Case Report

A Case of Double Inflammatory Aneurysms in the Thoracic and Abdominal Aorta Repaired Simultaneously

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A 54-year-old male who had been experiencing a high fever for a month was admitted to a local hospital for examination. Computed tomography revealed saccular aneurysms in the descending thoracic aorta and infrarenal abdominal aorta. The walls of the aneurysms were thickened and enhanced by intravenous contrast which suggested the inflammatory change. He was transferred to this hospital and underwent graft replacement of both the descending thoracic aorta and the abdominal aorta simultaneously. Simultaneous surgery should be considered in patients presenting with multiple inflammatory aneurysms, since inflammatory aneurysms have a risk of demonstrating rapid enlargement.

Key words: inflammatory aortic aneurysm, multiple aortic aneurysms, simultaneous surgery

INTRODUCTION

Inflammatory aortic aneurysms are commonly found in the infrarenal abdominal aorta and represent 3%–10% of all infrarenal abdominal aortic aneurysms; however, multiple inflammatory aortic aneurysms are rare. This report presents a case of multiple inflammatory aortic aneurysms of the descending thoracic aorta and abdominal aorta.

CASE

A 54-year-old male who had been experiencing a high fever for a month was admitted to a local hospital for examination. He had no history of medical treatment. Blood tests showed a white blood cell count of 6100/mm³, C-reactive protein (CRP) of 15.38 mg/dl. The autoimmune screen was negative and included anti-nuclear antibody, C-ANCA (cytoplasmic antineutrophil cytoplasmic autoantibody), P-ANCA (perinuclear anti-neutrophilic cytoplasmic antibody), rheumatoid factor, IgG, Complement C3, anti-SS-A antibody, and anti-SS-B antibody. The bacterial blood tests and serum endotoxin were also negative. Computed tomography (CT) showed saccular aneurysms in the descending thoracic aorta and infrarenal abdominal aorta. The walls of the aneurysms were thickened and enhanced by intravenous contrast which suggested an inflammatory change (Fig. 1, 2).

Mycotic aneurysms were suspected and the patient was treated with antibiotics. However, the CRP did not improve and the fever continued. So the patient was transferred to this hospital for further examination and treatment.

The aneurysms were diagnosed to be inflammatory aneurysms and the patient was treated with prednisolone because the bacterial blood tests were negative, and CT showed no evidence of intramural air or fluid collection suggestive of an infective etiology. The CRP improved to 1.12 mg/dl in a week which also supported the diagnosis of inflammatory aneurysms. However, CT scan after improvement of CRP showed the descending thoracic aorta aneurysm diameter had grown from 30 mm to 32 mm.
placed with a straight Dacron graft. Because of the dense 
adhesion, we could not resect the wall of the aneurysm 
completely, and inferior mesenteric artery was ligated. 
Then, the descending thoracic aorta aneurysm was re -
sected and replaced with a Dacron graft under partial 
cardiopulmonary bypass established with cannulation of 
the abdominal prosthetic graft and inferior vena cava. 
There were no intercostal arteries to reconstruct. 
The patient’s postoperative course was uneventful. 
Bacterial tests of the aeurismal wall were negative. No 
exacerbation was found at one-year follow-up.

and that of the abdominal aorta aneurysm had grown 
from 35 mm to 37 mm, emergency surgery was per -
formed because of the risk of rupture.

The patient was placed in the semi-right lateral posi -
tion. The thoracic aorta aneurysm (TAA) was exposed 
via a left thoracotomy, and the abdominal aorta aneu -
rysm (AAA) was exposed via the left extra-peritoneal 
approach. Both of the aneurysms were glistening white, 
and densely adherent to the surrounding structures, espe -
cially between the spines. There was no abscess forma -
tion.

The abdominal aneurysm was resected first and re-
placed with a straight Dacron graft. Because of the dense 
adhesion, we could not resect the wall of the aneurysm 
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Simultaneous Surgery for Multiple IAAs

**DISCUSSION**

Multiple aortic aneurysms have been reported frequently in patients with aneurismal disease of the aorta, especially with mycotic aneurysms, pseudoaneurysms, Marfan’s syndrome, and dissection. However, inflammatory aortic aneurysms are commonly found in the infrarenal abdominal aorta, and multiple inflammatory aneurysms are rare. Therefore, the surgical strategy for multiple inflammatory aneurysms is unclear.

The indications and timing of surgery in inflammatory AAA depend on the clinical presentation and the size of the aneurysm. Sharif et al. reported all symptomatic aneurysms larger than 5 cm in diameter should be considered for early surgical repair. Corticosteroids therapy was initially administered to the current patient, because the sizes of the aneurysms were small and the patient was asymptomatic. However, both of the aneurysms showed rapid enlargement in spite of the improvement of CRP, thus surgical intervention was indicated. Surgical intervention might have been selected initially because corticosteroids may increase the risk of rupture by reducing periaortic fibrous reaction.

The choice of simultaneous or staged surgery in patients with a TAA and an AAA remains controversial. A staged operation is usually planned because surgical correction of TAA alone is thought to be high risk. However, Crawford and Cohen stated that most early deaths in staged operations are caused by rupture of the residual aneurysm, which suggests the advantage of simultaneous surgery. Takagi et al. also reported that simultaneous repair of combined TAA and AAA can be safely performed, but there is a risk of paraplegia, especially for a simultaneous repair of the descending thoracic and abdominal aorta.

If staged surgery is chosen, the first operation should treat the aneurysm that is larger, saccular, and/or rapidly enlarging. Simultaneous surgery was selected in the present case, because both the descending thoracic and abdominal aorta aneurysms were saccular and rapidly enlarging.

Patients with an inflammatory aneurysm usually undergo surgical intervention soon after they are diagnosed because they are often symptomatic. Goldstone et al. reported 80% of patients with inflammatory AAAs have symptoms of abdominal, flank, or back pain. So the speed of aneurysm enlargement cannot be precisely predicted. However, previous reports suggest the rapid enlargement of inflammatory aneurysms. In addition, the risk of paraplegia was lower than the risk of rupture in the current patient because the aneurysm of the descending thoracic aorta was a saccular type and it was therefore not necessary to replace a long segment of the descending aorta.

**CONCLUSION**

Simultaneous surgery was conducted for multiple inflammatory aortic aneurysms of the descending thoracic aorta and abdominal aorta. Simultaneous surgery should therefore be considered in patients with multiple inflammatory aneurysms, since inflammatory aneurysms have a risk of rapid enlargement.

**REFERENCES**