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Carotid Web as an Unusual Cause of Ischemic Stroke in a Young Adult

Carotid web is a rare vascular abnormality that is often overlooked and has been increasingly associated with embolic ischemic strokes in young and middle-aged adults. The lesion is a form of atypical fibromuscular dysplasia, that is characterised by a shelf-like growth (as seen in fig 1) in the intima at the carotid bulb that disrupts normal flow patterns within the carotid bulb, creating areas of flow recirculation and reduced shear stress that promote mural thrombosis and subsequent embolization, despite minimal stenosis on angiography. Histologically, these lesions differ from atherosclerotic plaques as they are fibrous intimal thickening that projects into the lumen, sometimes accompanied by a small, localized intimal dissection, and no enhancement, plaque haemorrhage or other atherosclerosis-type characteristics, which may make it overlook a clinically significant lesion.

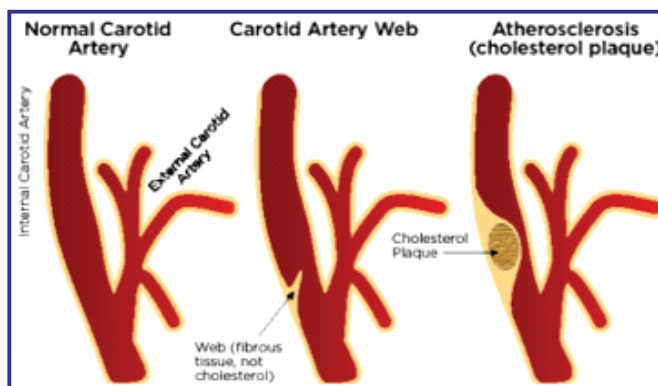


Fig. : 1

Aneurysms have known association with fibromuscular dysplasia, and carotid webs are considered to be an intimal variant of fibromuscular dysplasia causing stroke. The localized alterations in hemodynamic, leading to disrupted blood flow and subsequent thrombus formation with embolization are believed to contribute to ischemic stroke.

In recent years, carotid web has been increasingly recognized as a distinct, underdiagnosed, and clearly treatable aetiology of recurrent ipsilateral ischemic stroke, particularly in younger patients presenting without significant carotid stenosis or cardiovascular risk factors.

Studies have reported a significant association between carotid web and stroke, and increasing evidence suggests that medication alone may not be sufficient to prevent recurrence of stroke. The improved diagnostic accuracy by high-resolution Computed Tomography Angiography (CTA) and Digital Subtraction Angiography (DSA) has facilitated a significant increase in the identification of carotid web.

Carotid artery stenting and carotid artery endarterectomy have been associated with favourable outcomes. Carotid stenting provides a minimally invasive option with satisfactory immediate results, whereas endarterectomy permits complete excision of the lesion and enables histopathological evaluation, which is an advantage in younger patients. Decision to perform endarterectomy reflects the patient's age, morphology of lesion and preference for a definitive, tissue-removing approach

Rare case of carotid web causing ischemic stroke in a young adult and our approach to diagnosis and surgical management.

35 year old male presented at JIVAS with sudden onset right sided hemiparesis and deviation of the angle of mouth to the left ,6 months back. He had no prior cerebrovascular events or significant comorbidities. He was evaluated elsewhere with computed tomography of the brain, revealed an ischemic infarct secondary to thrombus in cortical branches of left MCA, diagnosed with acute thrombotic stroke syndrome. He had undergone intravenous thrombolysis, following which he had showed complete neurological recovery.

DSA performed post thrombolysis confirmed recanalization of the left MCA and probable carotid web at the left carotid bifurcation. Repeat CTA of the aortic arch, neck vessels and Circle of Willis showed a well-defined eccentric fibro fatty plaque at the left carotid bifurcation with surface irregularity extending over a length of 6 mm and causing less than 10% stenosis in left internal carotid artery (ICA) as seen in Fig 2. Patient was initiated on antiplatelet and anticoagulant therapy.

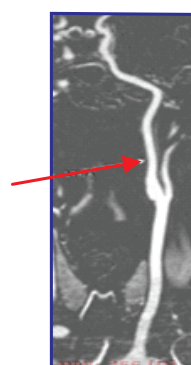
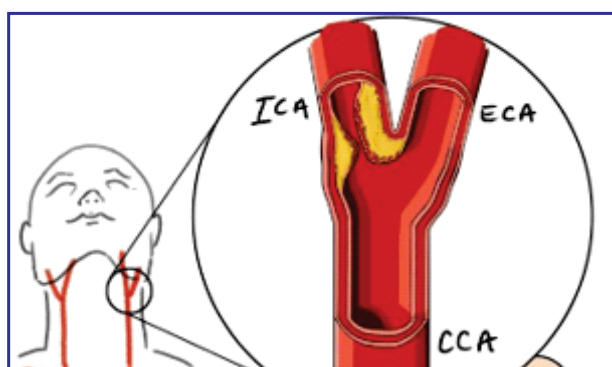


Fig 2 ICA stenosis

Six months later, patient presented to our department with CTA reports as mentioned above with hyperhomocysteinemia. Rest of the thrombophilia and vasculitis were negative.

As a definitive surgical intervention, patient underwent left carotid artery endarterectomy. Intraoperatively a web was noted within the distal most common carotid artery near the carotid bulb and extending into the osteoproximal internal carotid artery. The web with plaque was excised in-toto and the arteriotomy closed with Polytetrafluoroethylene patch (Figures 3 & 4). Postoperative period was uneventful, he was discharged on antiplatelet therapy and statins.

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Identifying carotid web as a clinical feature of fibromuscular dysplasia adds a fundamental dimension to this case. Unlike the multifocal 'string-of-beads' fibromuscular dysplasia, carotid web is a focal intimal abnormality that is often overlooked. It is validated cause of recurrent stroke due to blood flow disturbance and thrombus formation. Understanding the pathology is vital for proper management and prevention, underlining the clinical signs of carotid webs in stroke evaluation. There is strong association between carotid web and ipsilateral ischaemic stroke, particularly in patients who do not have significant vascular risk factors.

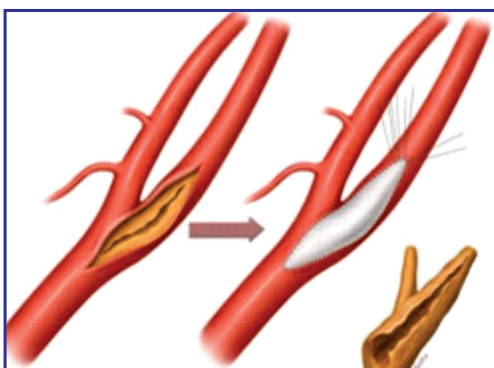


Fig 3

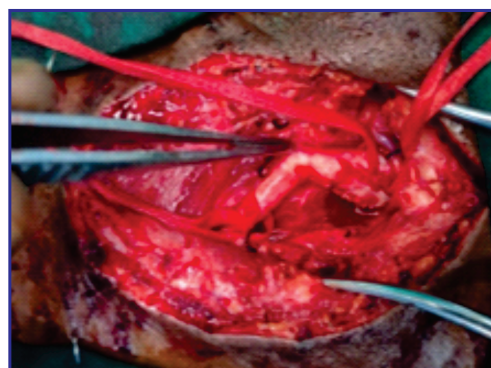


Fig 4 : Carotid endarterectomy with patch plasty



Iatrogenic Renal Artery Thromboembolism During Bilateral Trans-Femoral Aortic Thrombectomy : A Novel Bail-Out Technique

Acute thrombotic occlusion of the Juxtra-renal aorta is an uncommon yet catastrophic vascular emergency, carrying significant morbidity and mortality that demands rapid multidisciplinary decision-making. If not addressed expeditiously, it typically presents as bilateral acute lower-limb ischaemia and, depending on the level of occlusion, may additionally compromise visceral and renal perfusion. The classical open surgical approach trans peritoneal or retroperitoneal aortic thrombectomy with bilateral renal control carries substantial operative morbidity, particularly in the context of concurrent limb loss or haemodynamic instability.

Trans-femoral balloon thrombectomy offers a less morbid alternative; however, manipulation of a Fogarty catheter through a highly calcified aortic bifurcation risks dislodging thrombus into the renal arteries a rare but dreaded complication.

Management of iatrogenic renal artery thromboembolism in an intraoperative setting is further complicated by limited availability and cost of catheter-directed thrombolysis, mechanical thrombo aspiration systems, or covered stents, particularly in resource-constrained environments.

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Novel and cost-effective technique of retrieving an iatrogenic right renal artery thromboembolus which has not been previously described.

37 year old male known Type 2 diabetes mellitus presented to our emergency department with acute onset pain and discolouration of the right toes of one day duration and progressive right leg pain with complete loss of foot and ankle movements over 10 days. He had coldness of the left foot for three days.

On examination, the right foot and distal leg were cold, insensate upto the mid-leg, with absent ankle and toe movements. Gangrenous changes were evident at the tips of all right toes. The left foot was cool with an ischemic amputation stump. Pulses from femoral artery to distal were not palpable and faint bilateral femoral and popliteal signals by Doppler, no distal arterial or venous with absent tibial signals

Routine haematological and biochemical parameters were within normal limits.

Computed tomography angiography (CTA) of the aorta and lower limbs revealed Juxtra-renal acute thrombotic aorto-iliac occlusion with a highly calcified aortic bifurcation, right popliteal and tibial thrombotic occlusion, and a solitary patent left posterior tibial artery (single-vessel outflow on the left as seen Fig 5).



Fig 5 : CT angiogram Juxtra-renal Aorto-iliac occlusion.



Fig 6 : Angio following bilateral trans-femoral aortic thrombectomy absent right renal artery perfusion secondary to iatrogenic thromboembolism, with a patent left renal artery.

Patient underwent right leg fasciotomy, followed by a right above-knee amputation (AKA) to reduce the systemic metabolic burden of irreversible ischaemia as all leg muscle compartments were non-reactive. Two days following AKA, the patient underwent bilateral trans-femoral proximal thrombectomy for left-limb salvage with aortic thrombectomy

Completion angiography following aortic thrombectomy demonstrated acute occlusion of the right renal artery, consistent with iatrogenic thromboembolism as seen in Fig 6. The left renal artery remained patent as seen in Fig 6.

The right renal artery was selectively cannulated using a renal double-curve (RDC) catheter, through which a guidewire was advanced across the thromboembolus into the distal right renal artery (Fig 7). A Fogarty over-the-wire balloon catheter was used to extract the thromboembolus from the renal artery into the aortic lumen, from where it was retrieved via the femoral arteriotomy (Fig 8).

Completion angiography confirmed restoration of right renal artery patency with brisk distal parenchymal blush (Fig 9). The time from embolization to rescue was approximately 4 minutes. Good flow was demonstrated in the infra-renal aorta and bilateral iliac system on final angiogram.

Successful right renal artery patency was restored, renal function was preserved, and the patient had an uneventful recovery. This technique represents an innovative, cost-effective extrapolation of a classical vascular tool to a complex intraoperative complication. The patient had an uneventful postoperative recovery with significant improvement in bilateral limb perfusion waveforms on Physiological studies. Patient was discharged on single antiplatelet therapy with therapeutic anticoagulation and optimal glycaemic control.

At one-month follow-up, the right AKA stump was well healed, and the left great-toe amputation stump was healing. Renal function remained preserved.

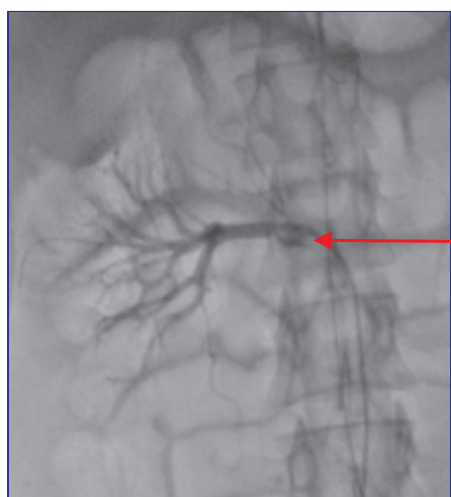


Fig 7 : Renal artery thrombus

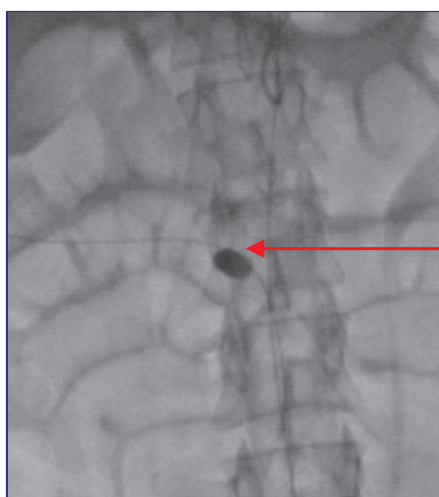


Fig 8



**Fig 9 : post op renal artery
good flow**

Acute thrombotic aorto-iliac occlusion, particularly at the Juxtra-renal level, is a complex surgical problem that demands individualised decision-making. In above patient, the combination of bilateral acute limb ischaemia of disparate severity, a highly calcified aortic bifurcation, significant cardiac dysfunction, and limited financial resources precluded conventional management algorithms.

Trans-femoral Fogarty thrombectomy was selected as the pragmatic option; however, the calcified Juxtra-renal aorta inherently predisposes to dislodgement of thrombus into the renal ostia during balloon withdrawal an underappreciated complication with potentially devastating consequences.

Conventionally, iatrogenic renal artery thromboembolism during aortic surgery is managed by open renal artery thrombectomy, catheter-directed thrombolysis, mechanical thromboaspiration, or stent-assisted techniques. Each carries significant resource requirements, cost implications, or procedural risks that may not be universally applicable.

Our report describes, for the first time the use of an over-the-wire Fogarty balloon catheter for trans arterial retrieval of a renal artery thromboembolus, a technique that creatively extrapolates the classical Fogarty principle to the renal vasculature in a wire guided, coaxial manner.

DEPARTMENT OF SPINE AND JOINT SURGERY

Kyphoplasty vs Cemented Pedicle Instrumentation: Where Do We Draw the Line?

Osteoporotic vertebral fractures: Most common fragility fractures, affecting nearly one in three women and one in five men over the age of 50. They account for approximately 1.4 million cases annually worldwide, leading to chronic pain, progressive kyphosis, reduced mobility, diminished quality of life and increased morbidity and mortality. Kyphoplasty and cement-augmented pedicle screw instrumentation (cemented PI) are two well-established treatment strategies. Both utilize polymethylmethacrylate (PMMA) bone cement to improve spinal stability.

KYPHOPLASTY

Minimally invasive procedure

Indicated in stable fractures with intact neurology only

Restores vertebral height and then filled with PMMA cement

CEMENTED PI

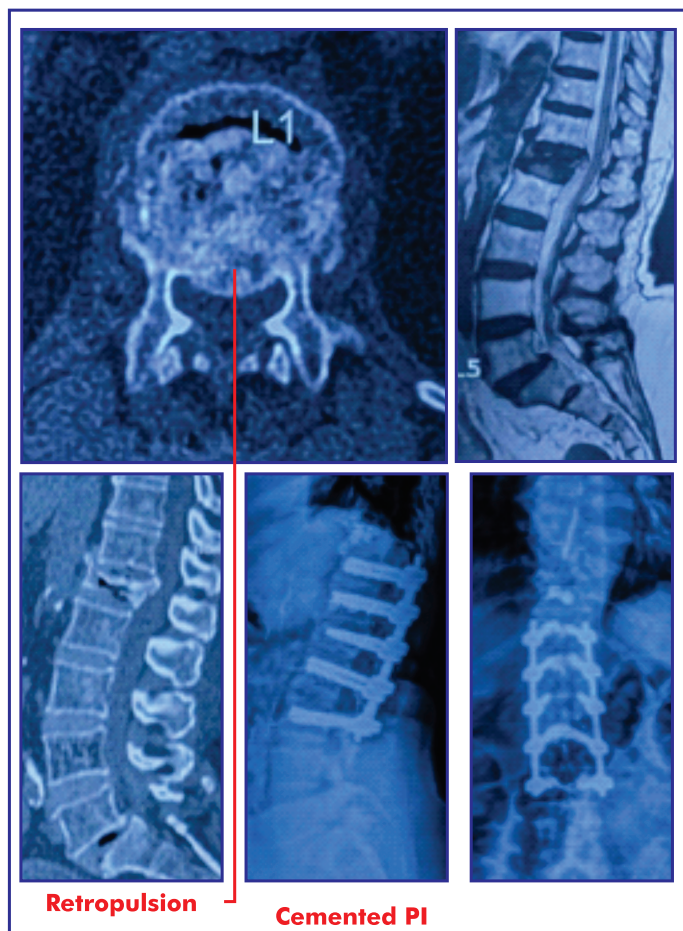
Extensive procedure, indicated in Unstable fractures, progressive deformity with pseudoarthrosis, neurological deficits

Posterior spinal fixation with PMMA augmentation to improve purchase of screw

Early mobilisation, shorter stay, lesser pain
Lower blood loss and morbidity
Suited in elderly with multiple comorbidity



Rigid stabilisation, high pull out strength
Allows decompression of neural tissue
Higher blood loss and morbidity relatively



In conclusion, kyphoplasty and cemented pedicle instrumentation should not be viewed as competing procedures but rather as complementary techniques addressing different clinical scenarios. Appropriate patient selection based on fracture stability, neurological status, bone quality, and functional demands is the key determinant of successful outcomes. A tailored approach ensures optimal pain relief, restoration of spinal stability, and improved quality of life in patients with osteoporotic vertebral fractures.



Unilateral Chronic Venous Insufficiency with Infrahepatic Inferior Vena Cava Stenosis Successfully Managed with IVUS-Guided Endovascular Plasty

Chronic venous insufficiency (CVI) is commonly attributed to superficial venous reflux or post-thrombotic disease. However, proximal venous outflow obstruction remains an under-recognized yet clinically significant cause, particularly in young patients with unilateral symptoms.

Not all venous ulcers originate from superficial venous

disease. Persistent unilateral edema, recurrent venous ulcers, or symptoms disproportionate to duplex findings should prompt investigation for ilio caval obstruction. Early diagnosis using advanced imaging and timely endovascular intervention can dramatically improve patient outcomes while preventing chronic disability.

JIVAS managed a remarkable case highlighting the importance of comprehensive venous evaluation beyond routine duplex ultrasonography.

CASE REPORT : Patient aged 28 years male presented to JIVAS with right lower limb swelling for 1.5 years with recurrent venous ulcer over the leg associated with hyperpigmentation.

On examination: Hyperpigmentation over the gaiter with healed venous ulcer and oedema was present as seen in Fig 11. Peripheral arterial pulses were palpable.

Venous Duplex scan : Competent saphenofemoral and saphenopopliteal junctions, mild dilatation of the great and small saphenous veins, few incompetent perforators. No evidence of acute or chronic deep vein thrombosis. Although superficial venous disease was present, the severity of symptoms appeared disproportionate, raising suspicion of proximal venous obstruction hence MR Venogram was done.

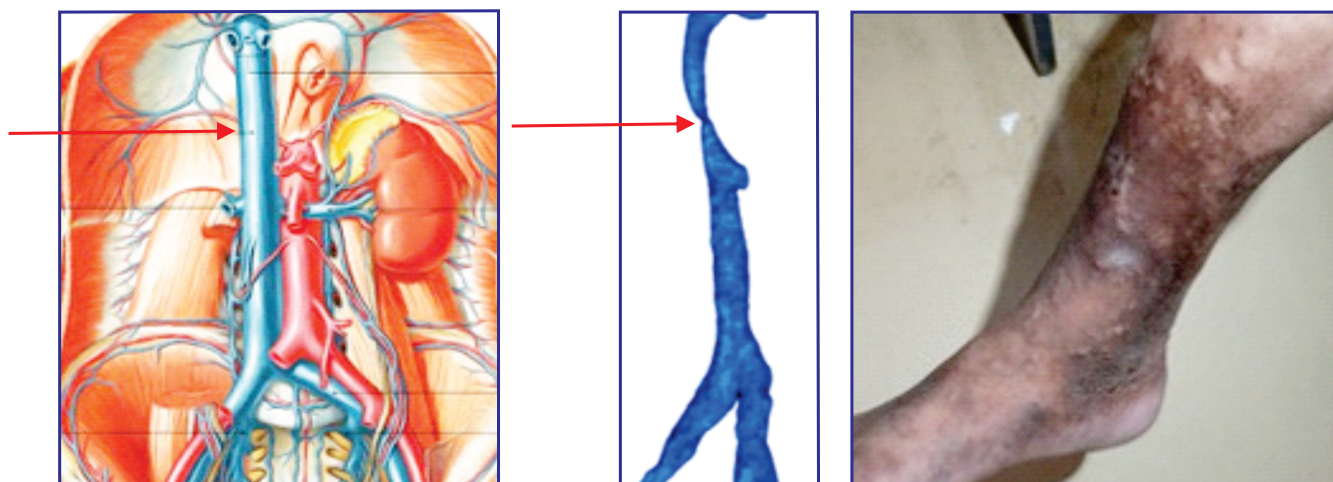


Fig12 IVC and Infra hepatic IVC stenosis

Fig11

Focal moderate narrowing of the Infrahepatic/suprarenal inferior vena cava at the inferior hepatic margin which showed as seen in Fig 12. Mild dilatation of the Infrahepatic IVC. Dilated renal, lumbar, and iliac veins, suggesting significant venous hypertension. The above findings confirmed a clinically significant central venous obstruction. Patient underwent Intravascular ultrasound (IVUS) (fig 15) and endovascular IVC plasty as seen in Fig 13. IVUS enabled accurate characterization of the lesion and guided successful endovascular treatment, restoring central venous outflow as seen in Fig 14.

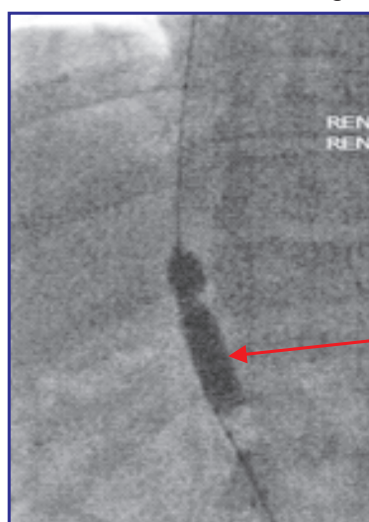


Fig 13 Venogram IVC stenosis

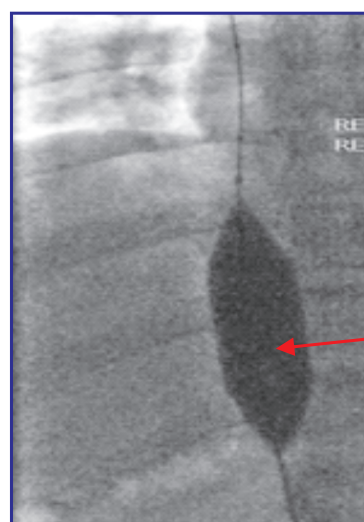
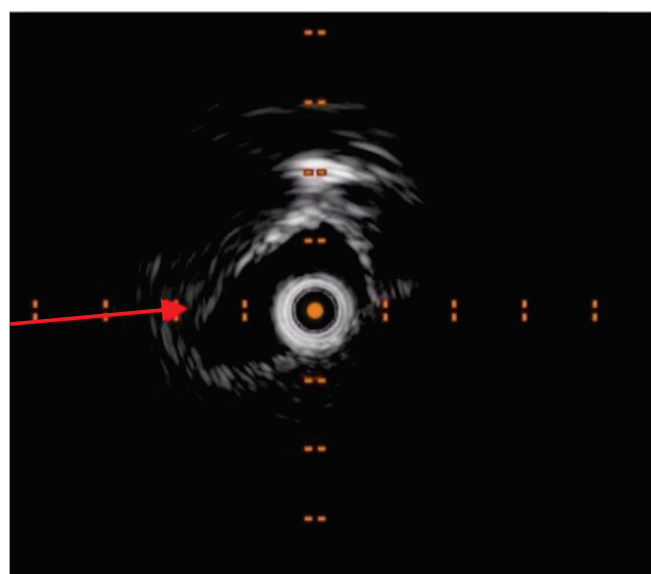
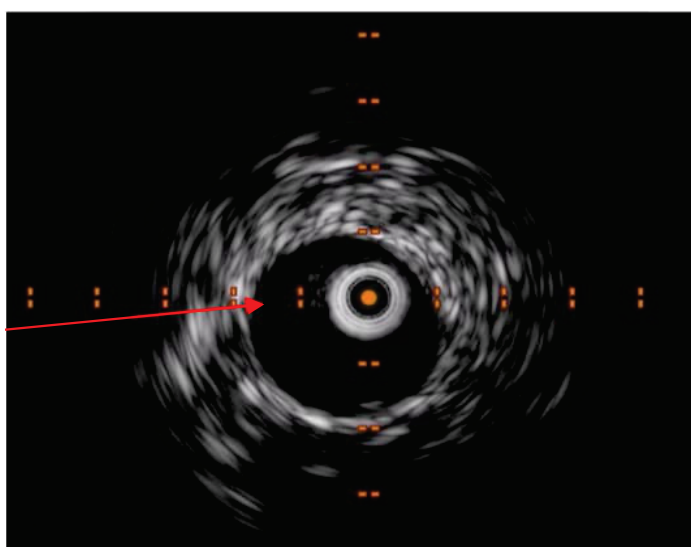


Fig 14 Venogram post IVC plasty.

Postoperative recovery was excellent. Approximately 50% reduction in limb swelling. No recurrence of ulceration during follow-up.

Importance of considering proximal venous obstruction in patients with unexplained unilateral chronic venous insufficiency:

- Young patients with unilateral chronic venous insufficiency require evaluation for central venous obstruction.
- Normal peripheral venous duplex findings do not exclude clinically important ilio caval disease.
- MR venography and IVUS are valuable tools when proximal obstruction is suspected.
- Endovascular treatment of IVC stenosis can provide excellent symptomatic relief and durable ulcer healing.
- Most lesions involved infrarenal IVC stenosis and were associated with iliac vein obstruction.



IVUS of IVC with normal lumen and stenosed segment of IVC