COMUNICAÇÕES LIVRES EM VÍDEO

15H15 – 15H45

V02

TRATAMENTO CIRÚRGICO DE ANEURISMA UMERAL GIGANTE EM DOENTE TRANSPLANTADO RENAL COM ANTECEDENTES DE ACESSO ARTERIOVENOSO PARA HEMODIÁLISE

Sérgio Teixeira, Henrique Almeida, João Castro, Joana Martins, Arlindo Matos, Rui Machado

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Resumo: A dilatação/crescimento das artérias de *inflow*, após a construção de um acesso arteriovenoso para hemodiálise, ocorre como mecanismo de adaptação ao aumento do fluxo arterial condicionado pelo acesso. A degeneração aneurismática das artérias de *inflow* com desenvolvimento de aneurismas verdadeiros é rara. Os aneurismas verdadeiros desenvolvem-se mais frequentemente na artéria umeral, podendo ocorrer e/ou envolver outras artérias de *inflow*. A degeneração aneurismática das artérias de *inflow* não é prevenida pela laqueação ou trombose do acesso arteriovenoso e poderá estar associada à transplantação renal e à imunossupressão.
Pretende-se apresentar o vídeo do tratamento cirúrgico de um aneurisma verdadeiro da artéria umeral num doente transplantado renal com antecedentes de acesso arteriovenoso para hemodiálise. O doente foi submetido a aneurismectomia umeral e a pontagem de interposição axilo-umeral com prótese de ePTFE.

V03

CIRURGIA CONVENCIONAL COMO CHAVE PARA O TRATAMENTO E RECUPERAÇÃO DE FISTULA ARTERIOVENOSA INFETADA

João Diogo Castro, Samuel Cardoso, Miguel Queirós, João Cabral, Pedro Sá Pinto, Maria Sameiro Caetano Pereira, Rui Machado

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Introdução: A infeção de fístulas arteriovenosas autólogas (FAV) para hemodiálise é uma complicação grave, com risco de sepsis e/ou rotura do acesso. A sua incidência estima-se entre 0,2-0,4 infeções/1000 dias de uso da fístula. Dos fatores de risco destacam-se: higiene inadequada, diabetes, escoriações cutâneas e punção em *buttonhole*. Este trabalho, relata um caso de FAV com risco de rotura iminente devido à infeção no local de punção ao nível do aneurisma de punção arterial (AnPA).

Materiais e Métodos: Colheita retrospectiva de dados de registos eletrónicos, relatórios cirúrgicos e fotográficos.

Resultados: Mulher de 72 anos, com doença renal crónica em hemodiálise por FAV úmero-cefálica (U-C) esquerda, criada em 2021, submetida no mesmo ano a 2 angioplastias com balão sem fármaco em 2 meses, devido a estenose de outflow na crossa da veia cefálica. Em dezembro de 2022, iniciou hipocoagulação por trombose parcial do AnPA. Em setembro de 2024, por sinais inflamatórios no AnPA, foi reavaliada pelo centro de acessos vasculares, que, ao diagnosticar ulceração com infeção no local de punção do AnPA, encaminhou-a para o SU. No exame objetivo, observou-se FAV U-C com débito de 1400cc, AnPA de 32mm, aneurisma venoso de 23mm e integridade da boca anastomótica. O AnPA apresentava ulceração com sinais de infeção e risco de rotura. Foi proposto tratamento cirúrgico devido ao risco de hemorragia. Controlou-se o inflow e a porção interaneurismas. Após dissecção cuidadosa, o AnPA foi libertado da pele sem perda de integridade, preservando a FAV. Realizou-se aneurismectomia parcial com exclusão da área ulcerada e aneurismoplastia na porção saudável. No final, a FAV mantinha frémito e a hemodiálise foi realizada em 24h. Iniciou-se vancomicina e imipenem desde a admissão.

Conclusão: A infeção de FAV pode ser fatal. O tratamento inclui antibioterapia e revisão cirúrgica, com risco de perda do acesso se for necessária a laqueação. Neste caso, mostramos ser possível recuperar a FAV apesar da infeção, destacando o valor da cirurgia convencional na revisão de acessos vasculares.

COMUNICAÇÕES LIVRES 1

10H20 – 11H20

CO01

A RARE CASE OF COMPLICATED BRACHIAL ARTERY ANEURYSM IN A KIDNEY TRANSPLANT PATIENT - CASE STUDY

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Centro Hospitalar de Lisboa Ocidental

Introduction: Brachial artery aneurysms are rare and more prevalent in patients with previous arteriovenous access and kidney transplants. This condition may be asymptomatic or, in extreme cases, manifested by acute limb ischaemia (ALI). Doppler ultrasound is usually sufficient for confirmation, while angio-CT is used for surgical planning. Surgical reconstruction is the preferred treatment, with autologous vein grafts being favored. The relationship between this entity and long-term vascular accesses is well established, being atherosclerotic changes and chronic corticosteroid use (renal transplantation), with subsequent aneurysmal degeneration, the most frequent causes, both in correlation with some degree of hyperdynamic flow.

Case Report: We present a case of a 64-year-old male with a history of chronic kidney disease, hypertension and type 2 DM, renal transplant recipient since 2009 and left radiocephalic fistula ligation in July 2024, on prednisolone. He was admitted to the emergency department with a 72-hour history of coldness in his left hand, pain and swelling on the inner side of the ipsilateral elbow and paresthesia at the level of the thumb. In his left arm, despite a strong brachial pulse and no motor or sensitive deficits, a subtle pallor, diminished temperature, and absence of peripheric pulses were noted.
Ultrasound revealed an aneurysmal brachial artery with internal thrombus in his forearm, no flow in the radial artery, and low-amplitude monophasic flow in the distal ulnar artery. AngioCT confirmed the suspicion. No distal vessel was considered suitable for bypass surgery. He remained hospitalized for 5 days under therapeutic anticoagulation. At discharge, complaints of pain, paresthesia and temperature changes had resolved.

Conclusion: The link between upper limb vascular accesses, brachial artery aneurysms, and kidney transplantation is well established. The natural history is poorly understood, so timely diagnosis is crucial to prevent complications. If feasible, surgical repair is crucial to prevent complications such as ALI. Further research is needed to better understand the causes, progression, and management of this condition.

Reference:

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CO02

FÍSTULAS ARTERIOVENOSAS DISTAIS VERSUS PROXIMAIS - A PERSPETIVA DE UMA UNIDADE DE HEMODIÁLISE PERIFÉRICA

Maria Beatriz Bessa, Filipa Fernandes, Daniela Alferes, Vitória Paes Faria, João F. Costa, Patrícia F. Ribeiro, Susana Pereira, Ana Ventura

Nefrodouro, Centro Médico do Douro

Background: A fístula arteriovenosa (FAV) é o acesso preferido para hemodiálise devido a menor risco de complicações e maior durabilidade. A escolha da localização é feita com base em fatores anatómicos e comorbilidades, e pode impactar a necessidade de intervenções e qualidade de vida do doente. Este estudo pretende comparar doentes com FAV distais e proximais seguidos na nossa unidade de hemodiálise periférica para avaliar o número de intervenções e a sobrevida do acesso.

Métodos: Foi realizado um estudo observacional retrospetivo. Foram identificados 73 doentes que iniciaram hemodiálise na nossa clínica entre Janeiro de 2020 e Agosto de 2024. Excluímos 17 doentes com cateter venoso central ou prótese arteriovenosa e 14 doentes por tempo de follow-up inferior a 6 meses. Foram recolhidos dados demográficos e do acesso. Definimos o tempo de follow-up desde a data de primeiro uso do acesso até falência/abandono, óbito ou transferência do doente, e recolhemos o número de cirurgias ou angioplastias transluminais (ATL) do acesso durante esse período.
A análise estatística foi realizada no SPSS. Um valor de *p* inferior a 0,05 indicou significância estatística.

Resultados: Foram incluídos 48 doentes, 64,6% eram do sexo masculino, tinham idade média de 71,6 ± 14,8 anos. Em termos de comorbilidades, 58,3% eram diabéticos, 85,4% hipertensos, 52,1% tinham dislipidemia, 31,3% insuficiência cardíaca e 8,3% doença arterial periférica (DAP). A FAV distal era o acesso de 54,2% dos doentes e a FAV proximal de 45,8%. Não houve diferenças estatisticamente significativas entre os grupos para o sexo, idade, hipertensão, insuficiência cardíaca, número de cirurgias ou ATL. Contudo, verificou-se associação significativa entre FAV proximal e diabetes (p=0,002, OR 7,20) e DAP (p=0,038, OR 2,44), o que se manteve na análise multivariada. A análise de sobrevida sugeriu maior longevidade das FAV distais, mas a diferença não foi estatisticamente significativa (p=0,069).

Conclusão: Não houve diferenças significativas no número de intervenções e na sobrevida entre os tipos de FAV, mas destaca-se a importância de considerar comorbilidades, como diabetes e DAP, na escolha da localização do acesso para otimizar a durabilidade e reduzir intervenções.

CO03

ACUTE ARM ISCHEMIA INDUCED BY A COMPLICATED HEMODIALYSIS ACCESS, ELEVEN YEARS LATER

Rita Piedade[1], Costa-Lima J[1], Vilas-Boas JM[1], Pereira TC[1,3], Moura T[1,3,] Monteiro DD[1,3,] Dias L[1,3], Nóbrega L[1,3], Jácome F[1,2], Ferreira J[1,3], Coentrão L[2,3], Mansilha A[1,3]

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Introduction: Arteriovenous fistulas (AVF) are the preferred vascular access for chronic hemodialysis patients due to their low complication rates and functionality. However, access dysfunction remains a significant contributor to morbidity in these patients. (1)

AVF dysfunctions, such as arterial aneurysms after AVF ligation are rare (2) but can lead to serious complications like acute ischemia.

Methods: Patient's clinical information and imagiological studies were reviewed retrospectively.

Case Report: A 52-years-old male patient with history of hypertension, type 2 diabetes mellitus, latent tuberculosis, gouty arthritis, and chronic renal disease secondary to an IgA nephropathy presented to the emergency room. He had undergone a renal transplant in 2012 and had a brachiocephalic AVF constructed prior to the transplant. After the transplant, the patient was monitored by a vascular surgeon, and he was his AVF ligated in 2013 due to the development of a venous aneurysm.

Eleven years later, the patient was admitted to the hospital with symptoms of pain, pallor, and coolness in the left arm, accompanied by paresthesia and noticeable weakness limited to the fingers. He also reported a noticing a localized swelling in the antecubital fossa resembling a pulsating mass over the past month. No palpable radial or cubital pulses.

An eco-Doppler ultrasound revealed a 35mm brachial artery aneurysm with an associated mural thrombus associated and distal embolization to ulnar and radial arteries. The patient was admitted to the operation room, where an aneurysmectomy was made associated (Fig 1 and 2) with thrombectomy of the distal arteries, followed by a brachial-brachial bypass using an inverted great saphenous vein graft.

The patient was discharged three days after the procedure with palpable radial pulse and no remaining symptoms.

Discussion/Conclusion: Given the association between long-term immunosuppressive therapy and arterial aneurysm progression post-renal transplantation (3,4), this case highlights the importance of prolonged vascular surveillance in renal transplant patients with AVFs. Monitoring for arterial aneurysm formation in this population may be warranted to prevent serious complications.

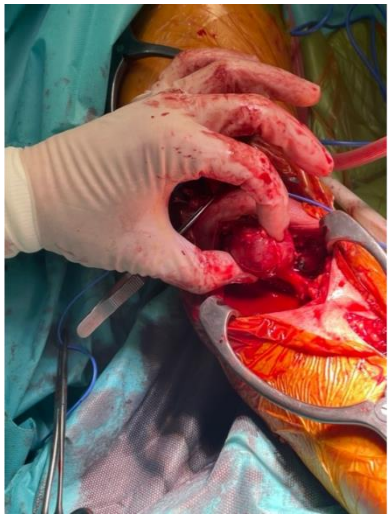

Figure 1 - Brachial aneurysm before aneurysmectomy

Figure 2- Brachial aneurysm after aneurysmectomy

CO04

JAILBREAK: TECHNIQUE WITHOUT A LADDER

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Background: Central venous occlusion is a common complication in hemodialysis patients which can significantly impact dialytic efficacy and quality of life as well as preclude future vascular access. Endovascular techniques have emerged as a safe and effective treatment to restore central vein patency. We present a successful recanalization of an occluded right brachiocephalic trunk jailed by a left brachiocephalic stent through a trans-stent stent-graft deployment.

Clinical Report: 74-years old female, hemodialyzed through a right brachiocephalic fistula with exhausted venous patrimony on the left upper limb, presents with cervicofacial edema and collateral venous circulation on the right arm and hemithorax. Phlebography showed occlusion of the right brachiocephalic trunk outflow, "jailed" by a previously placed left brachiocephalic stent extending to the superior vena cava. The occlusion was recanalized through the stent mesh using a 0.018-in Command ST™ guidewire supported by a straight catheter. After exchanging for an Amplatz Super Stiff™ guidewire, a 6-Fr and 8-Fr sheaths were sequentially advanced through the stent mesh to create a fenestration. A Viabahn® VBX Balloon Expandable Stent 9x39mm was deployed through the stent mesh and extended to the superior vena cava. Completion phlebography showed a successful recanalization and correct-positioned stents.

Conclusion: This report highlights the importance of exploring different solutions within the endovascular armanentarium when conventional approaches are not suitable. With this "trans-stent stent-grafting" technique we achieved a successful recanalization of the brachiocephalic trunk preserving the patient's last functional upper limb vascular access and solving the venous hypertension associated symptoms.

CO05

A MODIFIED MILLER TECHNIQUE: A CASE SERIES

José Miguel Vilas Boas[1,2], Emílio Silva[1], Rita Piedade[1,2], Tiago Costa-Pereira[1,2], Margaret Soares[1], Tiago Moura[1,2], Diogo Domingues-Monteiro[1,2], Lara Dias[1,2,] Leandro Nóbrega[1,2], Filipa Jácome[1,2], Joana Ferreira[1,2], Luís Coentrão[3,4], Armando Mansilha[1,2]

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Background: High-flow vascular access (VA) and hemodialysis access-induced distal ischemia (HAIDI) are important complications requiring a flow reduction technique.
Multiple banding methods have been described. We adopted the Minimally Invasive Limited Ligation Endoluminal-Assisted Revision (MILLER) technique with some modifications to achieve adequate flow volumes and treat HAIDI symptoms.
This technique has previously been reported in a small group of patients but has never been used in our center before.
We hereby report our center experience using a modified MILLER banding procedure.

Methods and Materials: Four patients with high-access flow (>1500 mL/min) and HAIDI I-II were treated with a modified MILLER banding procedure from January to May 2024.
After exposition of the juxta-anastomotic venous segment, the arterialized vein was clamped and an angioplasty balloon was inserted in an extraluminal position next to the collapsed vein. Three 2-0 polyfilament sutures were passed beneath and looped over the access site before being tightened around the inflated balloon. Vein size was evaluated preoperatively to determine the appropriate balloon diameter for reducing the size of the vein to 50% of its original size.
The procedure was considered successful when symptoms resolved while maintaining a function vascular access. Therefore, access flows were measured pre- and post-operative and HAIDI symptoms were recorded.

Results: This modified MILLER technique allowed for total resolution of symptoms and adequate access flow reduction (<1500 mL/min) in all patients. No VA failures or major surgery complications were recorded during the study period.

Discussion and Conclusion: In this study, the modified MILLER technique has demonstrated to be a safe and effective alternative to other banding methods. Other reports considering the same technique have proven similar benefit.

When compared with the widely used MILLER method, this technique avoids the complications associated with endovascular procedures, reduces the need for access catheterization and minimize radiation exposure. This study also highlights the need for further studies involving larger cohorts of patients and extended study durations to assess the safety and efficacy of this procedure.

CO06

ANÁLISE CRÍTICA DA CONSULTA MULTIDISCIPLINAR DE ACESSOS VASCULARES: A EXPERIÊNCIA DE UM CENTRO TERCIÁRIO

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Introdução: A doença renal crónica (DRC) afeta milhões de pessoas e culmina nos seus estádios mais avançados na necessidade de terapêuticas de substituição renal. A referenciação atempada a consulta de acessos e a construção do melhor tipo de fístula arteriovenosa (FAV), adaptado a cada doente estão entre as dificuldades mais identificadas na literatura, estimando-se que cerca de 65-75% dos doentes inicie diálise sem uma FAV funcionante e que 20-30% dos acessos construídos culminem em falência primária. Na nossa instituição a consulta de acessos é realizada em conjunto por um Cirurgião Vascular e um Nefrologista. Procurámos analisar os resultados dos acessos construídos pelo nosso serviço no último ano, comparando-os com a literatura conhecida.

Métodos: Realizámos uma análise retrospetiva dos doentes submetidos a construção de acesso vascular no serviço de Angiologia e Cirurgia Vascular da Unidade Local de Saúde de Coimbra durante o primeiro semestre de 2023, bem como o respetivo *follow-up* nos 6 meses seguintes. Todos os doentes foram previamente avaliados em consulta multidisciplinar de acessos por um Cirurgião Vascular e um Nefrologista. Registaram-se os dados demográficos da população, o tipo de acesso proposto inicialmente, bem como o tipo de acesso construído, complicações, taxa de maturação primária, assistida, falência, entre outros.

Resultados: Foram construídos um total de 156 acessos, dos quais 57.7% em homens, com uma mediana de idades de 73 anos; a etiologia mais frequente para DRC foi diabetes (19.2%), seguida de hipertensão arterial (13.5%). À data da consulta inicial, 87 (55.8%) doentes encontravam-se em pré-diálise, 61 (39.1%) em hemodiálise por catéter e 8 (5.1%) em diálise peritoneal. À data de conclusão do *follow-up*, 108 (69.2%) doentes tinham iniciado hemodiálise, dos quais apenas 31 (28.7%) através de FAV. O tempo médio entre o pedido de consulta e a avaliação inicial foi de 6 semanas e entre o pedido de consulta e a construção de acesso de 11.5 semanas. Realizaram-se 48 FAV radiocefálicas (RC), 80 umerocefálicas (UC), 27 umerobasílicas (UB) e 1 umero-umeral, sendo que em apenas 16 doentes (10.3%) o acesso construído foi diferente do inicialmente proposto em consulta. A taxa de maturação primária foi 65.4% e maturação assistida 75.6%, com uma falência primária de 24.4% à custa sobretudo de FAV RC seguida de FAV UB. Após análise multivariada, identificaram-se como fatores associados a maturação de FAV, os seguintes: sexo masculino, construção de FAV UC e diâmetro da veia > 3.68 mm.

Conclusão: Os dados da nossa análise são compatíveis com resultados de outros estudos previamente publicados na literatura. Ainda que o tempo entre o pedido de consulta e a construção de acesso tenha sido diminuto (< 3 meses) e a patência de acessos superior a 75%, verificou-se que quase 70% dos doentes iniciaram hemodiálise sem ter uma FAV funcionante, refletindo como uma das maiores limitações, o diagnóstico e referenciação tardia nestes doentes.

CO07

TRANSFORMAR LIMITAÇÕES EM SOLUÇÕES: TRANSPLANTE RENAL DUPLO EM RINS DE CRITÉRIOS EXPANDIDOS

Ana Sofia Dória e Silva Lopes, Andreia Rocha Ministro, Aldara Filipa Peixoto Faria, Catarina Teresa Condinho Pato, Teresa Rafaela Freitas Pereira, Augusto Manuel Almeida Ministro, Maria Alice Gião Santana, João Paulo de Mesquita Albuquerque Gonçalves, Carlos Manuel da Costa Martins Miranda, Luís Manuel Batista Miranda

Centro Hospitalar Universitário Lisboa Norte

Abstract: O transplante renal duplo (TRD) procura otimizar o uso de rins de dadores de critérios expandidos (DCE), transplantando ambos os rins num único recetor, oferecendo uma maior massa renal funcional e aumentado a probabilidade de uma melhor função renal global e sobrevida dos enxertos. Esta estratégia procura reduzir os longos tempos de espera e a escassa oferta de órgãos.
Os autores apresentam o caso de uma mulher de 55 anos, com diagnóstico de doença renal crónica KDIGO V de etiologia desconhecida em diálise peritoneal, com diurese residual. Decidida realização de TRD à direita por enxertos de DCE, uma vez que as biópsias realizadas revelaram ligeira fibrose intersticial (6%), ligeira atrofia tubular (10%) e glomeruloesclerose global (26% e 10%). A cirurgia decorreu sem complicações, apresentado diurese imediata. Rim direito anastomosado aos vasos ilíacos primitivos e o esquerdo aos vasos ilíacos externos, com isquemia fria de 12h16 e 12h58 e isquemia quente de 29 e 26 minutos, respetivamente. No pós-operatório, verificou-se boa função do enxerto, o ecodoppler revelou boa perfusão renal e permeabilidade vascular. Alta ao 14º dia. Em consulta de seguimento, boa função do enxerto (nadir pCreat 1.47mg/dL) e sem sinais de complicações.
Os DCE geralmente apresentam características que aumentam o risco de disfunção precoce do enxerto, como idade avançada, hipertensão, diabetes e função renal subótima. No entanto, a combinação de dois rins pode compensar estas limitações, resultando numa maior massa de nefrónios funcionais.
Diversas técnicas cirúrgicas podem ser utilizadas, incluindo abordagens uni ou bilaterais, tanto extra como intraperitoneais. O principal objetivo da abordagem unilateral passa por preservar o lado contralateral para um eventual futuro transplante (em caso de falência dos enxertos). Todavia, não existem ainda ensaios clínicos aleatorizados que recomendem uma técnica em detrimento de outra.

CO08

THE USE OF THE SURFACER® INSIDE-OUT® SYSTEM FOR CENTRAL VENOUS ACCESS: A SINGLE CENTER EXPERIENCE

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Introduction: Managing vascular access can be challenging, particularly with the chronic use of central venous catheters, which increases the risk of complications such as thoracic central vein occlusion. This condition poses a significant challenge for clinicians when conventional treatments are ineffective. The Surfacer® Inside-Out® Access Catheter System (Bluegrass Vascular Technologies, San Antonio, TX, USA) has emerged as an innovative alternative for achieving thoracic venous access. We present our center's experience with this device.

Case Report: Between 2021 and 2023 three patients (2 female) were submitted to the use Surfacer® Inside-Out® Access Catheter System. All patients had multiple failed attempts of thoracic central vein occlusion recanalization. Ages ranged between 6 and 56 years old. In two patients the device was used to enable central venous catheters, one for chemotherapy and the other for chronic parenteral nutrition. The remaining patient underwent concurrent placement of a SuperHero® graft during the same period. Successful central venous access was achieved in all cases. One major procedure-related complication was reported four months after the intervention.

Conclusion: The Surfacer System provides an alternative for gaining repeated thoracic central venous access. Although technically feasible, these procedures are not risk-free.

CO09

ULNAR-CEPHALIC ARTERIOVENOUS FISTULA: AN ALTERNATIVE APPROACH FOR DISTAL VASCULAR ACCESS—CASE REPORT

Gonçalo Araújo, Correia R, Ribeiro T, Fidalgo H, Cardoso J, Figueiredo A, Ferreira ME

Angiologia e Cirurgia Vascular - Hospital de Santa Marta

Introduction: Creation of an arteriovenous fistula (AVF) at the distal site is often preferred mainly for patient convenience and lower complication rate compared to more proximal vascular accesses. While the radiocephalic AVF at the wrist is widely used, distal AVFs using the ulnar artery are rarely performed. This case report an alternative to the radiocephalic AVF by using the ulnar artery for distal AVF creation.

Description: We present a 62-year-old patient with chronic renal disease requiring hemodialysis, who had previously undergone multiple failed attempts to establish vascular access in the non-dominant arm and experienced unsuccessful maturation of a brachiocephalic fistula in the dominant arm. Vascular mapping of the dominant arm revealed no flow in the radial artery, triphasic waveforms in the ulnar artery, and a well-calibrated cephalic vein. Based on these findings, an ulnar cephalic arteriovenous fistula was constructed in the dominant arm. Two surgical incisions were made to increase exposure of the cephalic vein, as it required

a short transposition along the anterior aspect of the forearm to the ulnar border. It was confirmed multiple times, both before and after the anastomosis, that there was no rotation of the vein during the procedure.

Conclusions: In patients with multiple failed attempts for vascular access construction, it is particularly important to perform a thorough and rigorous vascular mapping in order to optimize the use of the venous territory and achieve the best possible inflow.

CO10

VASCULAR CHALLENGES - LONG-TERM OUTCOMES OF KIDNEY TRANSPLANTATION WITH INFERIOR VENA CAVA OUTFLOW: A SINGLE CENTER EXPERIENCE

Andreia Rocha Ministro[1], Mickael Teixeira de Sousa Henriques[1], Bernardo Marques da Silva[2,3], Luís Alberto da Cunha Mendes Pedro[1,3], Maria Alice Gião Santana[2], José António Machado Lopes[2,3], Teresa Rafaela Freitas Pereira[5], Carlos Manuel da Costa Martins Miranda[3,4], Augusto Manuel Almeida Ministro[1,3]

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Background: Kidney transplantation is the best treatment for patients with end-stage renal disease (ESRD) owing to better survival and quality of life. The standard surgical approach involves implanting the kidney graft in the recipient's external iliac vessels. Iliac and inferior vena cava (IVC) occlusion are technical limitations that commonly lead to exclusion of patients from renal transplantation. Proximal IVC, when patent, may be a good venous outflow alternative.

Methods: We performed a retrospective study at a tertiary hospital collecting data from surgical protocols and clinical records to identify all patients who underwent kidney transplantation with IVC anastomosis between January 2000 and August 2024. Outcomes were 30 days all-cause mortality and long-term allograft survival.

Results: From 1235 transplants, 14 involved anastomosis to the IVC. Median follow-up was 110 months [3.8-99.3], median age at transplant was 34 years [3-64] and 8/14 recipients were men. Indications for IVC anastomosis included non-vascular access option patients due to ilio-cava thrombosis, multiple previous transplants, and use of an adult graft for a low-weight child. Thirteen grafts were implanted in the right iliac fossa and one intraperitoneally. Most grafts were right kidneys (10/14) from deceased donors (12/14). In 7 patients procurement of deceased kidney grafts with long vessels allowed renal vein extension with donor vena cava. Two graft failures occurred: one from humural rejection at 5 years, restarting dialysis 9 years post-transplant, and one from acute ischemia at 3 months. Other grafts remained functional with average serum creatinine of 1.55mg/dL (CI95% [0.9-2.2]) at 5 years. No patient died at 30 days post-transplant.
Conclusion: As ESRD patients' survival improves, the prevalence of non-option vascular access and multiple prior transplants patients is expected to rise. Proximal IVC anastomosis is a complex yet feasible procedure ensuring a long-lasting venous drainage.

COMUNICAÇÕES LIVRES 2

16H15 – 17H10

CO11

FIFTEEN YEARS AND COUNTING: A JOURNEY OF INTERVENTIONS TO SUSTAIN AN ARTERIOVENOUS GRAFT FOR HEMODIALYSIS ACCESS

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Introduction: Hemodialysis vascular access (VA) dysfunction is a leading cause of morbidity and hospitalization among patients undergoing chronic hemodialysis. While an autogenous arteriovenous fistula (AVF) is the preferred option for VA, it is not feasible for all patients. In such cases, arteriovenous grafts (AVGs) using expanded polytetrafluoroethylene (ePTFE) are utilized, albeit with higher rates of complications and lower patency compared to AVFs.

Methods: Patient's clinical information and imagiological studies were reviewed retrospectively.

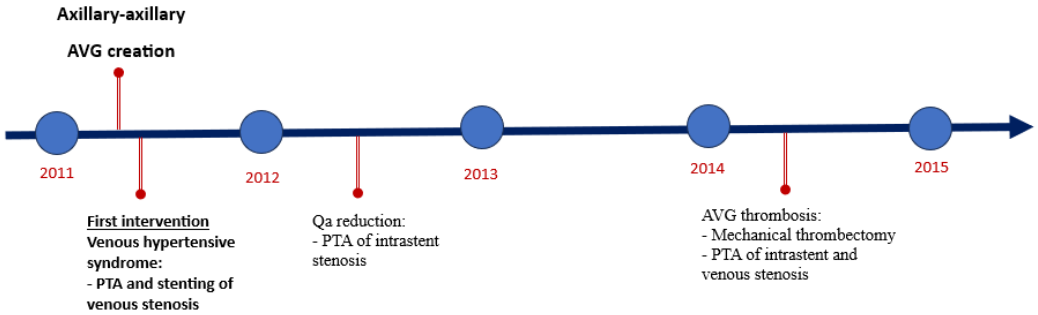
Case Report: We present the case of a 54-year-old woman with a history of HIV infection, epilepsy, congenital heart disease, and other comorbidities, who developed end-stage kidney disease necessitating dialysis since 2002. After multiple failed AVF attempts, an axillary-axillary AVG was successfully created in 2011, but required extensive follow-up and numerous interventions to maintain patency. Over the course of 15 years, the patient required over 10 percutaneous transluminal angioplasties (PTAs) and several open thrombectomies due to recurrent stenosis and thrombosis. Major interventions included stent placement to address persistent stenosis and the development of a pseudoaneurysm.

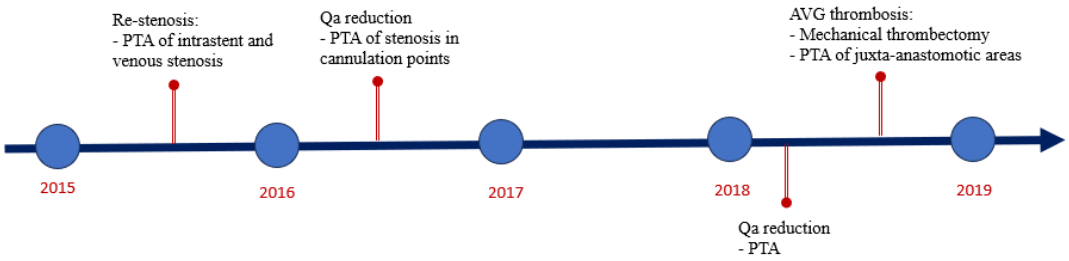
Despite these challenges, the vigilant monitoring and multidisciplinary management by vascular surgeons, nephrologists, and radiologists enabled prolonged AVG functionality.

Discussion/Conclusion: This case underscores the critical importance of regular surveillance, timely interventions, and a multidisciplinary approach in managing complex VA cases. The successful management of this patient's VA over an extended period highlights the evolving role of stent grafts in addressing stenosis and preventing restenosis, as well as the potential for stent placement in managing pseudoaneurysms within the graft. This case also contributes to the ongoing discussion about the efficacy and safety of various interventions in maintaining long-term VA patency.

Attachment 1: "Timeline of a journey of interventions to sustain an arteriovenous graft for hemodialysis access."

TIMELINE OF A JOURNEY OF INTERVENTIONS TO SUSTAIN AN ARTERIOVENOUS GRAFT HEMODIALYSIS ACCESS.





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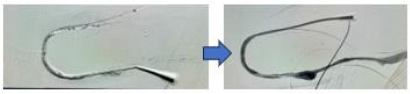

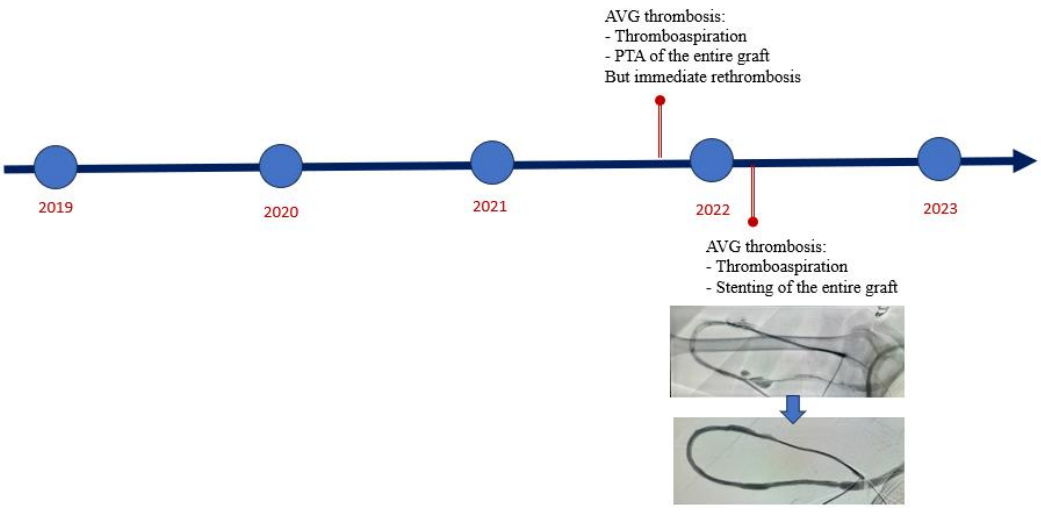

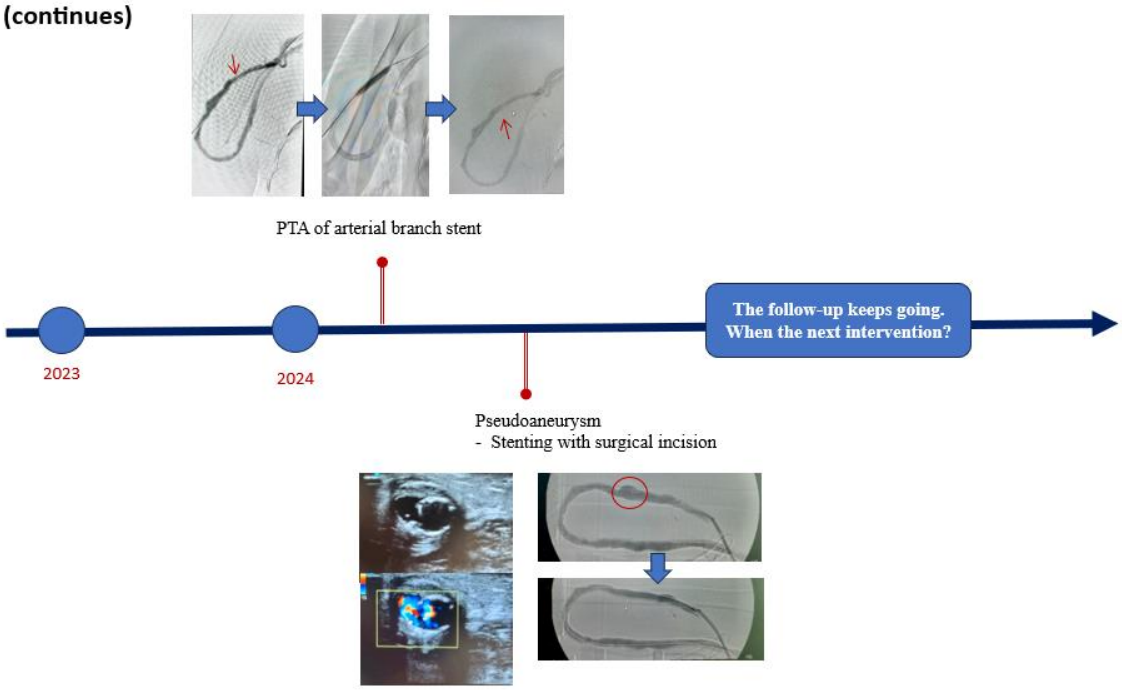

CO12

A TAILORED APPROACH TO RADIOCEPHALIC ARTERIOVENOUS FISTULA INFLOW DISEASE

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Introduction: The radiocephalic arteriovenous fistula (AVF) is the preferred choice for vascular access in hemodialysis due to its association with lower complication rates. However, like all AVFs, stenosis can develop over time, necessitating revision. Inflow stenosis accounts for approximately 30% of referrals for vascular access revision. Various treatment strategies, including percutaneous transluminal ballon angioplasty (PTA) and open surgery, are available to address inflow disease. However, in patients with complex risk factors, challenging cases may arise, requiring innovative and tailored solutions to ensure the functionality and longevity of the access.

Case Report: A 76-year-old male, who had a radiocephalic AVF constructed in 2015, was referred for evaluation due to difficulties with cannulation. On physical examination, the fistula had a weak thrill, a small aneurysm with good drainage upon arm elevation and a light increase in pulse with proximal compression of the fistula.

An ultrasound examination revealed a diffusely calcified radial artery with a short occlusion proximal to the anastomosis, alongside significant stenosis at the anastomosis, measuring 1.4 mm in diameter. The ulnar artery was identified as the only source of inflow for the fistula through the palmar arch, with the brachial artery flow rate measured at 250 mL/min.

An angiographic assessment confirmed the ultrasound findings. Retrograde recanalization of the proximal radial artery was attempted but was unsuccessful. As a result, PTA was performed on the anastomosis using only a 3 mm semi-compliant balloon, but no improvement in the fistula thrill was achieved. Subsequently, a side-to-side anastomosis was created between the radiocephalic vein and the radial artery in the middle third of the forearm to enhance inflow. A palpable thrill was observed throughout the fistula in the forearm following the procedure. Brachial artery flow rate increased to 800 mL/min. The patient underwent dialysis the following day without complications.

Conclusion: Radiocephalic arteriovenous fistula inflow disease can present significant challenges. To maintain vascular access patency and avoid the need for a central venous catheter, a tailored approach is often necessary. Both open and endovascular surgical options can be considered for treatment in such scenarios. In this particular case, despite diffuse disease of the radial artery, a side-to-side anastomosis, performed through a small forearm incision, proved to be a viable and durable solution. This approach, although technically challenging, provided the patient with a long-term and effective treatment for maintaining adequate access.

CO13

ACESSOS VASCULARES NOS OCTOGENÁRIOS - ANÁLISE DE UMA UNIDADE DE HEMODIÁLISE PERIFÉRICA

Maria Beatriz Bessa, Filipa Fernandes, Daniela Alferes, Vitória Paes Faria, João F. Costa, Patrícia Fonseca Ribeiro, Susana Pereira, Ana Ventura

Nefrodouro, Centro Médico do Douro

Background: A escolha do acesso vascular de hemodiálise é complexa nos idosos, pela maior prevalência de comorbilidades e fragilidade. A literatura indica menor sobrevida do acesso e mais complicações nos idosos, mas a evidência é limitada. Este estudo comparou o tipo de acesso, número de intervenções e sobrevida da fístula arteriovenosa (FAV) ou prótese arteriovenosa (PTFE) entre doentes com menos de 80 anos e doentes com idade superior ou igual a 80 anos.

Métodos: Foi realizado um estudo retrospetivo e identificados 73 doentes com início de hemodiálise na nossa unidade entre Janeiro de 2020 e Agosto de 2023. Excluímos 5 doentes por tempo de follow-up inferior a 3 meses. Foram recolhidos dados demográficos e do acesso. Definimos o tempo de follow-up desde a data de primeiro uso do acesso até falência/abandono, óbito ou transferência do doente, e recolhemos o número de cirurgias ou angioplastias transluminais (ATL) do acesso durante esse período.
A análise estatística foi realizada no SPSS. Um valor de *p* inferior a 0,05 indicou significância estatística.

Resultados: Foram incluídos 68 doentes, 57,4% eram homens, idade média 72,0±14,1 anos, 54,4% eram diabéticos, 86,8% hipertensos, 50% dislipidémicos, 30,9% tinham insuficiência cardíaca (IC) e 10,3% doença arterial periférica (DAP). Dos 24 doentes com idade igual ou superior a 80 anos, 70,8% tinham FAV, 25% cateter venoso central (CVC), e 4,2% PTFE; 52,9% das FAV eram distais e 47,1% proximais. Nos 44 doentes mais jovens, 79,5% tinham FAV, 11,4% CVC e 9,1% PTFE; 57,1% das FAV eram distais e 42,9% proximais.
Não houve diferenças significativas entre os grupos em termos de sexo, diabetes, hipertensão, dislipidemia, DAP ou tipo/localização do acesso. Contudo, houve associação entre IC e ser octogenário (p=0,049, OR 2,89).

Os octogenários necessitaram de mais intervenções no acesso (p=0,009), mas esta associação desapareceu após ajuste para comorbilidades e localização (p=0,052). A sobrevida do acesso foi inferior nos octogenários, mas sem significância estatística (p=0,158).

Conclusão: Embora os doentes com idade igual ou superior a 80, possam exigir maior número de intervenções do acesso vascular, a idade por si só, não demonstrou ser um fator determinante na sobrevida dos acessos. Assim, a decisão de construção do acesso nos octogenários deve ser individualizada.

CO14

STEAL SYNDROME AND THE ROLE OF PLAIN OLD BALLOON ANGIOPLASTY FOR DISTAL REVASCULARIZATION – CASE REPORT

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Angiologia e Cirurgia Vascular - Hospital de Santa Marta

Introduction: Steal syndrome is a complication of arteriovenous fistula (AVF) that compromise the perfusion to the extremity distal to the anastomosis. The management of steal syndrome is guided by the clinical presentation and the underlying pathophysiology of the condition. When limb viability is at imminent risk, AVF ligation may be the only viable solution. For less severe cases, it is essential to identify the underlying cause of ischemia and promptly initiate targeted therapy. In cases where steal syndrome is compounded by significant distal vascular disease, which constitutes the majority of the cases, plain old balloon angioplasty (POBA) of the affected segment may be considered, although rarely performed. This case report explores an alternative approach to improve distal perfusion in steal syndrome through POBA of the affected segment.

Case description: We report a case of a 46-year-old female patient with chronic renal disease undergoing hemodialysis through a brachiocephalic arteriovenous fistula (AVF) in her left arm. The patient initially presented with mild numbness, pallor, and skin ulceration on the fourth finger of her left hand for several months. She also exhibited absent radial and ulnar pulses and an AVF flow rate of approximately 1100ml/min. Initially, the patient underwent surgical access banding, with no relive of her symptoms and the skin ulceration worsened. Upon clinical evaluation, an angiography of the left arm was performed, revealing multiple significant stenosis in the radial and interosseous arteries, along with an occlusion at the ulnar ostium. Consequently, plain balloon angioplasty of the radial artery was performed along with surgical debridement of the distal extremity of the fourth finger. Approximately one month later, the patient experience symptoms relief and the extremity of the finger showed good progress in healing.

Conclusion: Recognizing the underlying condition contributing to steal syndrome is crucial for prompt and effective treatment. Various approaches are available depending on the specific etiology. In this case, despite the high flow rate of the arteriovenous fistula (AVF), the symptoms were exacerbated by distal arterial disease. POBA, although rarely performed, proved to be a viable alternative for addressing the distal vascular component of this condition . This case highlights the importance of a thorough evaluation and individualized treatment strategies to effectively manage steal syndrome and preserve both limb function and hemodialysis access.

CO15

RENTABILIZAR AS VEIAS DO ANTEBRAÇO APÓS FALÊNCIA DA DRENAGEM DE FÍSTULA ÚMERO-CEFÁLICA: DOIS DOENTES, DUAS ESTRATÉGIAS

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As estratégias cirúrgicas, convencionais ou endovasculares, que permitem prolongar a patência de um acesso arteriovenoso para hemodiálise, maximizando a utilização do património venoso, beneficiam a sobrevida dos doentes.

Este trabalho pretende apresentar duas estratégias de rentabilização do património venoso do antebraço, após falência da drenagem de fístula arteriovenosa (FAV) úmero-cefálica.
O primeiro caso relata um paciente com uma FAV úmero-cefálica, com disfunção devido à oclusão da veia cefálica. A FAV permaneceu parcialmente funcionante, mantendo a drenagem retrógrada pela veia radial-cefálica, que através de uma colateral drenava, ao nível do punho, para a veia cúbito-basílica e, posteriormente, para a veia basílica. Tendo em conta a disfunção persistente da FAV e o desenvolvimento de um quadro de hipertensão venosa com edema da mão ipsilateral, realizou-se, com sucesso, a dilatação da colateral através de uma angioplastia com balão.

No segundo caso, o paciente também tinha uma FAV úmero-cefálica com oclusão da drenagem pela veia cefálica. A FAV estava disfuncionante e verificava-se um quadro de hipertensão venosa. Após avaliação por ecodoppler, optou-se por uma intervenção cirúrgica convencional, realizando-se transposição parcial das veias radial-cefálica e cúbito-basílica com anastomose, em término-terminal, na vertente anterior do antebraço. O procedimento decorreu sem intercorrências e com sucesso hemodinâmico.
A análise destes dois casos demonstra que a rentabilização do património venoso pode ser concretizada através de diferentes modalidades terapêuticas, devendo a escolha ser adaptada às características de cada paciente.

CO16

QUAL O PAPEL DO TSDT DE RADIOLOGIA, COMO PARTE INTEGRANTE DA EQUIPA DA CIRURGIA VASCULAR, NOS PROCEDIMENTOS DE RADIOLOGIA DE INTERVENÇÃO? A REALIDADE DO GRUPO DE ESTUDOS VASCULARES (GEV)

Ariana Nunes, Duarte Rego, António Norton de Matos

Grupo de Estudos Vasculares

A radiologia de intervenção é um *gold standard* no diagnóstico de patologia vascular (Tang et al., 2024). Sendo que um importante avanço nesta área foi, sem dúvida, a angiografia por cateter (Bercovich & Javitt, 2018). O Técnico Superior de Diagnóstico e Terapêutica (TSDT) de Radiologia desempenha um papel vital no contexto destes procedimentos de intervenção e na cirurgia vascular. As suas responsabilidades abrangem várias áreas essenciais que garantem a eficácia, segurança e qualidade do procedimento.
Esta exposição apresenta como principal objetivo a revisão de conceitos teóricos inerentes à radiologia de intervenção, a descrição e importância do TSDT de Radiologia nos procedimentos endovasculares, diagnósticos ou terapêuticos, realizados pela cirurgia vascular no âmbito do GEV bem como a sistematização da realidade da aplicação do arco em C nestes mesmos procedimentos.

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CO17

RECOGNIZING AND MANAGING ISCHEMIC MONOMELIC NEUROPATHY: A CLINICAL CASE

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Introduction: Ischemic monomelic neuropathy (IMN) is a rare complication of arteriovenous graft (AVG) and arteriovenous fistula (AVF) creation and can lead to sensory and motor limb disfunction.
Diagnosis is challenging and immediate AVG or AVF closure is recommended to prevent further neurological deficit.
We hereby present a case of IMN following axillo-axillary AVG creation.

Case report: A 79-year-old male with end-stage renal disease and type II diabetes mellitus was admitted for axillo-axillary AVG creation on the right arm.
3 hours after surgery, patient felt severe pain and paresthesia of the right forearm and hand. He was unable to flex the first three fingers and had hypoesthesia involving the palm and dorsum of the right hand. The right hand was warm, and the radial pulse was well palpable. Neurology evaluation confirmed median nerve palsy.
Considering the acute onset of median nerve dysfunction after the creation of an AVG, without signs of hand ischemia, the diagnosis of IMN was considered. Patient underwent emergent AVG closure in the first 24h post-surgery.
Patient showed mild improvement in fingers flexion, but paresthesia and pain in the right hand persisted.

Discussion: IMN is a severe complication of AVG and AVF placement. It is due to reduced collateral flow in vessels to major peripheral nerves, resulting in ischemic axonal injuries.
Risk factors include diabetes, pre-existing neuropathy, and peripheral artery disease. The patient generally presents with early post-operative sensory or motor loss in the distribution of one or all three major peripheral nerves, without significant clinical ischemia.
Diagnosis is primarily clinical, but nerve conductions studies can confirm axonal loss and reduced motor and sensory nerve conduction velocities. In our case, we had high clinical suspicion and decided not to delay treatment.
Prompt AVG or AVF closure is recommended, although persistent neurological deficits are common. Post AVG closure, our patient had mild motor improvement but continued sensory impairment.
Conclusion: It is important for vascular surgeons to be knowledgeable about the potential consequences of IMN to provide early diagnosis and intervention, preventing permanent severe limb malfunction in patients.

CO18

ARTERIOVENOUS FISTULA ULCERS: DATA FROM A VASCULAR ACCESS CENTER

Bruno Fraga Dias, Duarte Rego, Luís Loureiro, Sérgio Teixeira, Paulo Almeida, Norton de Matos

Centro Hospitalar Universitário de Santo António

Introduction: Ulcers associated with arteriovenous fistula (AVF) cannulation sites are rare but can lead to vascular access loss or even fatal hemorrhage. The increasing incidence of ulcers and pseudoaneurysms is linked to repeated cannulation without rotation.
Treatment involves surgical intervention and addressing underlying vascular pathologies, such as outflow stenosis and high flow, although their role is under-reported in the literature.
This study provides insights from a Portuguese vascular access center.

Methods: This retrospective study included all patients evaluated for AVF ulcers between January 2023 and September 2024. Data on demographics, vascular access history, patency, and subsequent treatments were collected.

Results: Nine patients with AVF-associated ulcers were included: 55.6% men (n=5) and 44.4% women (n=4), with a mean age of 76 ± 7 years. Five patients (55.6%) were diabetic. The AVF location included brachio-cephalic AVF in 55.6% (n=5), radio-cephalic AVF in 22.2% (n=2), and transposed brachio-basilic in 22.2% (n=2).

The mean AVF age was 7.8 ± 4 years. The most common cannulation method was area puncture (n=7, 77.8%), followed by buttonhole (n=1) and an unknown technique (n=1).
Five patients had known vascular access pathology in the past: three had previously been treated for outflow stenosis, one had been treated for outflow stenosis and high flow, and one was under surveillance for both outflow stenosis and high-flow AVF.
At the time of ulcer diagnosis, eight patients had outflow stenosis, which was treated with angioplasty in five cases.
Eight patients underwent successful lesion repair. In one case, the vascular access had to be abandoned due to vein fragility, leading to the construction of a PTFE graft.
The mean AVF post-intervention patency was 196 ± 199 days.

Conclusion: This data highlights the role of outflow stenosis, present in 88.9% of cases, in the pathophysiology of AVF ulcers, particularly when associated with high-flow AVF. Surgical correction and endovascular interventions were effective in maintaining patency in most of our patients.

Ongoing clinical training on proper needle rotation, early detection of outflow stenosis through clinical and ultrasound monitoring, and individualized treatment discussions are crucial in preventing and managing this condition.

CO19

EXERCISE-INDUCED KIDNEY GRAFT DYSFUNCTION IN AORTOILIAC OCCLUSIVE DISEASE

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Introduction: Kidney allograft recipients typically have high cardiovascular risk. Aortoiliac occlusive disease can induce graft dysfunction associated with exercise. We present two cases of exercise-induced kidney graft dysfunction associated with proximal aortoiliac peripheral arterial disease (PAD).

Case Reports: Case 1 – A 51-year-old female with multiple risk factors and known peripheral arterial disease, was admitted to our center after a progressive decrease in graft function 20 months after transplant surgery. Diuresis was more significant during the night period. Doppler ultrasound detected a

significant stenosis of the common iliac artery, and the patient was successfully treated with a kissing stent of the iliac confluence with resolution of symptoms.

Case 2 - 60-year-old male patient with chronic kidney disease secondary to diabetic nephropathy, who had undergone a successful kidney transplant 20 years earlier. The patient had intermittent claudication and reported decreased diuresis during the day with incrementation during the night period. Graft function was normal. The patient was submitted to common and external iliac artery angioplasty with full resolution of symptoms.

Conclusion: Exercise-induced graft steal syndrome occurs is a rare entity. Aortoiliac revascularization can be a safe option, accomplishing treatment for both kidney dysfunction and PAD.