total of 24 endovascular and 24 surgical procedures). One year mortality rate was 50%. A total of 2 patients achieved prothetization (8.3%).

In the tenth year period of this study, a total of 23 AK amputations were made and 45,8% of patients had previously been submitted to a revascularization procedure (with a total of 23 endovascular procedures and 23 surgical procedures). A total of 3 patients achieved prothetization (13%). No mortality data available yet.

RESULTS AND CONCLUSIONS

A descending trend could be observed regarding the number of AK amputations throughout the years despite a relatively stable number of comorbidities such as diabetes or smoking history.

IN SITU FENESTRATION OF AORTIC ENDOGRAFT IN A PARARENAL AAA – CLINICAL CASE

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Keywords: *In Situ Fenestration; Pararenal AAA*

INTRODUCTION

Hostile proximal aortic neck anatomy is a key fator that significantly impacts endovascular aortic aneurysm repais (EVAR) durability.

Despite unquestionable technical advances on fenestrated and branched endografts, not all the cases are similar and there are factors (other than anatomy) that may challenges treatment options. In situ fenestration (ISF) of standard endografts represents an endovascular mean to treat some particular cases, maintaing perfusion of visceral branches.

AIMS

To describe a clinical case of a in situ fenestration of Aortic Endograft in a Pararenal Aortic Aneurysm.

METHODS

Based in clinic report.

RESULTS - CASE REPORT

Male, 85-year-old, with relevant past medical history of myocardial infarction, DDDR Pacing, high blood pressure, chronic kidney disease presented at the emergency room with abdominal pain with 1 month of evolution.

At clinical examination, the patient was normotensive, normocardic and had a epigastric pulsatile mass with light abdominal pain at profound abdominal palpation.

Laboratory results showed an stable haemoglobin (Hb) of 12.8 g/dL, urea 120 mg/dL, creatinin 2.18 mg/dL, GFR 27 mL/min/1.73.

CT-angiography showed an 8 cm Left Pararenal AAA, with no evidence of rupture, and characterised by an inadequate proximal landing zone, as the main left renal artery emerged directly from the aneurysm.

Given the patient's age, frailty, and complex anatomy, an endovascular approach was favored. Assuming the aneurysm as symptomatic, costumized options were discharged (due to time constraints). As the right renal artery was 1cm distant from the aneurysm and had an aceptable diameter to allow an adequate sealing zone, exclusion of the aneurysm was done using a Endurant IIs device, with back-table fenestration and stent-graft placement into the left renal artery.

Control angiography showed good endovascular positioning, visceral and renal vessels patency and no Endoleak. 30 days control CT-angiography showed total AAA exclusion, left renal patency and no Endoleak, with no worsening of previous renal function.

RESULTS - CASE REPORT

This case describes an alternative approach for managing a pararenal aortic aneurysm in the urgent setting with in-situ fenestration and stenting of the left renal artery. There were no intraoperative complications and good 30-day outcomes. Currently, several novel approaches to endovascular management of aortic aneurysms are being explored, and several groups have described back-table fenestration, an approach that relies heavily on precise preoperative imaging, exact measurements, and device deployment.

Larger series with long-term follow-up will be necessary to enhance our understanding of apprpriate patient selection for this technique.

THE ROLE OF REVASCULARIZATION IN ERECTILE DYSFUNCTION PARADIGM – CASE-SERIES ANALYSIS AND LITERATURE REVIEW

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Keywords: *erectile dysfunction; revascularization ; urology ; case-series*

INTRODUCTION

Erectile dysfunction (ED) is an important health issue which is defined as the recurrent inability to achieve and maintain an erection satisfactory for sexual intercourse. Although ED is not a life-threatening medical problem for men, successful treatment has a strong impact on quality of life. The etiology of ED is multifactorial but in many cases the cause is vasculogenic and is related to inadequate arterial inflow during arousal.

AIMS

Since up to 50% of men have a suboptimal response to PDE5i and since subsequent therapies tend to be cumbersome and uncomfortable, there is a clinical need for additional therapies. Prior investigations have shown that significant obstructive atherosclerotic disease may be seen angiographically in the iliac, internal pudendal and cavernosal arteries in men with ED. The aim of this study is to describe the angiographic characteristics of pelvic arterial disease in patients with ED and evaluate the potential of current percutaneous revascularization techniques as a treatment, doing a literature review based in a clinical case series.

METHODS

A series of four (men; mean age 58 ± 5 years) ED cases were evaluated multidisciplinary between urology and vascular surgery and surgically managed by percutaneous transluminal angioplasty (PTA). Patients underwent previous penial echography with doppler which revealed morphological and structural normality of the corpora cavernosa. Endovascular therapy was carried out in ED patients not responsive to PDE-5-inhibitors. Intracavernosal prostaglandin administration was not considered in the protocol.

RESULTS AND CONCLUSIONS

All the analyzed cases were submitted to endovascular repermeabilization on the internal iliac artery (IIA) bilaterally with balloon by a subocclusive stenosis at its origin. Most of patients had the traditional cardiovascular risk factors, being acute myocardial infarction reported twice. At final follow-up, the mean International Index of Erectile Function (IIEF-5 score) improved significantly by about 14.37 points (25 scale) points and the perception of overall satisfaction was high. The doppler control exam mean improvement was significantly improved. Just one case was less satisfactory (3 points) as the patient had a unilateral total occlusion of the IIA that could not be revascularized. Percutaneous revascularization technique represents an excellent ED alternative treatment when the common causes have been excluded and primary therapies have been ineffective. However, the success of endovascular treatment may be intrinsically dependent on the pattern of arterial lesions seen in ED patients. Furthermore, ED may be a sign of generalized endothelial dysfunction and obstructive arterial disease, being a predictor of overall cardiovascular mortality.

PERCUTANEOUS ULTRASSOUND GUIDED DIRECT EMBOLIZATION TO TREAT SPONTANEOUS RETROPERITONEAL HEMATOMA IN A COVID-19 PATIENT

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Keywords: *retroperitoneal hematoma, percutaneous embolization, thrombin*

INTRODUCTION

Introduction COVID-19 is a well-known pro-thrombotic state, though a tendency to hemorrhagic complications have also been described. Spontaneous retroperitoneal hematoma has been reported in patients with severe disease under prophylactic anticoagulation treatment. Despite potentially life-threatening, most resolve with anticoagulation reversion and support measures. The need for intervention is frequently complicated by the high frailty and surgical risk of these patients.

AIMS

We present a case of a COVID-19 patient that complicated with a life-threatening spontaneous retroperitoneal hematoma successfully treated with a bed-side low surgical risk procedure.

METHODS

A 73-year-old female, anticoagulated with enoxaparin for previous pulmonary embolism was admitted with severe SARS-CoV2 infection. On day 7 of hospitalization the patient complicates with hemodynamic shock associated with right lumbar pain and a drop in serum hemoglobin from 11,3 to 4,8mg/dL. The angio-CT shows a voluminous retroperitoneal hematoma with right ilio-psoas muscle involvement, without identifiable culprit hemorrhagic vessel. The enoxaparin was suspended and partially reverted with protamine sulfate and supportive measures with fluid resuscitation and red blood cell transfusion were initiated. Despite these measures the patient remained clinically unstable and the control angio-CT revealed hematoma expansion and persistent blush. As there was no identifiable bleeding vessel and given the critical state with high surgical risk the patient was no candidate for surgical or endovascular intervention. In this scenario we performed a bed-side percutaneous ultrasound-guided hematoma puncture with a 18G and 35cm long stainless steel needle (Cook® – Cope Loop Nephrostomy Set) followed by injection of 10,000IU/vial Human Thrombin VH S/D Lyophilised under local anesthesia. The patient recovered hemodynamic stability within the first 24h with hemoglobin recovery and no need for additional blood transfusion. The control-CT was repeated on the 8th after the procedure, showing a significant reduction of the hematoma volume.

RESULTS AND CONCLUSIONS

Anticoagulation can be difficult to manage in the COVID-19 patients because of the both additional pro-thrombotic and hemorrhagic risk. Spontaneous retroperitoneal hematomas are one the most reported hemorrhagic complications and frequently there are no obvious solutions when they don't resolve with conservative management. Many of these patients won't tolerate a surgical approach and the alternative endovascular embolization implies the identification of a target vessel which can be time consuming in a life-saving situation. In this report we present a low-risk bed side procedure that can solve a potentially life-threatening event. To our knowledge this technique has not been previously described as an alternative treatment to retroperitoneal hematomas.

TREATMENT STRATEGIES AND OUTCOMES OF THORACIC AORTIC BLUNT INJURIES IN ADULTS: A SYSTEMATIC REVIEW

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Keywords: *Aortic, Thoracic, Blunt trauma, TEVAR*

INTRODUCTION

Mortality rates of blunt thoracic aortic injury (BTAI) up to 32% can be found in literature. Those rates have lowered since TEVAR emerged as the preferred treatment for patients with BTAI, replacing open aortic repair. However, there is uncertainty concerning long-term device related complications and device integrity in the aging aorta. Additionally, the question on which injuries require endovascular repair remains a subject of debate across different societal practice guidelines.

AIMS

To evaluate treatment strategies of BTAI according to grade of injury, as well as treatment outcomes.

METHODS

A systematic search of MedLine and Scopus was completed to identify original articles published after 2013 reporting injury characteristics, outcomes, secondary effects and re-interventions in patients with BTAI. Title and abstract screening, full-text review, and data extraction were performed in duplicate. Aortic injuries were classified as adopted by the SVS Clinical Practice Guidelines.

RESULTS AND CONCLUSIONS

We included 31 studies were comprising 1961 patients with BTAI. There were 5 prospective studies. Most of the studies that reported age of patients (24), stated a mean age below 45 years (87,5%). Most patients had grade III aortic injury (974 patients), followed by grade II and IV injury (341 patients each). TEVAR was performed in 1486 patients, the majority with grade III and IV injuries (1139 patients). Almost 50% of patients with grade I injury (157 of 331) were submitted to TEVAR. Graft diameter and oversizing, length and manufacturer varied widely on studies that reported it. Follow-up varied extensively from 1 day to 232 months. 30-day mortality was 10,2% (26 studies) mainly due to associated injuries. Twenty-four studies reported aortic-related death, with an overall rate of 3,5% (52 of 1475 patients). No aortic related deaths were reported after the first 30 days. Partial or complete coverage of the left subclavian artery was performed in 487 patients, 29,5% of which required immediate of delayed revascularization. Rate of aortic reintervention was low on studies that reported it (5,3 %), mainly due to endoleaks.

TEVAR allows effective therapy in BTAI grades III and IV, even though, some grade II injuries might benefit from an earlier, more aggressive treatment strategy. Although the SVS guidelines state grade I injuries might be managed conservatively, there is a high rate of intervention in this group with good results and low mortality. Follow-up times up to almost 20 years are becoming available showing good durability of the graft and aortic remodeling and low rate of reintervention and complications.

WALKINGPAD: A HOME-BASED EXERCISE THERAPY. RESULTS OF RANDOMISED CLINICAL TRIAL

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Keywords: *walkingpad, home-ased exercise therapy, claudicants*

INTRODUCTION

IMPORTANCE: Home-based Exercise Therapy (HBET) for patients with peripheral artery disease (PAD) and intermittent claudication (IC) is a low-cost, useful, and effective therapeutic measure to improve walking distances, performance, and quality of life.

AIMS

To determine whether an HBET program with a behavioral change intervention and the support of a smartphone application is effective in improving walking distance and performance, as well as the quality of life over 6 months in patients with PAD.

DESIGN, SETTING, AND PARTICIPANTS

Single-center, prospective, two-arm, single-blinded randomized controlled trial including 60 patients with PAD and IC between March 2021 and December 2022.

INTERVENTIONS

Participants were randomized to receive a prescription for walking exercise with (n=30) or without (n=30) the support of a smartphone application – the WalkingPad app. Both groups receive a brief face-to-face behavioral change and motivational intervention.

MAIN OUTCOMES AND MEASURES

Primary outcomes were between-group differences in pain-free walking distance (PFWD), functional walking distance (FWD), maximal walking distance (MWD), and 6-minute walk distance (6MWD) at 3 and 6-months. Minimal clinically important differences were defined for each outcome.

RESULTS

60 patients (mean [SD] age, 65 (7.20) years; 53 [88.3%] male gender) completed the three assessment moments (baseline, 3- and 6-months). There were no significant between- group differences in primary or secondary outcomes (p<.05). However, there were differences over time with a large effect size (p<.001; □p2= .25 to .51). PFWD score increased from baseline to 6-months (from 123.76 vs 307.66) with a difference of 183.58 meters (± 185.46, 95% CI, 134.47 to 233.32 m; p<.05). FWD score increased from 191.70 to 398.75, with a difference of 206.63 meters (± 173.34, 95% CI, 160.26 to 253.83 m; p<.05). MWD score increased from 311.50 to 541.30, with a difference of 229.80 meters (± 223.96, 95% CI, 171.43 to 288.16 m; p<.05), and the 6-minutes walk distance increased from baseline to 6-months (from 335.73 vs 378.54 m) with a mean difference of 42.81 meters (± 61.21, 95% CI, 26.85 to 58.76 m; p<.05). Secondary outcomes also increased from baseline to 6-months.

CONCLUSIONS

It can be concluded that the WalkingPad program with behavior change intervention was able to increase walking distances, improve quality of life and decrease walking impairment for a period of 6 months compared to the initial value.

SURGICAL SOLUTION FOR TYPE II ENDOLEAK

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Keywords: *Endoleak, Abdominal aortic aneurysm, Endovascular Aortic Aneurysm Repair*

INTRODUCTION

Abdominal aortic aneurysms are corrected by endovascular repair (EVAR) in 75% of cases. When compared to conventional surgery, EVAR is associated with lower rates of mortality and short-term complications. However, late reinterventions are more common and are usually related to the endoprosthesis device.

AIMS

The authors present a clinical case that demonstrates the possible common complications of endovascular procedures and treatment strategies.

METHODS

The authors present the clinical case of a 66-year-old male patient, who underwent endovascular exclusion of an 8cm abdominal aortic aneurysm (EVAR) and presented 3 years late with a type 2 endoleak and aneurysm growth.

RESULTS AND CONCLUSIONS

The patient was submitted to EVAR in 2019 with extension of the endoprosthesis to the right external iliac artery and preservation of the internal iliac artery with an iliac branch device. The angio-CT showed exclusion of the aneurysm, with good placement and overlapping of the endoprostheses without endoleaks. At 3 years of follow-up, during an abdominal ultrasound, an aneurysmal growth to 11 cm was detected. The angio-CT excluded a rupture and no endoleaks were evident. The patient always remained asymptomatic. The analytical study was normal. Angiography excluded endoleaks I and III. Doppler ultrasound showed a possible type 2 endoleak dependent on the right iliolumbar artery. PET scan showed FDG-b uptake at the periphery of the aneurysmal sac, and was complemented with a leuco-scan that excluded infection. Type 2 endoleak was then assumed to be the etiology of the aneurysmal growth and an attempt was made to embolize the iliolumbar artery with partial success – release of the coils made at the origin of the branch, but it was still possible to see its filling by collaterality. Given the risk of rupture inherent to the diameter of the aneurysm, the patient was proposed for laparotomy. Intraoperatively, a non-pulsatile aneurysmal sac was observed, with no signs of infection, and no adhesions suggestive of an inflammatory aneurysm. The inferior mesenteric artery, permeable and pulsatile, was identified and ligated. A intraoperative eco-doppler demonstrated the absence of flows within the aneurysmal sac. The patient had a good clinical evolution and was discharged on the third postoperative day.

Endoleak represents the most frequent post-EVAR complication. Surveillance by imaging method is, therefore, mandatory for the early identification and treatment of these complications. In this case, surgical solution was used after an attempt at endovascular treatment was ineffective. Despite being a more invasive solution, it was complication-free and resolved the case.

ENDOVASCULAR TREATMENT OF ABOVE-KNEE AMPUTATION STUMP ISCHEMIA TO PREVENT HIP DISARTICULATION – A CASE REPORT

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Keywords: *above-knee amputation, stump ischemia, hip disarticulation*

INTRODUCTION

Ischemia of a transfemoral amputation stump may imply a surgery with a high morbidity and mortality rate, a hip disarticulation. The role of endovascular treatment of deep femoral artery especially in patients with persistent ischemia of the amputation stump is not well established. The attempt to revascularize the stump should be considered before.

Most patients in this clinical condition are multi-intervened, with PAD at various levels and with increased surgical risk. Endovascular ipsilateral deep femoral revascularization is minimally invasive and can be performed under local anesthesia with a lower rate of complications for the patient and, in most cases, successful avoiding disarticulation.

AIMS

Our aim is to present a case report of a successful stump revascularization and demonstrate their importance in clinical practice.

METHODS

We present a case report of a 68 years old woman with morbid obesity and diabetes. Due to toe gangrene, she was submitted to an unsuccessful attempt of endovascular revascularization of the left lower limb, and later was submitted to a femoro-peroneal bypass with ePTFE. Due to wound dehiscence, the ePTFE graft became infected and was treated with antibiotics and complete excision of the infected prosthesis and arterial closure with vein patch. Progressive ischemia of the limb lead to a major transfemoral amputation. Stump maintained a poor evolution with necrosis, cyanosis and absence of healing.

Diagnostic angiography showed occlusion of the common femoral artery and a patent deep femoral artery. Revascularization was performed with balloon angioplasty and self-expanding stent of the common femoral artery and left deep femoral artery with a good result and subsequent favorable evolution of the amputation stump healing.

RESULTS AND CONCLUSIONS

Although the mortality and morbidity of hip disarticulation described in the literature is variable, it is high and has a great impact on patients' lives. Endovascular revascularization, as a procedure with an acceptable complication rate and with few comorbidities for the patient, should be considered and attempted, although technically it may be more demanding in cases of poor stump perfusion. The role of endovascular treatment of the deep femoral artery in patients with amputation stump ischemia is not yet well established in the literature, but some authors report a few successful cases with avoidance of reamputations or hip disarticulation without complications.

This clinical case with a positive result supports that revascularization should be considered, over open revascularization, in patients with persistent above-knee amputation stump ischemia and multiple previous groin surgeries to avoid hip disarticulation.

CLINICAL OUTCOMES OF THE USE OF NEGATIVE PRESSURE WOUND THERAPY IN DIABETIC PATIENTS WITH CHRONIC LIMB-THREATENING ISCHEMIA WHO HAVE UNDERGONE REVASCULARIZATION - EXPERIENCE IN OUR DEPARTMENT

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Keywords: *Diabetic foot disease; Negative pressure wound therapy; Wound care*

INTRODUCTION

Foot wounds in people with diabetes mellitus (DM) are a common and serious global health issue. Negative pressure wound therapy (NPWT) has been introduced during the last 30 years and is an adjunct method used in the treatment of diabetic foot, that is currently used widely in wound care. NPWT involves the application of a wound dressing attached to a vacuum suction machine. A carefully controlled negative pressure (or vacuum) sucks wound and tissue fluid away from the treated area into a canister. Real world data on its effectiveness and safety is scarce.

AIMS

The authors evaluated the institutional experience of a tertiary center in the management of diabetic patients with chronic limb-threatening ischemia (CTLI) who have undergone lower extremity revascularization and application of NPWT in subsequent appointments after hospital discharge.

METHODS

Retrospective analysis of a single-center consecutive series of diabetic patients with CTLI who have undergone lower extremity revascularization and application of NPWT in 2020. Demographic data, diagnostic and procedural characteristics, clinical outcomes like infection "de novo" and major limb amputation were examined. Fifty-three diabetic patients with CTLI who had done lower extremity revascularization used NPWT in the vascular appointment after hospital discharge. Mean time of NPWT use was of 45 days. Only two (n=2) patients had to stop the treatment due to haemorrhage. 67.9% (n= 36) had subsequent reinfection with NPWT. Only 15.1% (n=8) patients were despite maximum efforts were submitted to major limp amputation surgery, which is a good outcome and probably establishing a parallel and positive association with a successful wound closure with a lower risk of limb amputation.

RESULTS AND CONCLUSIONS

NPWT is a safe treatment for effectively accelerate wound healing. However, the negative pressure value should be appropriately maintained and adjusted to avoid bleeding tendency of the wound when applying this new modality.

SPONTANEOUS RETROPERITONEAL HAEMATOMA IN THE POSTPARTUM PERIOD: EMBOLIZATION OF OVARIAN ARTERY PSEUDOANEURYSM, A SOLUTION TO A LIFE-THREATENING CLINICAL SITUATION

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Keywords: *Vascular Surgery, Transcatheter arterial embolization, Retroperitoneal Haematoma, Ovarian Artery pseudoaneurysm, Postpartum*

INTRODUCTION

An ovarian artery pseudoaneurysm in the perinatal period is a rare cause of retroperitoneal hematoma. Without timely treatment it can be a life-threatening clinical situation.

AIMS

We report a case of spontaneous formation of retroperitoneal haematoma due to an Ovarian Artery rupture after uncomplicated eutocic delivery.

METHODS

We described a 27-year-old multipara presenting with sudden onset left flank pain and subsequent development of hypovolemic shock, two days after uncomplicated vaginal delivery. She had an history of acute pyelonephritis in a previous pregnancy, tested positive in prenatal screening for asymptomatic bacteriuria and was an active smoker. CT angiogram revelled a large retroperitoneal haematoma (14x12x19cm) associated with an ovarian artery pseudoaneurysm. The patient was emergently admitted to the angiosuit and successfully treated with percutaneous embolization (coils and thrombin) of the ovarian artery. She was discharged home 5 day later without significative symptoms.

RESULTS AND CONCLUSIONS

Pseudoaneurysm of an ovarian artery is a rare and often associated with non-specific symptoms. Transcatheter embolization is a safe and effective management strategy for treatment of retroperitoneal hematoma due to an ovarian artery pseudoaneurysm, even in hemodynamically unstable patients.