

## TUBERCULOUS ABDOMINAL AORTIC ANEURYSM – AN UNCOMMON ASSOCIATION WITH VERTEBRAL TUBERCULOSIS

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### ABSTRACT:

Tuberculosis of the spine is one of the common sites of extra pulmonary tuberculosis. Left untreated it not only causes destruction of spine but concomitant spread to surrounding important structure can be disastrous. Infected aortic aneurysm secondary to tuberculosis usually results from direct extension of the disease from the neighbouring vertebral bodies. It results in weakening of the aortic wall with subsequent aneurysmal dilatation which can rupture and prove fatal. It is a life threatening disease if left untreated or inadequately treated. Considering the high prevalence of tuberculosis in our country, we stress the importance of early recognition and prompt surgical intervention to save life. We report our experience of 6 cases of tuberculous abdominal aortic aneurysms. They were treated with a combination of surgical debridement, aortic replacement with graft and anti-tuberculosis chemotherapy.

**KEY WORDS:** vertebral tuberculosis, aortic pseudoaneurysm, excision, vascular reconstruction

### BACKGROUND

Tuberculosis of aortic aneurysm was first reported in 1882<sup>1</sup>. It usually results from direct extension of the disease from the contagious tuberculous spines and clinically present with backache, low grade fever, weight loss and abdominal pain. . Early diagnosis and a combination of surgical intervention (aortic reconstruction and extensive excision of the infected field) and prolonged anti tuberculosis drug therapy provide good results. All of our six cases were treated with surgical debridement, aortic restoration with graft or synthetic patch and long term anti tuberculosis therapy. Five patients had an uneventful recovery. One patient with suprarenal aortic aneurysm died 6 hours after the surgery.

### CASE REPORTS

Six patients (3 males and 3 females) reported to us in Combined Military Hospital Lahore from January 2012 to March 2015. All of them had low grade fever, weight loss, abdominal pain and backache. All patients were between the age

group of 50-60 years, except one female who was 27 years old.

Ultrasonography of the abdomen revealed saccular abdominal aortic aneurysm. Of these, three were infra-renal and three had supra-renal extensions. The transverse diameter of the aneurysm varied between 55-79mm. X-rays of dorsal spine revealed erosion of vertebral bodies in the area of aneurysm. CT Aortogram confirmed false aneurysm arising from postero-lateral wall of aorta (Figure 1). MRI confirmed erosion of vertebral bodies with presence of periaortic necrotic tissues.

All patients underwent explorative laparotomy of the abdomen. One patient (27 years female) underwent thoracoabdominal exploration for supradiaphragmatic proximal control of the aorta. Contained leakage was found in all cases. All the patients had thorough debridement of necrotic material. Five patients had aortic replacement with Dacron tube graft of 16 mm

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diameter. One 55 year female who had ruptured aneurysm had Dacron patch repair. In three cases with suprarenal aneurysm superior mesenteric artery and caeliac axis were re-implanted onto the Dacron graft. A postoperative recovery was uneventful in 5 cases, and they were discharged home on antituberculous therapy for 9 months. One female patient of 27 years with supra renal aneurysm died six hours after surgery in intensive care unit. In all cases, microscopy of necrotic material revealed Acid Fast Bacilli (AFB) and Mycobacterium Tuberculosis was isolated on culture. The follow up varied from 6 months to 3 years and was free of any complications.

## DISCUSSION

Almost 8 million patients are infected with tuberculosis and 2 million die with this disease every year. In 1882, Weigert first described tuberculous aortitis<sup>1</sup>. Tuberculous aortic aneurysms usually result from direct extension of tuberculous focus, hematogenous contamination through the vasa vasorum or autoimmune response to tuberculosis<sup>2,3</sup>. Direct extension of infection may result from tuberculous lymphadenitis, tuberculosis of lungs, intestine or vertebral bodies<sup>2,4-6</sup>. All of our patients had aortic aneurysm associated with tuberculosis of dorsal spine. The aorta is most commonly affected vessel with equal incidence of involvement of thoracic and the abdominal segments<sup>2,4</sup>.

Tuberculous aortic aneurysm may be asymptomatic or present with nonspecific symptoms in the early stage, so a high index of suspicion for diagnosis is required. Presence of AFB in the necrotic tissues on microscopy or isolation of Mycobacterium Tuberculosis on culture is confirmatory.

In 1955, Rob et al. reported the first successful reconstruction of a tuberculous aortic aneurysm<sup>5</sup>. Long et al. observed that only those patients survived who were treated with combination of surgery and antituberculous therapy and all those treated with single modality died<sup>2</sup>. The key to success in treating such lesions is mandatory surgical intervention and long term chemotherapy. The surgery

consists of debridement of all necrotic tissue and aortic restoration by prosthetic graft or by synthetic patchplasty<sup>2</sup>. The medical therapy consists of 9 months course of antituberculous chemotherapy.

Repair of tuberculous aortic aneurysms with endovascular technique, has been reported with very limited follow up<sup>3, 6</sup>. Endovascular repair does not allow extensive debridement of the infected periaortic tissues, hence poses high risk of recurrence<sup>7</sup>.

## CONCLUSION

Tuberculous aortic aneurysms are uncommon but not rare. Treating physician should have a high index of suspicion when a patient has tuberculosis of dorsal spine. A combination of surgical intervention and prolonged medical therapy is the only hope to save life and provide a disease-free long-term survival.

## LEGENDS FOR FIGURES



**Figure 1: CT Aortogram showing the saccular aneurysm of abdominal aorta along the erosion of the neighbouring dorsal spine**

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1	Muhammad Jamil	Data collection/analysis, article writing
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Value of a man depends upon his courage; his veracity depends upon his self-respect and his chastity depends upon his sense of honor.

***Hazrat Ali (Karmulha Wajhay)***