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Thrombosis of axillo-iliac graft in a case of aortoarteritis: A rare case report

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ABSTRACT

Takayasu's arteritis (TA) is an inflammatory and stenotic disease of medium and large sized arteries characterized by a strong predilection for the aortic arch and its branches. We present a case of 48-year-old woman with Takayasu's arteritis experienced thrombotic occlusion of an extra-anatomical aortic bypass graft done 12 years earlier. She presented with uncontrolled hypertension in upper limbs and bilateral claudication pain in lower limbs and abdominal pain for which CT aortogram was done suggestive of thrombosis of graft for which aortoplasty was done and patient was discharged on anticoagulants and corticosteroids.

Keywords: Takayasus arteritis, axillo-iliac graft, aortogram, erythrocyte sedimentation rate

1. INTRODUCTION

Takayasu's arteritis (TA) is an inflammatiory and stenotic disease of medium and large sized arteries characterised by a strong predilection for the aortic arch and its branches which has an unknown aetiology. This inflammation is a common contributor to conditions like aneurysms, thrombosis and arterial stenosis. Ishikawa and Maetani's prognostic classification classify stage-3 TA as requiring surgery for individuals with a progressive disease course characterised by the onset of significant symptoms more than a year after diagnosis and a serious complication such as an aortic aneurysm (Kim et al., 2020). Extra-anatomic bypass is frequently required in TA patients with long-segment aortic stenosis. Anastomotic false aneurysms, abdominal aortic aneurysms, renal failure, congestive heart failure and other long-term problems are also possible after surgery.

2. CASE PRESENTATION

A 46-year-old female with known case of aortoarteritis status post axillo-iliac artery bypass grafting (extra anatomic) with a gortex ribbed graft (8 mm) in 2010 and a known case of systemic hypertension. Patient presented with complaints of breathlessness, bilateral claudication pain in lower limbs and abdominal pain since 15 days. In September 2010, the patient presented with complaints of claudication pain in bilateral lower limbs and absent lower limb

pulsations for which investigations were done. Aortogram was performed, which revealed that the ascending aorta, aortic arch and arch vessels were all normal. No aortic regurgitation declining aorta with 80% stenosis followed by stenotic dilatation above renal arteries, both renal arteries normal and 100% occlusion just after the origin of both renal arteries with no distal reformation visualized. Patient was not on any treatment. CT aortogram was performed in October which suggestive of aortic wall thickening from the aortic arch to the lower aorta variable, narrowing by approximately 20–70% approximately (Figure 1).

On examination, the patient's condition was moderate, afebrile, blood pressures of 170/110 mm of hg in the right arm, 130/90 mm of hg in the left arm and 70/50 mm of hg in the lower limbs. Heart sounds were normal; per abdomen soft and non-tender and central nervous system conscious oriented moving all four limbs. Investigations revealed that the Hb was 13% gms/dl, WBC count was 28,200 cells /cumm, platelet count was 278000 cells /cumm, KFT and LFT were within normal limits, CRP was 45.24 and ESR was 83.ECG leads I, aVL and V2-V6 shows T-wave inversion. Patient was initially treated with antibiotics, antihypertensives and anticoagulants.

CT aortogram revealed graft occlusion on the right side between the right subclavian artery and the right common femoral artery (Figure 1, 2) and occlusion of this graft was noted within approximately 1 cm of its origin near the subclavian artery. The thrombus is seen extending into the common femoral artery, with approximately 80% stenosis of the common femoral artery on the right side. Approximately 50% stenosis is seen at the origin of the right common carotid artery and complete occlusion of the left common carotid artery is noted from its origin. Approximately 60% stenosis is noted in the proximal left subclavian artery.

2D echo revealed moderate concentric left ventricular hypertrophy, no regional wall motion abnormality of the left ventricle at rest, good left ventricular systolic function and ejection fraction of 65%. Patient was started on tab prednisolone 40 mg od and had underwent aortoplasty under all aseptic precautions left radial artery punctured with radial access set and 5f sheath placed.

Marker pigtail 5f was inserted into ascending thoracic aorta. Check angiogram obtained demonstrating narrowing of 70 - 80 % in proximal descending aorta and non-opacification of infrarenal aorta. 5f cobra catheter inserted over terumo upto ascending aorta.

Balloon plasty was done by using abbot vascular armada 35 12 mm x 80 mm x 135 cm.

Check angiogram shows good dilatation of descending aorta.

No endoleak noted.

Procedure went uneventful.

Which is shown in video 1 and 2 and patient was discharged on Tab prednisolone 40 mg-OD.

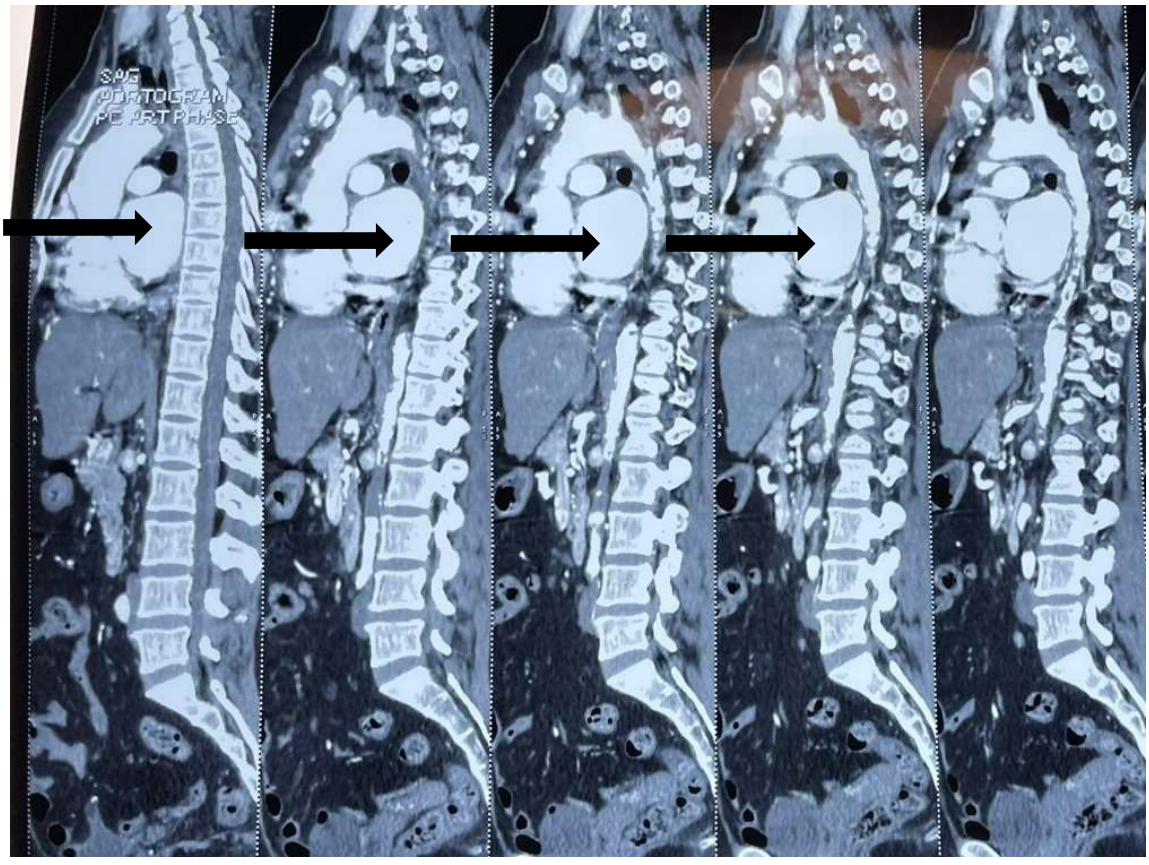

Figure 1 Preoperative sagittal section of CT aortogram showing aortic wall thickening from aortic arch to lower aorta

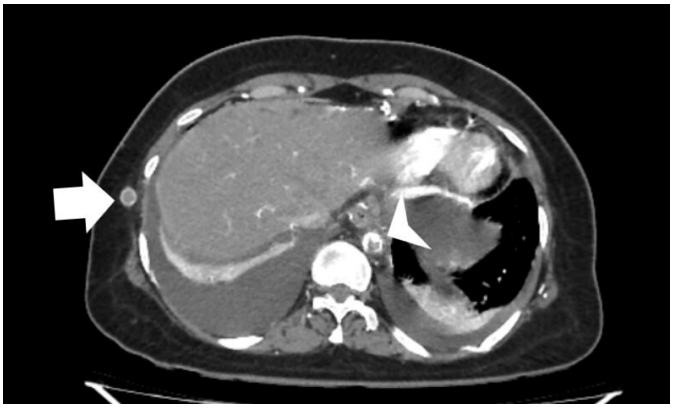

Figure 2 Axial section of CT aortogram showing thrombosis of axillo iliac graft

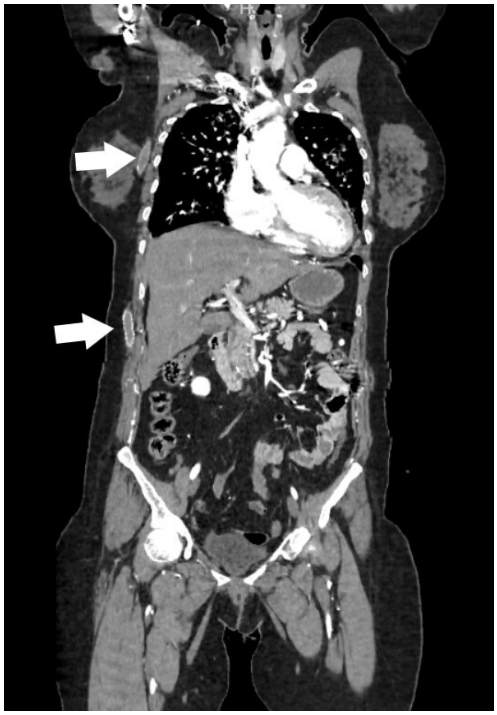

Figure 3 Coronal section of ct aortgram showing thrombosis of axillo iliac graft

3. DISCUSSION

Takayasu's arteritis is a potentially fatal chronic granulomatous vasculitis that mainly affects the aorta and its major branches. This rather uncommon condition, often called "pulseless sickness" or "Martorell syndrome" and “occlusive Inflammation of the arterial wall that progresses to thickening, dilation, stenosis and thrombosis” which is known as thromboaortopathy. This illness was initially exclusive to females from Eastern Asia. Although its prevalence has swiftly spread to both sexes in the majority of the world, the gender gap still exists. Although the age at presentation varies greatly, the majority of cases manifest between the second decades to third decade of life. Takayasu's arteritis is characterized by end-organ damage, such as stroke from carotid involvement and hypertension from kidney and aortic regurgitation brought on by aortitis or artery murmurs and reduced pulses are the best indicators. With stenosis and aneurysmal segments coexisting in the same artery, most patients have bilateral involvement. Despite a definite preference for the aortic arch, renal arteries are affected in 28–75% of individuals, coronary arteries in fewer than 10% and pulmonary arteries in 14%. Based on region of artery involvement Takayasu's arteritis is classified as Type I (aortic arch), Type II (aortic arch and descending thoracic aorta) and Type III (descending thoracic aorta and abdominal aorta), Type IV (only the abdominal aorta) Type V (aortic arch, descending thoracic aorta and abdominal aorta) (Arend et al., 1990).

Patients who undergo extra-anatomical bypass have a greater than 79% chance of surviving for five years after the procedure. After 12 years patient developed thrombosis of axillo iliac graft patient was not on medication during 12 years period and was not on any follow up. However, annual follow-ups with chest and abdomen X-rays to detect dystrophic calcifications at their earliest

stages and ESR levels to detect systemic inflammation and overall disease development in order to monitor for long-term consequences of extra-anatomical aortic grafts are recommended (Jayaswal et al., 2021). Furthermore, routine CT or MRI imaging should be done in the presence of active illness to check for complications such as graft dehiscence, pseudoaneurysms and calcifications. Imaging modalities, including CT and MRI, play a crucial role in evaluating TA patients, especially at stage 3, where early surgical intervention is possible. This instance emphasises the significance of maintaining a consistent schedule of check-ins with medical professionals, as well as serial imaging scans and adherence to prescribed treatments (Kim et al., 2015; Kumar et al., 2016).

4. CONCLUSION

Aortic bypass grafts placed extra-anatomically are susceptible to the life-threatening complications of dystrophic calcification and graft thrombosis. Regular monitoring with chest and abdominal X-rays for calcific changes and a CT or MRI for thrombotic changes allows for early diagnosis and treatment of these repercussions. The pathophysiology of extra-anatomical aortic graft issues has been connected to the active phases of Takayasu arteritis; hence treating this condition is essential the severity of the disease's development may have been lessened with consistent follow-up, medication adherence, patient education and open communication with the doctor.

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Author Contributions

VK had written manuscript; AW, SA and SK edited the manuscript; NM helped in data collection.

Informed consent

Informed consent was obtained from participant for whom identifying information is included in this manuscript.

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Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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