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Post Traumatic Pseudoaneurysm of Infrarenal Abdominal Aorta and Right Common Iliac Artery after 30 Years of Trauma: A Rare Identity.

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Abstract: *Peudoaneurysm of infrarenal abdominal aorta due to blunt trauma is uncommon identity. Here we are reporting a case of 35 years old man who had history of automobile accident at an age of 5 years and was asymptomatic for next 30 years. After that he developed symptoms of abdominal distension and dragging abdominal pain. Later CT angiography and USG abdomen showed peudoaneurysm of infrarenal abdominal aorta and right common iliac artery with retroperitoneal hematoma. Open surgery was performed with interposition of polyester graft from infrarenal abdominal aorta to 2cm above the bifurcation of aorta with reimplantation of inferior mesenteric artery over the graft plus repair of anterior as well as posterior wall of right common iliac artery using polyester patch. Operative repair was successful and patient recovered well.*

Keywords: *infrarenal abdominal aortic peudoaneurysm, blunt trauma, open surgery*

I. Introduction

Blunt trauma to the abdomen leading to infrarenal aortic injury is rare and the formation of delayed pseudoaneurysm after it even rarer. Blunt aortic injury can present as stages starting with intimal flap formation progressing on to intramural hematoma further leading to pseudoaneurysm[1]. The presentation may differ in different cases. The treatment option may either be endovascular stenting or open surgery or a combination of both.

II. Case report

A 35 years old man presented to the Outpatient department with the complaints of heaviness in the abdomen and a dull aching pain for past 6 months. He had no complaints of DOE (dyspnea on exertion), palpitation ,bowel and bladder complaints. He had history of been run over by a truck over his back at the age of 5 years.

On physical examination: vital were stable. A lump was palpable mainly in the umbilical ,left lumbar, hypogastrium and right lumbar area. Lump was non tender, firm in consistency,surface was smooth, had well defined margins except the left margin. It is non ballotable, nor bimanually palpable and not pulsatile .On auscultation bruit was heard.

On investigation he had a significant fall in haemoglobin few months before he visited to our OPD. USG abdomen was done which revealed deficient of 3-4 cm posterior wall of infra abdominal aorta with a contained retroperitoneal hematoma. For confirmation of the diagnosis CT angiography of abdomen and pelvis was done which revealed two intercommunicating psuedoanuerysm ,one in infrarenal aorta 4 cm below the renal arteries extending just above the bifurcation and other being in right common iliac artery (Fig 1).

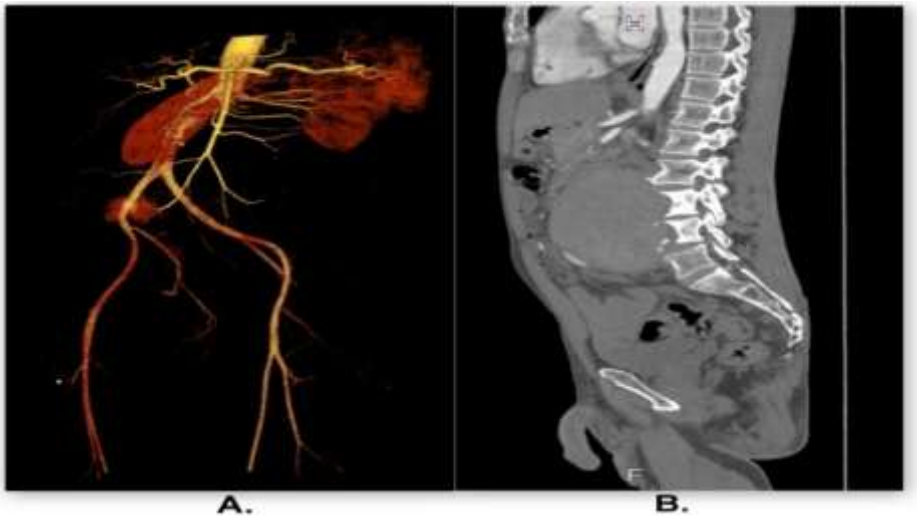

Figure 1: (A) 3D reconstruction of CT angiography showing peudoaneurysm of infrarenal abdominal aorta and right common iliac artery with its extent. The distance between neck of peudoaneurysm from renal artery and aortic bifurcation is well visualised. (B) Saggital view shows anterior displacement of abdominal aorta and erosion of L3-4 vertebrae due to compression by pseudoaneurysm.

Patient was planned for surgery, laparotomy was done and left colon with its mesentery was mobilised to reach the aneurysm. As space between the renal and the aneurysm was less,so a supraceliac clamp was placed. After clamping the aorta in supraceliac segment, the anterior wall of the aneurysm was laid open (Fig 2). A gelatine sealed woven polyester interposition graft of size 22mm diameter was placed 3 cm below the renal artery with interrupted prolene suture and distal anastomosis was done 1 cm above the bifurcation. After this the defect in posterior wall of the right common iliac artery was repaired with the polyester patch and the anterior wall was also closed using a polyester patch. The inferior mesenteric artery was re-implanted on the graft (Fig 3). Patient did well post operatively and was discharged on post op day 8^{th}.

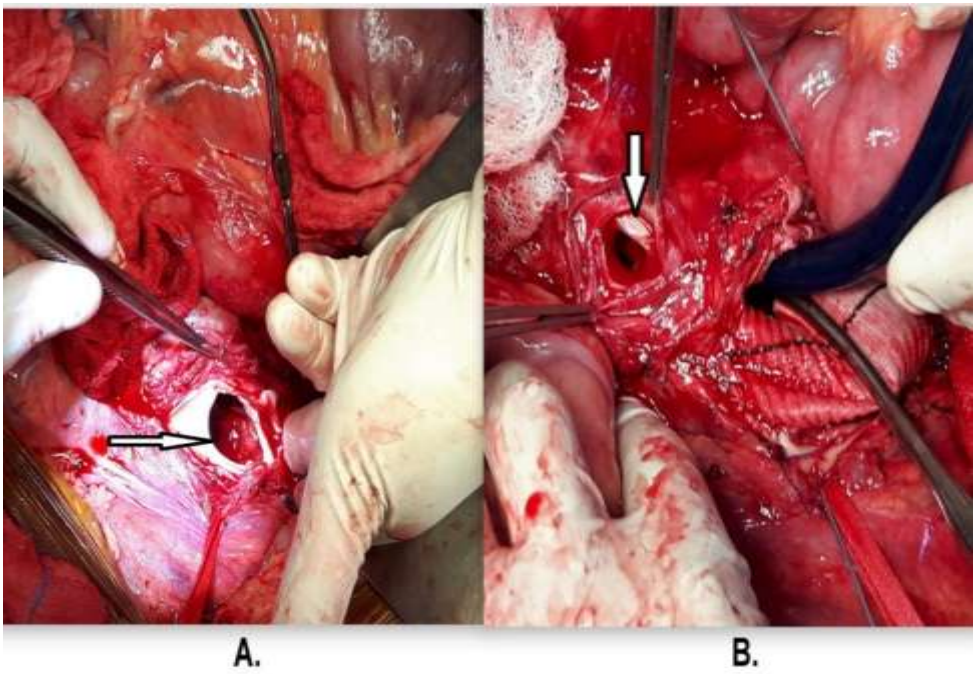

Figure 2: Intraoperative images (A) showing defect in posterior abdominal aortic wall after opening the peudoaneurysm anteriorly, (B) showing defect in posterior wall of right common iliac artery.

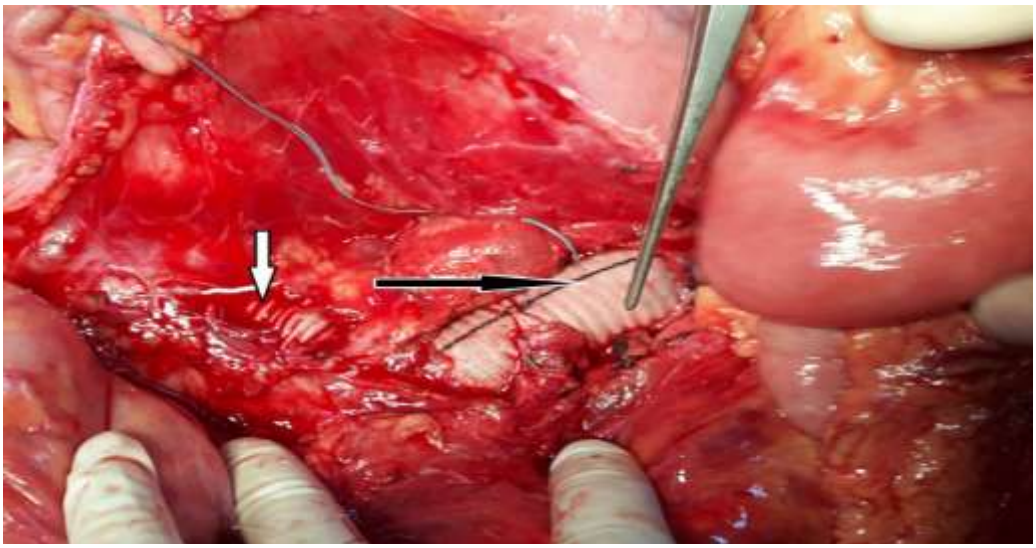

Figure 3: shows interposition of polyester graft (black arrow) from infrarenal abdominal aorta to 1cm above the bifurcation of aorta with re-implantation of inferior mesenteric artery over the graft plus repair of anterior as well as posterior wall of right common iliac artery using polyester patch (white arrow).

III. Discussion

Post-traumatic abdominal aortic pseudoaneurysm are quite rare. This complication of aortic injury may be caused by penetrating or blunt trauma.[2]Pseudoaneurysm after blunt trauma are uncommon and reported to occur in 0.05% of cases with blunt abdominal trauma.[3]Patients may be asymptomatic for a long period of time. The time between injury and presentation of symptoms is variable and range from 4 weeks to 42 years.[3,4] Clinical presentation may include abdominal, back, or chest pain; palpable abdominal mass; compression of renal arteries; upper gastrointestinal bleeding; inferior vena cava compression; compression of biliary tract; thromboembolism, and spontaneous rupture.[3] Initial diagnosis can be made by ultrasonography but CT/MR angiography usually required to confirm the diagnosis and before any intervention.[5] This condition can be managed by endovascular intervention and open surgical procedure. Nowadays endovascular interventions are commonly performed due to less morbidity and high success rate.There are few reports indicating similar results of endovascular intervention and open surgery.[6]We in our center performed an open surgical repair due to multiple reasons. Primarily due to unavailability of the facilities to do endovascular stenting, large size of the defect in lateral and posterior wall of aorta and the presence of large retroperitoneal hematoma. The patient was young and had no co-morbid factors so there was not much disadvantage to carry out an open surgery. Secondarily as another psuedoaneurysm in the right common iliac artery making open procedure more advantageous.

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