fistula post Aorto-bi-femoral graft presented with life threating bleeding managed by endovascular stenting by covered stent.

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HERO® Graft Placement: Getting Rid of the Catheter in Patients with Central Stenosis

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Background: Central venous stenosis and occlusion are a major cause of vascular access dysfunction and failure. The HeRO® Graft provides access for patients with central venous occlusion who are catheter-dependent or have failing fistulae or grafts by providing reliable venous outflow directly into the right atrium [Figure 1c and d]. Moreover, when combined with the use of early cannulation grafts it has the advantage of immediate access directly after the procedure. We reviewed our experience using the strategy of combining the use of HeRO graft with early cannulation graft. **Method(s):** Patients with suspected central venous occlusion or stenosis who are catheter-dependent or have failing fistulae or grafts were discussed in multi-disciplinary meetings. Only patients with central venous stenosis or occlusion confirmed by CT or conventional venogram were included [Figure 1a and b]. Patients with active infection, brachial artery diameter less than 3 mm, hypercoagulable state and ejection fraction less than 20 were excluded. **Result(s):** Five hemodialysis patients with history of multiple failed arteriovenous access and confirmed central venous occlusion were recruited. All patients underwent successful placement of HeRO graft in combination with early cannulation graft [Figure 1c and d]. All grafts were accessed within 48 hours. Median follow up was 219 days (range 32 -240 days). No adverse events were noted during the follow up period. HeRO graft thrombosis occurred in three patients, requiring re-intervention using percutaneous thrombectomy, primary patency 40%. All five grafts remain patent and functional, secondary patency 100%. **Conclusion(s):** HeRO® graft placement can provide vascular access in hemodialysis patients with central venous occlusion who would otherwise remain catheter dependent. Combining the use of early cannulation graft with HeRO graft placement can further reduce catheter dependence and does not appear to impact HeRO graft secondary patency.

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Drug-Coated Balloon use in Dysfunctional Arterio-Venous Access Treatment the Effect of Consecutive Treatments in Target Lesion Primary Patency

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Background: This was a retrospective longitudinal analysis investigating the safety and effectiveness of consecutive treatments with the Lutonix Drug-Coated Balloons (DCB) in dysfunctional arteriovenous access; both fistulae (AVF) and grafts (AVG). **Method(s):** From January 2015 to December 2017 (3 years), 339 Lutonix DCB were used in 257 procedures of 165 patients with a dysfunctional AVF or AVG. Of these patients, 33 had ≥2 procedures, adequate data and were included in the analysis. In these patients, 112 procedures were performed (22 treated twice, 4 patients 3 times, 7 patients 4 times, 2 patients 5 times and 3 patients 6 times) using 133 devices. Mean lesion follow-up was 247 days (min. 20 days – max. 908 days). Mean balloon diameter was 8.13 mm (3-12 mm) and length 63.16 mm (40-150 mm). Primary outcome measure safety, defined as freedom from any serious adverse event(s) involving the AV access circuit through 30 days for all procedures and target lesion primary patency (TLPP). Secondary outcome measures included investigation of independent factors that may influence outcomes. **Result(s):** Safety was reached in all cases (112/112 procedures, 100%). Median TLPP was 227 days for the first intervention and 280 days for the second consecutive intervention [p=0.37; Hazard ratio: 1.271 (CI: 0.75-2.16)]. **Conclusion(s):** Consecutive use of the Lutonix DCB for the treatment of dysfunctional dialysis access was safe. There was no significant difference in TLPP between the 1st and 2nd procedure, although a numerical improvement was observed. Results suggest consistency in TLPP regardless of the aging arterio-venous access.

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The Use of Supera Stents in Maintaining Dysfunctional Dialysis Arterioveonus Fistulas: A Single Center Experience

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Background: Dialysis access failure is a major cause of mortality and morbidity among dialysis patients. Preservation of access is critical to maintaining hemodialysis, avoiding uremia, and managing the complications of kidney failure. The usual IR approach to thrombosed or stenosed arteriovenous fistula (AVF) is a combination of thrombectomy and balloon angioplasty of the underlying lesion. Stents and stent grafts appear to be an ideal method to treat thrombosis or neointimal hyperplastic stenosis. These safe endovascular device stents improving blood flow through the fistula or graft as they oppose elastic recoil and subsequent thrombosis. Stent placement is minimally invasive procedure, performed by IR doctors utilizing ultrasound and fluoroscopic guidance with rare complication and less stay in the hospital. The main indications of these procedure are early recurrent thrombosis, recoil stenosis and pseudoaneurysm of AVF. **Method(s):** This is a retrospective study of 11 consecutive patients (6 females) with mean age of 56 years, who underwent

Supera stent placement for salvage of dialysis AVF between December 2016 to July 2018. Nine patients had brachiocephalic fistula and 2 patients had brachiobasilic fistula. Patients presented with fistula thrombosis (n=8) and dysfunction (n=3). Lesions were distributed along the venous outflow including the cephalic arch (n=5) and juxta-anastomotic needling segment (n=6). Evaluated outcomes included technical success, primary stent and circuit patency. Other outcomes were time to re-intervention and secondary patency. **Result(s):** Technical success was (100%). One stent stretched into the access sheath and was successfully removed through the puncture site, and a new stent was successfully deployed. Three patients required additional stent grafts at other sites during the index procedure. No major complications. Fistula function was restored in all patients with no additional interventions for a mean time of 242 days (50-734 days). Seven patients required re-intervention at mean time of 131 days (50-262 days). Reasons for re-interventions included inflow stenosis (n=5), outflow stenosis (n=1) and in-stent stenosis (n=1). Seven fistulas remain patent at mean follow up time of 484 days (136-734 days). **Conclusion(s):** Supera stent placement in AVF stenosis refractory to balloon angioplasty is technically feasible and may be effective in maintaining fistula function. Further evaluation of this technique requires larger randomized studies.

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Angioplasty of Forearm Arteries: A New Approach to Manage Dialysis-Associated Steal Syndrome

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Background: The steal syndrome is an ischemia of the hand, secondary to a decrease of its peripheral perfusion, due to the confection of a vascular access for hemodialysis, usually an arterio-venous fistula of the upper limbs. This syndrome is due to a local hemodynamic change and to the diversion of the distal arterial blood to the venous system. Its origin might be either hemodynamic, arterial or venous. The affection of the distal fore-arm arteries might be an etiology, yet neglected. This rare affection is rare but potentially disabling might be revealed by pain following an effort or even at rest and it might also be revealed by an ulcer, necrosis or gangrene. In the litterature and also in the daily practise, the treatment of this syndrome is usually a surgical treatment and it consists in decreasing the blood flow through the arteriovenous shunt or in enhancing the distal perfusion circumventing the arteriovenous fistula. There is only few data in the litterature concerning the endovascular treatment of arterial lesions of the fore-arm symptomatic of steal syndrome with arteriovenous fistula in patients suffering of chronic renal failure. The aim of our study is to evaluate the feasibility, the security and the results of the angioplasty of fore-arm arteries in the management of dialysis -associated steal syndrome. **Method(s):** We herein describe four cases of male patients with terminal chronic renal failure at the stage of hemodialysis via an arteriovenous fistula of the upper limbs. All patients were symptomatic of steal syndrome. Dupplex ultrasound and CT angiography were the examinations for the diagnosis of arteritis of the forearm. **Result(s):** All the patients underwent endovascular therapy. We proceeded with an angioplasty of the different lesions of the forearm arteries. The immediate postoperative course was marked by the presence of distal pulses and less ischemic pain. Long term out come was marked by healing of the amputation site,pain disappearing and functional arteriovenous fistula. **Conclusion(s):** The treatment methods that the vascular surgeon has are various and the endovascular treatment seems to become the treatment of choice. This procedure is simple, secure with an interesting good rate of limb salvage. It allows to treat the ischemia, preserve the vascular access and avoid the surgical intervention in patients with heavy medical history.

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Endovascular Interventions in Obstetric Emergencies: A Game changer

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Background: To evaluate role of endovascular IR procedures in obstetric emergencies. **Method(s):** In this ethically approved study a total of 33 patients presenting with obstetric emergencies were recruited during the period September 2017 to October 2018 after taking informed consent. The clinical success and complications were evaluated. **Result(s):** The spectrum of obstetric emergencies encountered were uterine arteriovenous malformations in 13 (40%) patients, retained products of conception or retained adherent placenta in 8 (24%), placenta accreta in 8 (24%), retained products of conception with secondary arteriovenous malformations in 3 (9%) patients, and pseudoaneurysm in 1 (3%) patient. A total of 28 uterine artery embolizations (repeat procedure required in 3 patients) were performed with clinical success in all the patients. Prophylactic intraoperative balloon occlusion of bilateral internal iliac arteries was done in 8 patients with suspected placenta accreta. Of these 3 patients (37.5%) had focal placenta accreta which separated after delivery of baby whereas the remaining 5 (62.5%) patients underwent hysterectomy with mean intraoperative blood loss of 3.31 (0.8-6.8) litres and relative ease of hysterectomy for surgeons. There were no major complications, however minor complications were seen in 10 (30%) patients. These included periprocedural pain in 3 (9%) patients, post embolization syndrome in 5 (15%) patients and puncture site hematoma in 2 (6%) patients. All these resolved on conservative management. **Conclusion(s):** Interventional radiological procedures are helpful in obstetric emergencies with significant clinical success rate and low complication rate.