

MYSIR's Abstracts 4

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DOI: <https://doi.org/10.32896/tij.v4n4.31-40>**Published:** 31/12/2024**AN UNUSUAL CASE OF RECTUS SHEATH HEMATOMA AND EXTRAPERITONEAL HEMATOMA WITH SPONTANEOUS INFERIOR EPIGASTRIC ARTERY RUPTURE TREATED SUCCESSFULLY BY ANGIOEMBOLIZATION- HISTOACRYL GLUE**M.Z. Abdul Muien¹, J.C. Low¹¹Radiology Department, Hospital Canselor Tuanku Muhriz, UKM, Ministry of Higher Education.

Introduction: Rectus sheath hematoma and extraperitoneal hematoma with spontaneous inferior epigastric artery (IEA) rupture secondary to enoxaparin are uncommon and frequently misdiagnosed as other causes of abdominal pain. Here we report a rare case of rectus sheath hematoma and extraperitoneal hematoma with spontaneous IEA rupture secondary to enoxaparin, diagnosed with computed tomography (CT) and treated with angioembolization, in a 58-year-old woman. This case underscores the significance of imaging to detect active bleeding, which may necessitate intervention.

Report: A rare case of rectus sheath hematoma and extraperitoneal hematoma with spontaneous IEA rupture secondary to enoxaparin, diagnosed with computed tomography (CT) and treated with angioembolization, in a 58-year-old woman. She initially presented with flu-like symptoms, which progressed to severe pneumonia complicated with right main pulmonary artery embolism, requiring enoxaparin treatment. Persistent hemoglobin drops and a palpable suprapubic mass, prompted further investigation. A contrast-enhanced abdominal CT scan demonstrated right rectus sheath hematoma with extraperitoneal extension; angiography with selective embolization of branch of right inferior epigastric artery was successfully performed with histoacryl glue.

Conclusion: Enoxaparin-induced bleeding is a well-documented adverse reaction, although the occurrence of a rectus sheath hematoma with extraperitoneal extension is rare and possibly life-threatening. High clinical suspicion of bleeding should be suspected in patients with a combination of clinical and biochemical evidence of bleeding. It is important for radiologists to recognize this entity as they can mimic other masses. This case underscores the significance of imaging to detect active bleeding, which may necessitate intervention.

described for the management of posttraumatic arterial injuries. However, it has shown promising evidence in treating iatrogenic vascular injuries.

VENOUS CONGESTIVE ENCEPHALOPATHY IN A CASE OF ACUTE ON CHRONIC TOTAL CENTRAL VEIN OCCLUSION IN PATIENT WITH LEFT BRACHIOBASILIC ARTERIOVENOUS FISTULA

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Introduction: Venous Congestive Encephalopathy (VCE) is a rare complication with scanty case reports described in arteriovenous graft. It can present as intracranial bleeding, cerebral venous hypertension, cerebral venous infarction, papilloedema, and encephalopathy of varying severity. We report a potentially first case of VCE caused by acute or chronic total central vein occlusion (TCVO) in a patient with left brachiobasilic (BB) AVF.

Report: A 75-year-old man with ESRD, on hemodialysis since Nov-2019 had interim hemodialysis via internal jugular catheter for 6-months prior to the successful cannulation of his left BBAVF. The BBAVF has no issue 4-years post-creation until he complained of left upper limb and neck swelling for the past 3-months. He presented with 1-2 minutes sudden onset of generalised tonic clonic seizure/time for 5-episodes. He was intubated and treated for meningoencephalitis.

Results: CT brain venogram didn't show venous sinus thrombosis and meningoencephalitis work-up was negative. MRI brain showed left hippocampal FLAIR-hyperintensity with no restricted diffusion or enhancement and incidental finding of prominent veins with extensive left sided scalp edema. Cerebral angiogram noted occluded left dural venous system causing pseudophlebitic pattern of left temporal and parietal cortical veins without evidence of dura AV-fistula. Central venogram showed TCVO at innominate vein with no collateralisation to the neck or upper chest, but directly into left IJV. Clot was observed and macerated with angioplastic balloon during venoplasty. He regained full consciousness immediate post-intervention with good results and was planned for second stage innominate vein stenting.

Conclusion: This case underscores the significance of early diagnosis and treatment of symptomatic central vein stenosis that may present as VCE in a case of acute or chronic TCVO at innominate vein with immature venous collateralisation.

NOVEL ENDOVASCULAR DIRECT INTRACLOT-THROMBOLYSIS COUPLED WITH MODIFIED ASPIRATION THROMBECTOMY TECHNIQUE IN A SERIES OF THROMBOSED ARTERIOVENOUS FISTULA WITH LARGE ANEURYSM AND HIGH CLOT-BURDEN

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Introduction: Arteriovenous fistula (AVF) thrombosis is a well-known associated dialysis access complication that leads to interruption of hemodialysis, increases morbidity and mortality. Though endovascular equipment is well designed for the intended use with promising effectiveness, however, if the thrombosed fistula comes with high clot-burden and large aneurysmal clot(s), it is only effective with open thrombectomy technique. Hereby, we present two cases of thrombosed AVF successfully managed using intraclot-thrombolysis with modified aspiration thrombectomy techniques.

Report: Case-1: 77-year-old woman with aortic stenosis, was dialysed for 17-years via left Radiocephalic (RC)-AVF. She presented with no thrill over the aneurysmal segment. Ultrasound (USG) revealed a total clot at the A and V aneurysms with stenosis at intercannulation segment. The clot is of subacute and chronic stage. Due to financial issues, procedure was done after 17 days.

Case-2: 58-year-old man with diabetes mellitus and hypertension, was dialysed for 6-years via left RC-AVF. He presented with difficult cannulation at V-aneurysm and clot aspirated. USG revealed a large clot at V-aneurysm occluding almost 95% of the venous outflow. The clot is of acute and subacute stage. His case was dealt within 48 hours of diagnosis.

Conclusion: The cases underscore the possibility of novel, low-cost, safe, and effective endovascular treatment without the need for open thrombectomy in thrombosed AVF with large aneurysms and high clot-burden.

RECURRENT SHOULDER HAEMARTHOSIS DUE TO VASCULAR PROLIFERATIVE SYNOVITIS: IMPORTANT ROLE OF TRANSARTERIAL EMBOLISATION IN PATIENT MANAGEMENT

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Introduction: An 87-year-old lady with no history of trauma or coagulopathy presented with repeated hemarthrosis of her left shoulder. At presentation, a diagnostic left shoulder joint aspiration was performed which revealed relatively fresh blood. Patient proceeded with CTA of the left shoulder to exclude active bleed.

Results: The CTA findings include glenohumeral joint degenerative changes with no bony erosion, proliferative synovium and abnormal enlarged left axillary vessels. Patient was treated conservatively but came back few days later with pain, markedly swollen left shoulder joint and ecchymoses. Patient underwent diagnostic laparoscopy and surgery with removal of the hypertrophied vascular synovium. Post laparoscopic synovectomy, patient symptoms improved significantly with no further episodes of hemarthroses. However, a month's later patient presented again with pain and swelling of the left shoulder joint. An MRI was requested and showed reduced bulk of the proliferative synovium with joint hemarthrosis. Patient was treated conservatively as no further surgery was contemplated. A week later patient presented again with recurrent signs and symptoms. This time interventional radiologist was consulted and suggested for shoulder joint embolization.

Patient underwent diagnostic conventional angiogram and showed abnormal ectatic vessels mainly from the left acromion, left humeral and scapular circumflex arteries with synovial neo-vascularity. The abnormal ectatic arteries were embolised using PVA particles 250-350 microns and gel-foam slurry until near stasis. At 3 months follow up, patient experience no further episodes of significant left shoulder joint hemarthroses and regained some function of the left upper limb.

Conclusions: Embolisation of recurrent hemarthrosis in shoulder point may play a major role in management of the patients with vascular proliferative synovitis. Embolization of the abnormal vessels which has tendency to bleed, incur more permanent solution in patient where role of surgery is limited or contraindicated.

TECHNICAL APPROACH AND CLINICAL UTILISATION OF DUAL PHASE CONE-BEAM COMPUTED TOMOGRAPHY (DP-CBCT) IN TRANSCATHETER ARTERIAL CHEMOEMBOLIZATION OF LIVER METASTASES: INITIAL EXPERIENCE

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Introduction: Transcatheter Arterial Chemoembolization (TACE) is a widely accepted treatment for primary and secondary liver cancers. Although cone-beam computed tomography (CBCT) has been used to aid embolization planning of liver metastases (eg. identifying feeding arteries), liver metastases are usually not well visualised in the arterial phase. Recent application of dual-phase CBCT (DP-CBCT) provides better depiction of the liver metastases.

Methods: Four examinations were performed in 2024 for TACE in liver metastases with DP-CBCT protocol. Three patients had colorectal liver metastases while one patient had breast carcinoma liver metastases. All examinations were performed with bi-plane flat detector C-arm angiographic system (Philips Azurion 7 FD 20/15, Philips Medical System). Dual Phase CBCT (XperCT Dual - Roll) images were acquired using 8 seconds c-arm rotation with speed of 60 frames per second (fps). DP-CBCT was performed with the tip of the diagnostic catheter at the hepatic artery proper with an optimal injection protocol achieved in dilution of 20% normal saline and 80 % contrast (Iopamiro 300). An injection rate of 3.0ml/s with a total volume of 24 ml was performed in 1-2 second x-ray delay of contrast arrival time based on DSA of hepatic arterial phase. The scan interval time for venous phase is justified on DSA venous phase with a minimum of 2 second interval time.

Results: 60% of the lesion could not be identified on digital subtraction angiography of the hepatic artery or arterial phase of DP-CBCT. However, these lesions show well-defined delineation with the liver parenchyma in the venous phase of DP-CBCT. Hyperdense rim enhancement of liver metastases were observed on venous phase of DP-CBCT which coincides with contrast deposition after TACE with degradable starch microspheres.

Conclusions: Dual Phase CBCT demonstrates advantage and potential to improve treatment planning of TACE for liver metastases.

EFFECTIVENESS OF MULTIDISCIPLINARY DIALYSIS ACCESS INTERVENTION TEAM IN THE MANAGEMENT OF HAEMODIALYSIS ACCESS DYSFUNCTION

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Introduction: A dedicated dialysis access intervention team comprised of Vascular surgery, Interventional Radiology, and Interventional Nephrology (VIRGIN) was established to perform endovascular procedures for patient admitted to our centre with haemodialysis access dysfunction via the AVF clinic and emergency department University Malaya Medical Centre (UMMC).

Methods: We retrospectively collected data from electronic medical records for the dialysis access percutaneous endovascular interventions performed in Angiography & Vascular Interventional Radiology from 1/1/2023-31/12/2023 and analysed the difference between the pre-VIRGIN era and post-VIRGIN era. Outcome measures include time-to-intervention from diagnosis for patient planned for fistuloplasty and/or thrombectomy.

Results: A total of 96 endovascular interventions (23 thrombectomies) were performed on 85 patients. Forty-one interventions were done during pre-VIRGIN, and 55 cases were done during VIRGIN era (24 cases, 43.6% involved IN). Post-implementation, median time-to-intervention improved from 38.0 (IQR 34.25, 46.75) days to 28.0 (IQR 18.0, 45.0) days, $p < 0.003$ for fistuloplasty (1.36x faster); 21.0 (IQR 5.0, 42.0) days to 3.5 (IQR. 1.25, 6.75) days, $p = 0.022$, for all thrombectomy (6x faster); and median time-to-intervention improved from 21.0 (IQR 5.0, 42.0) days to 2.5 (IQR 0.25, 4.75) days, $p = 0.010$, for thrombectomy with noticeable thrombus during diagnosis (8.4x faster). There was no statistically significant difference in baseline demographics, types of AVF/AVG, types of interventions (fistuloplasty, central venoplasty, thrombectomy, stenting), rate of intervention/month between 2 groups, complication rate, and the downtime of the fluoroscopy machine during the study period.

Conclusion: This multi-disciplinary collaboration such as UMMC VIRGIN team has the potential to represent a promising, effective care model in improving the delivery of healthcare services for patients with dysfunction haemodialysis access.

THERAPEUTIC PERCUTANEOUS ENDOVASCULAR ANGIOPLASTY BALLOON TAMPONADE IN CATHETER RELATED LEFT BRACHIOCEPHALIC VEIN PERFORATION

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Introduction: Dialysis catheters (non-tunneled, NTCC or tunnel cuffed catheter, TCC) used for HD treatment still commonly practice. The dilator with a large caliber is used to insert such catheter, which in turn post risk of complications such as vessel injury especially insertion via left-sided veins. Common treatment options for such complications involved surgical repair by thoracotomy, video-assisted thoracoscopic surgery, and endovascular repair but literature mainly confined to injury related to subclavian vein, subclavian artery, and superior vena cava post insertion. We herein report a case of left brachiocephalic (BCV) perforation treated successfully with only balloon tamponade during the procedure.

Methods: We report an illustrative case of this complication and immediate management without the need of open surgical repair.

Results: An 88-year-old man with ERSB, on regular HD for the past 1-year. He had multiple visits to hospital for dislodge right internal jugular catheter (IJC). Left snuffbox radiocephalic fistula created 8 months ago, but not mature with multiple small stenotic segments. He had left IJC inserted this time, but the tip was malpositioned at the entry point of azygous vein (Fig. 1a). Hence, he was scheduled for left IJC conversion to left IJ-TCC with central venoplasty if indicated.

Pre-procedure USG scan showed right IJV total obstruction with collateral veins. Nitinol 0.035" guidewire (75cm) inserted via the blue lumen and diagnostic central venogram performed via red lumen of the IJC with noted stenosis at right BCV (Fig. 1b). The IJC was exchange with 10Fr vascular sheath via re-route technique. When advancing the vascular sheath under fluoroscopy with tip pointing slightly centrally, patient turned his head to the left suddenly and brief give-away felt. Instantaneously, perforation was suspected and central venogram via the sheath confirmed it (Fig 1c). Semi-compliant angioplasty balloon 10x40mm applied with multiple inflation with short 3-4 minutes interval for around 20 minutes while waiting for ultra non-compliant 14x40mm angioplasty balloon. The 14x40mm balloon was inflated for a total of 7 minutes and the perforation sealed (Fig. 1d)

Conclusion: The case underscores the significance of early recognition and prompt intervention. The successful use of balloon tamponade as a minimally invasive therapeutic approach in this scenario suggests its potential as an effective and safe solution for managing similar complications.

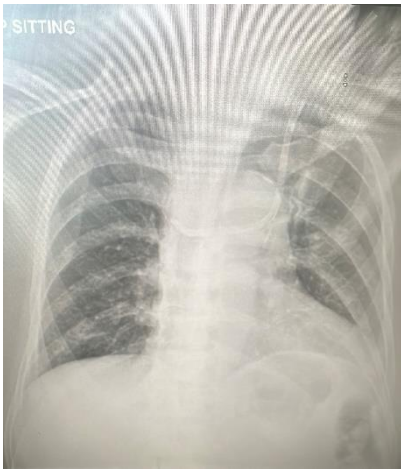


Fig.1a



Fig.1b

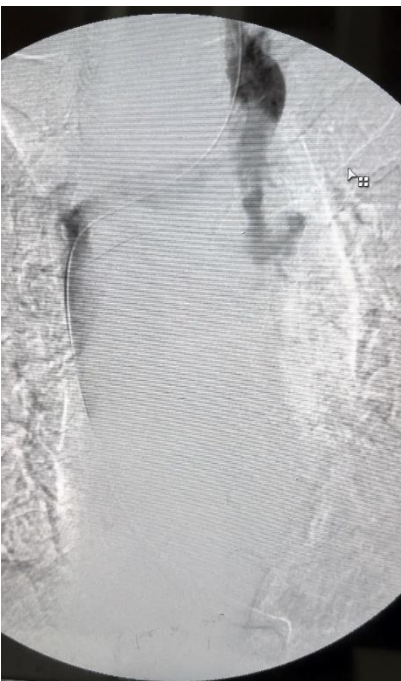


Fig.1c



Fig.1d

UTILISATION OF ASPIRATION THROMBECTOMY DEVICE IN CASES WITH HIGH CLOT BURDEN AND CHRONIC RESTRICTIVE LUNG DISEASE

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Introduction: Arteriovenous fistula (AVF) is the preferred hemodialysis (HD) access, but it is susceptible to thrombosis. Conventional open surgical thrombectomy and new fistula creation are OR dependent. Percutaneous endovascular AVF thrombectomy and angioplasty has its upper hand of immediate access re-usability post-intervention. We hereby present 2-cases utilising endovascular thrombectomy (EVT) in the management of thrombosed fistula with high thrombus load, which resulted in positive short- to mid-term outcomes.

Methods: We report 2-cases of AVF thrombosis managed with an aspiration thrombectomy device.

Results: Case-1: A 79-year-old man with chronic restrictive lung disease had a thrombosed left Radiocephalic AVF. Ultrasound scan (USG) revealed a clot volume of 2000mm³ and 1920mm³ in the 'V' and 'A' aneurysm, respectively (Figure 1). Aspiration thrombectomy was performed to minimise the embolic risk. Post-thrombectomy assessment showed improved brachial artery flow volume (FV). USG in 2 weeks and 12 weeks showed BA-FV of 721.0 ml/min and 1185ml/min, respectively.

Case-2: An 80-year-old woman had a thrombosed right Brachiocephalic AVF. USG revealed thrombosis extend from juxta-anastomotic segment up to the subclavian vein, with clot volume of 3150mm³ and 6750mm³ in the 'A' and 'V' aneurysm respectively (Figure 2). She underwent pharmaco-mechanical thrombectomy, which resulted in good contrast flow along the AVF without residual stenosis. Immediate and repeated USG after 2 weeks showed BA-FV of 533.2ml/min and 584.1ml/min, respectively.

Both were able to resume HD immediately through the same fistula without the need of interim hemodialysis catheter.

Conclusion: EVT demonstrated a feasible and effective method for AVF thrombectomy, especially in cases with a high aneurysmal clot burden, eliminating the risk of clot dispersing into the pulmonary circulation. Besides, it is potentially a more preferred technique in patients with poor respiratory reserve and high thrombus load.

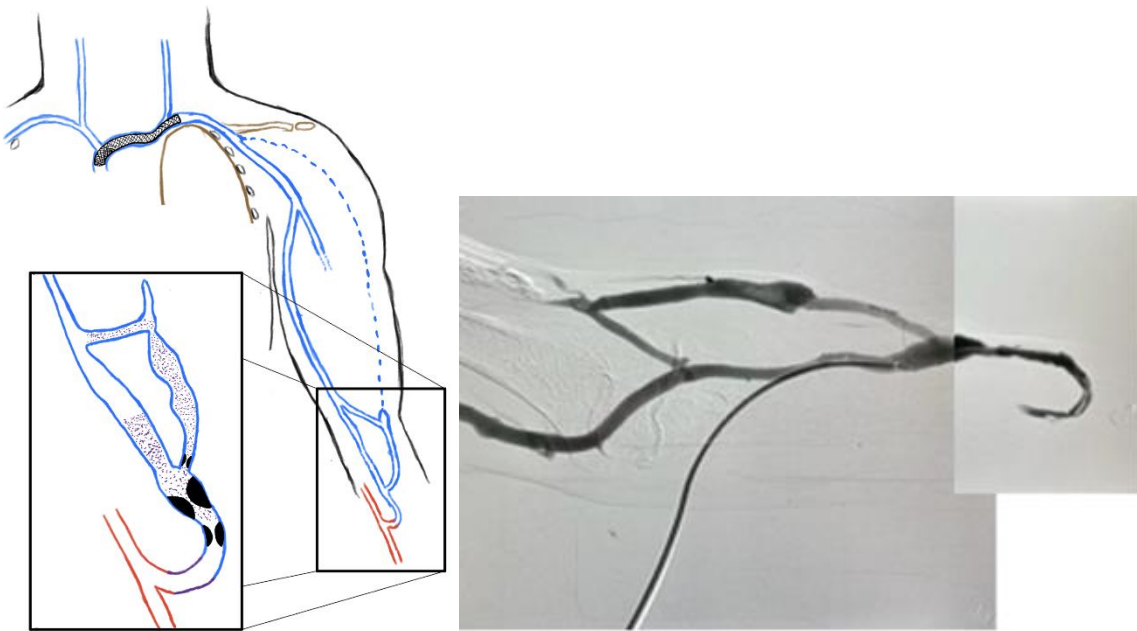


Figure 1: Diagrammatic illustration of the location of thrombosis and stenosis with post-suction thrombectomy fistulogram for case 1.

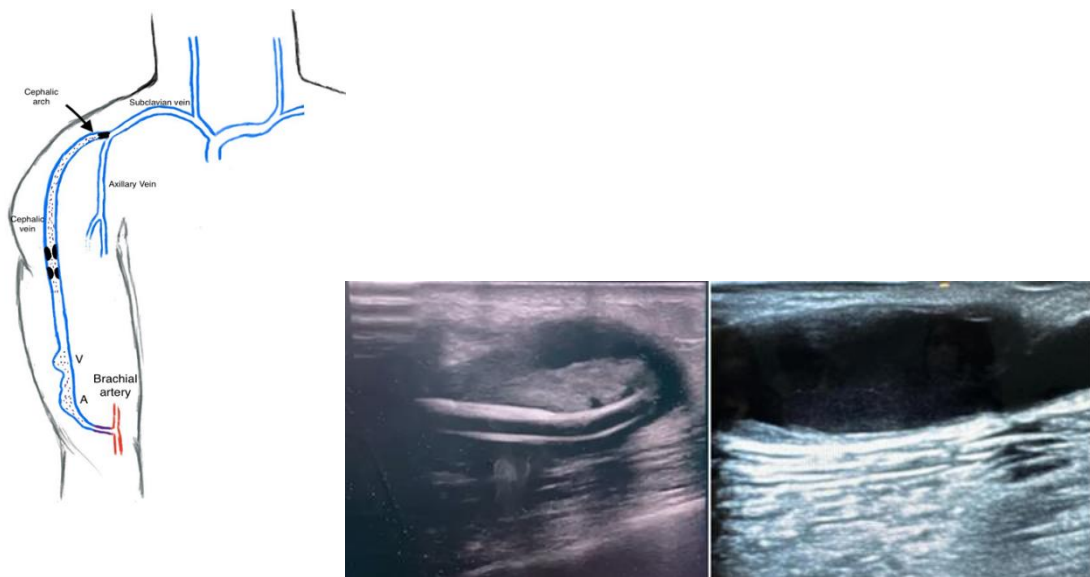


Figure 2: Diagrammatic illustration of the location of thrombosis and stenosis with post-suction thrombectomy ultrasound scan finding of the fistula for case 2.