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Utility of Endoscopic Ultrasound in Symptomatic Cut Corners of a Clot

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Thoracic aorta intramural thrombosis accounts for 0.9% of all etiologies of peripheral arterial thrombosis¹. The frequent origins are intracardiac, intraaneurysmal, atherosclerotic lesions, trauma,

malignancies and coagulation disorders². The current use of echocardiography and computed tomography has facilitated in early diagnosis of aortic thrombosis as a cause for peripheral thromboembolic episode³. The purpose of the case report is to review the diagnostic capability of endoscopic ultrasound (EUS) beyond the routine evaluation of gastrointestinal organs.

Case Report

A 48 year old male, presented to the emergency department with severe chest and abdominal pain for 3 days duration. He denied any history of shortness of breath or palpitations. He was a known hypertensive on treatment for 8 months. He had no habits. Physical examination was unremarkable. He was evaluated at a local hospital and was prescribed an anti-inflammatory and anti spasmotic for pain but he reported no improvement. Ultrasound abdomen revealed a hypo echoic spleen, probably an abscess or infarct and was referred for evaluation of the same.

Laboratory test results were all within normal limits including common blood cell counts, liver chemistries, renal parameters and serum lipase. Contrast enhanced computed tomogram of the abdomen and pelvis showed splenic infarct secondary to splenic artery thrombosis and segmental renal infarcts due to renal artery thrombosis. Transthoracic echocardiography (TTE) showed neither valvular nor intra cavitory anomalies. Ventricular ejection fraction was preserved. He was referred for Endoscopic Ultrasound (EUS) evaluation of splenic artery thrombus and for ruling out any pancreatic pathology. With a Pentax EG-3870UTK endoscope coupled to a Hitachi HI Vision Avius estiva console (ultrasound beam frequency at 7.5 MHz), endoscopic ultrasound was performed without complications. EUS showed a splenic artery thrombosis and splenic infarct (**Figure 1**). On colour doppler evaluation, flow was noted in splenic vein and no flow in splenic artery (**Figure 2**). The surrounding pancreatic parenchyma, aorta with celiac take off was normal. The thrombus in the splenic artery was noted from the celiac bifurcation. The outer border of descending aorta abuts against the left lung and makes

a mirror image artifact because of the reflection of sound waves from the lung. Mediastinal examination showed dissection in descending aorta with a linear intraluminal floating clot which was traced both by pushing along the posterior wall of the esophagus from the arch downwards or by withdrawing from celiac take off (**Figure 3**). A diagnosis of aortic dissection with adherent clot and a thromboembolic episode to spleen was made. Computed aortogram (**Figure 4**) confirmed the findings, classified it as Stanford type B and was started on anticoagulation and beta blockers. He was asymptomatic at 6 months of follow up.

Discussion

Trans esophageal echocardiogram is most commonly performed to evaluate for a potential cardiac source of embolus⁴ and to evaluate for suspected acute aortic pathology (i.e., dissection)⁵. In our case, the etiological investigation for aortic thrombus found no hematological abnormalities and the only cardiovascular risk factor was hypertension. In the study of Turley⁶, 83% of aortic thrombosis treated with anticoagulation, had complete resolution of the thrombus with one amputation as a complication was reported.

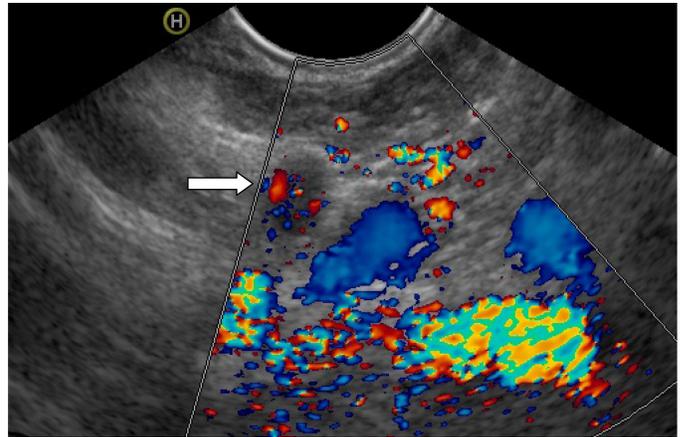


Figure 2: Linear EUS color doppler image showing no doppler flow in splenic artery (horizontal arrow) and normal flow in splenic vein.

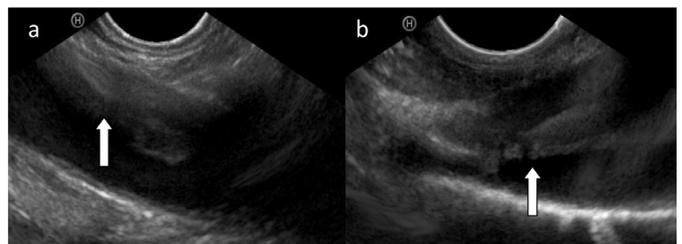


Figure 3: Linear EUS mage showing (a): showing dissection of descending aorta and (b): showing a floating intimal flap/clot in aorta.

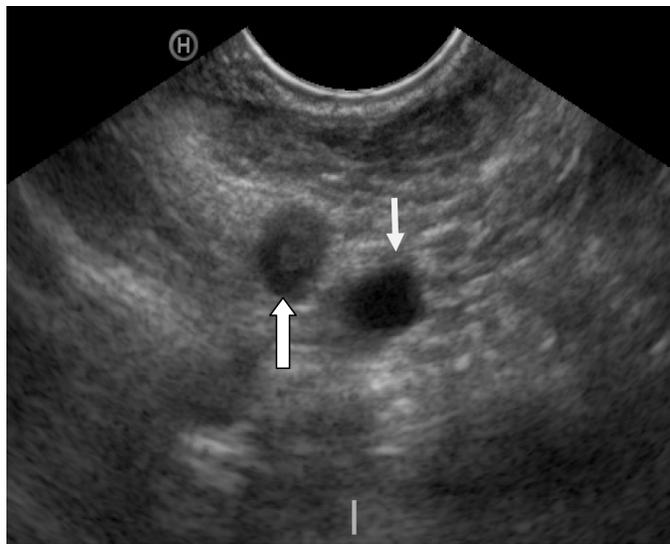


Figure 1: Linear EUS image showing hyperechoic filling defect in splenic artery (upward arrow) and hypoechoic splenic vein (downward arrow) adjacent to pancreas.

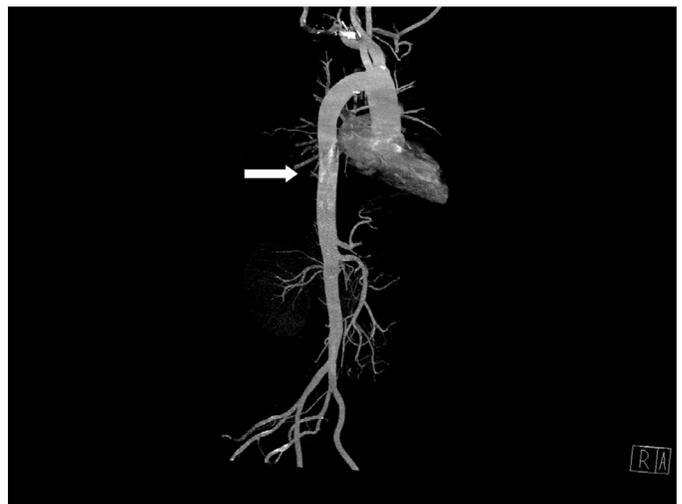


Figure 4: Computed aortogram showing descending aortic Stanford type B dissection.

With increasing use of EUS as a diagnostic and therapeutic technique, it can provide an unique access to vascular structures in the mediastinum and abdomen. EUS probes provide high quality 2D resolution, color doppler, and pulsed doppler images. Aortic floating thrombus is a rare, life-threatening disease with predisposing abnormal coagulation function, aortic disease, and history of aortic stent implantation. Echoendoscopic evaluation of proximal aorta can confirm the diagnosis in distal embolic phenomenon, endoscopic ultrasonographers to extend the horizons of EUS beyond the limits of current practice

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Hepatic Visceral Larva Migrans with Atypical Manifestations: A Report of Three Cases

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The term visceral larva migrans (VLM) is used to describe the migration of second-stage larvae of certain nematodes through the human viscera.¹ These nematodes pass through the intestinal wall and travel with the blood stream to various organs where they cause inflammation and damage. Affected organs can include the liver, lung, heart and the central nervous system. The larvae are known to move slowly through the affected organs (hence the term migrans), the resulting inflammation causing multiple oval to cigar-shaped eosinophilic granulomas or abscesses.² This entity should be considered in the differential in patients with sustained eosinophilia showing the typical imaging findings. We further report secondary complications of portal vein thrombosis and abscess rupture in these patients which has so far not been documented in literature.

Case 1

A 55-year old female came with the chief complaints of intermittent high grade fever and pain in right upper quadrant since 1 month. Her complete blood count revealed normal white blood count (9400/ μ L, normal range 4-11) with eosinophilia (18%). Ultrasound showed the presence of multiple conglomerated predominantly hyperechoic lesions in right lobe of liver (**Figure 1A**). Further, MRI (**Figure 1B - F**) was done which revealed multiple diffusion restricting lesions in right lobe of