

were female and three were male, with a mean age of 50 years and median of 48. Five patients were with lower GI bleed and two had upper GI hemorrhage. For knowledge of vascular anatomy or the presence of any variants, computed tomographic angiography was performed in all cases. The patients were treated with superselective transarterial embolization under fluoroscopic guidance (Siemens ARTIS ZEE) at RMI angiography suite. Embolization materials used were coils, particles, gel foam, and amplatzer plugs. **Results:** All the seven patients were embolized, with five having lower GI causes and two with upper GI causes. Six patients had vascular causes of hemorrhage, i.e., Arteriovenous malformations, angiodysplasia, and dieulafoy. One patient had a tumoral bleed from duodenal mass. Six patients were embolized with curative intent, whereas one patient with bleeding duodenal mass was embolized preoperatively, just before the surgery. Coils of different sizes were used in all cases. Technical success, immediate clinical success, and late success on follow-up of 1 year were recorded in all cases. Technical success in arresting hemorrhage was achieved in all cases. 0% in-hospital mortality was recorded in all cases. **Conclusion:** We concluded from our results that endovascular embolization is a management of choice in cases with acute GI bleeding, after endoscopic attempts have failed/deemed inappropriate. Endovascular treatment is a safe and effective technique with a small associated risk of morbidity. Risk of further bleeding is small with vast majority of patients achieving resolution of symptoms.

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Angioseal-Assisted Closure of Arterial Pseudoaneurysm in Cases of Allergy to Thrombin and Uncorrectable Coagulation: A Case Report

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There are very limited data on the use of angio-seal closure device to treat common femoral artery pseudoaneurysm. Here, we present a case of right groin pseudoaneurysm treated with a closure device. A 45-year-old male presented with a pseudoaneurysm at the right groin. The patient has an abnormal uncorrected coagulation and underwent a thrombin injection before 1 week. Given that the patient underwent a thrombin injection 1-week prior, the potential risk of developing an anaphylactic reaction was unpredictable. Therefore, ultrasound-guided compression was carried out for 30 min without success. Consequently, an autologous clot injection inside the pseudoaneurysm by stirring blood gathered from the perma-cath port was done after suspension for more than 10 min, and unfortunately, there was no evidence of clot formation and until the end for this procedure. Therefore, the plan was changed to place a closure device across the pseudoaneurysm neck. After puncturing the sac, the needle was advanced carefully through the narrowed-pseudoaneurysm neck to the common femoral artery under ultrasound guidance. After advancing the guidewire and removing the needle under fluoroscopic guidance, a 6-F angio-seal closure device was deployed across the pseudoaneurysm

neck under ultrasound guidance; homeostasis was achieved with no evidence of flow into the pseudoaneurysm by color Doppler. This technique seems to be safe and successful in treating pseudoaneurysm in cases of allergic to thrombin and uncorrectable coagulation.

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Embolized Venous Stent in the Right Ventricle, What to Do? A Case Report

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Background: Subclavian vein stenosis is not an uncommon condition in end-stage renal failure patient due to reaction to dialysis central catheters. **Methods:** This is a case report of a patient with right subclavian vein stenosis treated with venoplasty and a 12-mm self-expandable stent deployed which has embolized to the right ventricle. **Results:** A unique approach of using two snares from the cephalic vein and femoral vein has been used to retract the stent from the right ventricle to left common femoral vein. **Conclusion:** Foreign body inside the heart is a unique and rare situation, and multiple modalities have been used to deal with this situation; we present one way to dealing with this complication that can be helpful in future similar cases.

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Inferior Vena Cava Filters

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Objectives: Inferior vena cava (IVC) filters have been retrieved after prolonged dwell times; however, the rate of success decreases over time. Embedded or perforated filter components increase the risk of vascular injury and are common reasons for failed retrieval. Advanced techniques, including the use of endobronchial forceps, can be employed to remove tip-embedded filters and filters with prolonged dwell times; however, these removals are riskier than standard filter retrievals. IVC pseudoaneurysm is a form of vascular injury which has been rarely reported after IVC filter retrieval. This report describes the management of an IVC pseudoaneurysm following the endobronchial forceps retrieval of a 28-year-old Greenfield filter. **Methods:** A 71-year-old male with a history of traumatic brain injury and prophylactically placed titanium Greenfield IVC filter in 1990 presented for the consideration of IVC filter retrieval. A computed tomography (CT) scan revealed moderate caval stenosis, 40° of apical tilt, likely apex embedment, and perforation of two medial struts through the caval wall, abutting the aorta and lumbar artery. The patient complained of focal abdominal pain corresponding to the area of the filter, strongly desired filter retrieval, and had no ongoing indications for filtration. After a detailed discussion with the patient regarding the risk of retrieval, the decision was made to attempt filter retrieval to improve the patient's symptoms and decrease the risks of arterial injury from strut perforation and further caval stenosis or thrombosis. **Results:** Due to jugular vein occlusion, femoral access was initially

obtained to provide a target for fluoroscopic access into a retroclavicular collateral from above, facilitating large sheath insertion and endobronchial forceps retrieval of the filter, which required surprisingly little force. Following retrieval, contained extravasation was observed at the previous site of the filter struts. Despite balloon-tamponade and an attempt at flow diversion using a bare-metal stent, the pseudoaneurysm continued to fill. A catheter was advanced through the stent interstices into the pseudoaneurysm, which was treated with balloon-controlled thrombin administration. After 5 min, repeat Intra vascular Ultrasound (IVUS) showed pseudoaneurysm thrombosis. The final venogram revealed no further contrast extravasation and a patent IVC. The patient was discharged on postoperative day 2. At the 5-month postoperative follow-up visit, the patient reported resolution of previous abdominal pain and CT scan re-demonstrated patent IVC. **Conclusion:** Extended dwell times and penetrating IVC filters increase the risk of retrieval complications. While conservative treatment options should be considered first, physicians performing high-risk retrievals should understand and be prepared for rare complications.

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Fibrin Sheath Removal from Port-A-Cath by Exteriorization of the Catheter by Snaring Through a Shortened Vascular Sheath: A Novel Technique

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Objectives: Port-a-caths are commonly placed central venous access devices in children. Fibrin sheath formation is a common complication, leading to port malfunction. Unlike other tunneled central line, port-a-caths cannot easily be exchanged over a wire. Treatment of fibrin sheath formation includes fibrinolytic therapy, fibrin sheath stripping via transfemoral route or replacement. We describe an alternative minimally invasive technique of fibrin sheath removal. **Methods:** This novel technique was performed on four patients with port-a-cath who had failed fibrinolytic therapy and presence of fibrin sheath confirmed on contrast injection. The port was accessed under aseptic precautions. Ultrasound-guided right internal jugular vein access was performed just cranial to previous catheter insertion site, and shortened vascular sheath, which was one and half times larger French size relative to the size of the port catheter, was inserted. Catheter tip was successfully snared under fluoroscopic guidance using a 30 mm Goose Neck snare. Catheter was then exteriorized through the sheath. Catheter was then cleaned with a wet Telfa gauze to clear any fibrin sheath. A 0.018" Nitrex wire was also passed through the catheter to clear intracatheter clot or debris. Catheter was reinserted back through the vascular sheath into right atrium with the help of snare. **Results:** Port-a-cath function was restored in all four patients with satisfactory flushing and aspiration. Contrast venogram was performed to confirm function and no residual fibrin sheath was demonstrated. No complications were encountered. **Conclusion:** Fibrin sheath removal by exteriorization of port catheter by snaring through shortened vascular sheath is

an attractive alternative which is minimally invasive and highly effective, compared to traditional stripping or replacement with new port.

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Transarterial Embolization of the Renal Arteries for the Management of Iatrogenic Renal Vascular Injuries: Two Centers Experience in 150+ Patients

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Objectives: Nephrourologic percutaneous interventions namely percutaneous nephrolithotomy (PCNL), percutaneous nephrostomy (PCN), and renal biopsy are common minimally invasive procedures; however, they can be associated with massive life-threatening hemorrhage. Conventional surgical management in the form of partial and total nephrectomy is usually associated with marked comorbidity and massive renal parenchymal loss. This study aims to retrospectively assess the technique and short-term hemostasis of transarterial renal artery embolization in iatrogenic vascular injuries in two centers. **Methods:** A total of 154 patients (90 males and 64 females) with suspected renal vascular trauma (107 post-PCNL, 46 postrenal biopsy, and 1 post-PCN) either presenting with hematuria (120 patients) or increasing perinephric hematoma by ultrasonography (34 patients) were referred to both institutes for the possibility of embolization. Embolization was done with variable-sized vascular coils in 133 patients, hand-cut gel foam pledgets in 13 cases, and NBCA in three patients with marked hemodynamic instability. Five patients had negative angiographic findings, so embolization was not done. **Results:** The bleeding artery could be identified and embolized in 149 patients; in patients with negative angiography, no further intervention was done. A total of 146 patients showed clinical improvement in the form of stoppage of hematuria and stabilized vital data. Rebleeding occurred in three patients (all embolized by gel foam) who were treated by another session of embolization with combined gel foam and NBCA. None of the treated patients needed any further surgical treatment. No major complications occurred. **Conclusion:** In this large-volume series, transarterial renal artery embolization has shown to be an effective option in the management of iatrogenic renal vascular injuries with high hemostasis as well as low complication rates.

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Anaphylaxis Following Angioplasty of the Superficial Femoral Artery with Paclitaxel-Coated Balloon: A Case Report

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