Turkish Journal of Vascular Surgery 2020;29(3):200-202

DOI: 10.9739/tjvs.2020.776
www.turkishjournalofvascularsurgery.org

Case Report

Superior mesenteric artery pseudoaneurysm in Takayasu arteritis: A case report

Amitabh Satsangi[1], Sai Divya Yadavalli[2]

[1]Department of Cardiothoracic and Vascular Surgery All India Institute of Medical Sciences, New Delhi, India
[2]Department of Surgical Disciplines, All India Institute of Medical Sciences, New Delhi, India

ABSTRACT

Takayasu arteritis is a large vessel arteritis described in young females. It presents with stenotic lesions of the aorta and its branches, although aneurysmal presentation is rare. A 62-year-old woman with Takayasu arteritis was admitted with complaints of abdominal pain and bilious vomiting for two days. She had a history of stenting of the right renal, superior mesenteric, and celiac artery. Computed tomography revealed a superior mesenteric artery pseudoaneurysm. Surgery was decided and it was successfully repaired. In conclusion, although rare, aneurysms of the superior mesenteric artery should be kept in mind in patients with Takayasu arteritis.

Keywords: Pseudoaneurysm, superior mesenteric artery, surgical repair, Takayasu arteritis.

In 1908, Prof. Mikito Takayasu, MD introduced to the world a case of retinal vasculitis with pulselessness, which later was termed as Takayasu arteritis.[1] Takayasu arteritis is a large-vessel arteritis commonly described in young Asian females. It is a chronic, progressive, and immune-mediated arteritis resulting in inflammation of the aorta and its major branches and pulmonary arteries.[2] Although it primarily affects the aorta and its major branches and involves the abdominal aorta in some cases, the lesions which are present are often stenotic and rarely aneurysmal. Superior mesenteric artery (SMA) aneurysm formation in Takayasu arteritis is uncommon.

Herein, we report a case of Takayasu arteritis in whom we found a pseudoaneurysm of the SMA following endovascular stenting.

CASE REPORT

A 62-year-old Indian female patient with a history of hypertension, hyperhomocysteinemia, and Takayasu arteritis was admitted with complains of abdominal pain and bilious vomiting for two days. The pain was colicky in nature and non-radiating, while vomiting was non-projectile and bilious. There was no history of chest pain or breathing difficulty. The patient had Takayasu arteritis type 4 c-/p- and underwent stenting of the right renal artery, SMA, and celiac artery in August 2015, with the exclusion of a SMA pseudoaneurysm via stenting in 2017. Computed tomography (CT)-digital subtraction angiography (DSA) at the level of the mid-descending thoracic aorta (DTA) revealed a mildly tortuous and diseased DTA with dilated DTA and abdominal aorta (Figure 1). Selective injections showed a patent celiac artery stent and two patent stents/stent grafts in the proximal to mid-SMA. The lower end of the SMA stent was observed to be lying within the SMA aneurysm. There was antegrade flow into the sac of the lesion. The lesion ended into at least two distal SMA branches, which then coursed normally. The characteristics of the lesion were ineligible for any endovascular intervention. Therefore, surgical repair was decided, and a written informed consent was obtained from the patient.

Midline laparotomy was performed. All intra-abdominal organs were examined, the small bowel was reflected, and a window was created in mesentery.

Received: May 13, 2020 ***Accepted:*** May 23, 2020 ***Published online:*** June 16, 2020

Correspondence: Amitabh Satsangi, MS. Department of Cardiothoracic and Vascular Surgery All India Institute of Medical Sciences, 10029 New Delhi, India.
e-mail: amoeba418@gmail.com

Citation:
Satsangi A, Yadavalli SD. Superior mesenteric artery pseudoaneurysm in Takayasu arteritis: A case report. Turk J Vasc Surg 2020;29(3):200-202

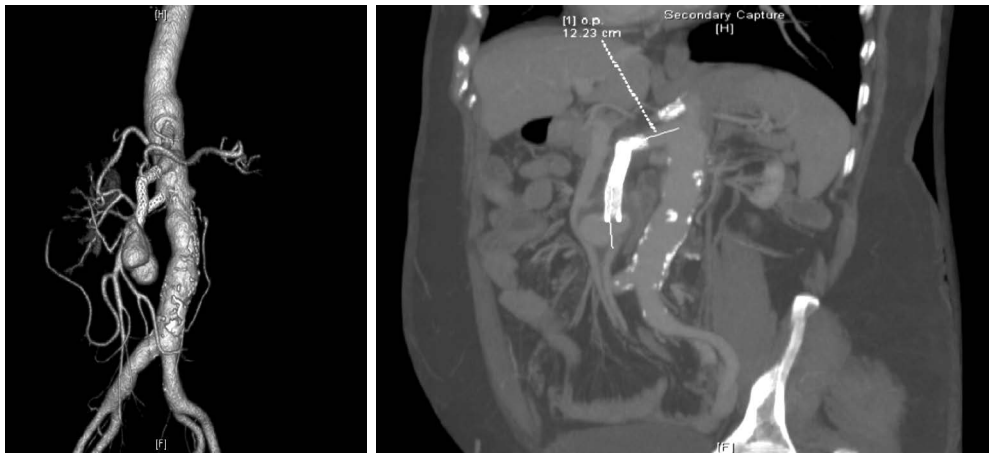

Figure 1. Abdominal computed tomography and three-dimensional reconstruction showing distal a superior mesenteric artery pseudoaneurysm with a superior mesenteric artery stent *in situ*.

The origin of the SMA was identified and a large aneurysm of 5×3 cm was found (Figure 2). The aneurysm was pulsatile with an intra-luminal thrombus. All branches arising from the SMA were clearly visualized, proximal and distal control of aneurysm was obtained, and the aneurysm was ligated. The flow was present in all SMA branches due to collaterals. Viability of the bowel was ensured, and the abdomen was closed in layers.

Postoperatively, the patient was well and asymptomatic. Postoperative abdominal ultrasonography revealed no flow in the ligated SMA aneurysm (Figure 3).

Figure 2. An intraoperative view showing a large superior mesenteric artery pseudoaneurysm with proximal and distal control following the ligation of aneurysm.

DISCUSSION

Takayasu arteritis is a type of large-vessel vasculitis with an unknown pathogenesis and protean clinical presentations. The disease has two, usually overlapping, phases. In the early, actively inflammatory phase, non-specific systemic symptoms predominate. The late, chronic phase is characterized by sequelae of arterial damage, such as stenosis and aneurysm formation.[3]

Aneurysms of the SMA constitute 5.5% of all visceral aneurysms;[4] however, their coexistence with Takayasu arteritis is rare. Stenotic or occlusive changes are more common than aneurysmal disease.[5] Compared to the involvement of the aortic arch in Japan, India, and Southeast Asia, there is an increased involvement of the thoracoabdominal aorta and renal arteries.[6]

Aneurysmal disease has been shown to involve different parts of the vascular system including the aortic arch, descending thoracic aorta, abdominal aorta, renal arteries and, rarely, more peripheral vessels.[5-8] In a recent case report, Tanaka et al.[7] reported a case of thoracic abdominal aorta aneurysm, treated via open surgery in the presence of visceral and iliac artery stenosis. In this patient and in others with involvement of the abdominal vessels, the uncommon presentation of Takayasu arteritis with abdominal pain was noteworthy. An aneurysm of the SMA in Takayasu arteritis is extremely rare. Matsumoto et al.[8] reported a case of SMA aneurysm which was successfully treated via a mini-laparotomy.

In conclusion, this case is the first case of India with a peripheral SMA pseudoaneurysm associated with Takayasu arteritis which was successfully managed

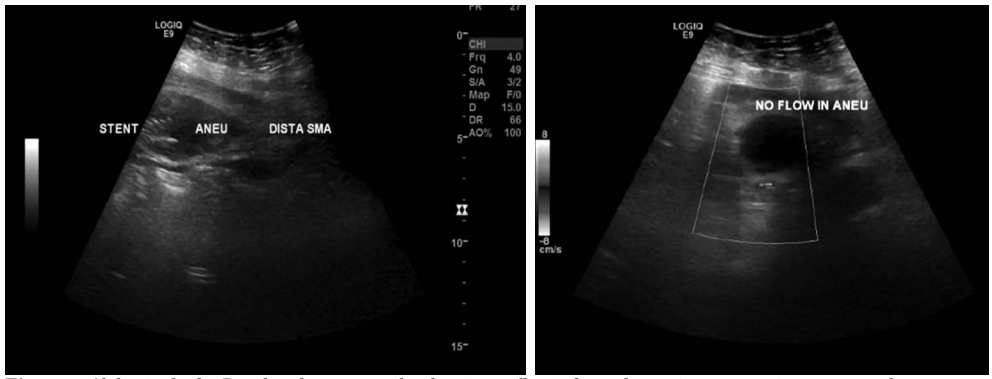

Figure 3. Abdominal color Doppler ultrasonography showing no flow in ligated superior mesenteric artery pseudo-aneurysm after surgery.

by ligating the aneurysm via laparotomy method without impairing the vascularity of the ileum. A rare possibility of peripheral aneurysms should be kept in mind when treating patients with Takayasu arteritis and these peripheral aneurysms can be managed successfully with surgical intervention.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

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