

Pseudoaneurysm of Ascending Aorta with Extrinsic Compression of Left Main Coronary Artery

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Abstract

Pseudoaneurysm of ascending aorta carries high mortality and morbidity due to adhesions and compression over surrounding structures. It occurs either after some form of injury to aorta or after infectious pathology. Spontaneous pseudoaneurysms are very rare as are the extrinsic compression of left main coronary artery. We are presenting a case with both of these rare ties. Patient was a female of middle age presented with cough and a past history of treated pulmonary tuberculosis 12 years before. During evaluation by X-ray, CECT is a large pseudoaneurysm of ascending aorta with oval defect in posterior wall above sinotubular junction. It was compressing 90% of the left main coronary artery, occluding 100% of the right pulmonary artery with formation of collaterals to it from surrounding arteries. Active tuberculosis and syphilis were ruled out. Patient underwent excision of pseudoaneurysm, replacement of ascending aorta by Dacron graft and coronary artery bypass under TRCA and CPB. There was massive intraoperative bleeding, and patient died on the fourth day due to sepsis and ARDS.

Keywords

Pseudoaneurysm, Aorta, Cardiopulmonary Bypass, Circulatory Arrest

1. Background

Pseudoaneurysm of ascending aorta without any operative procedure on aorta can be due to infective pathology and is known as mycotic aneurysm. Tubercular involvement of aorta can rarely present as pseudoaneurysm. As far as tuberculous mycotic pseudoaneurysms of the ascending aorta are concerned, it is extremely rare. It is rare

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even in a country like India where the Burden of tuberculosis is enormous. Sachin *et al.* have suggested that it is common if suspected in appropriate clinical setting and they have reported 8 cases of tuberculous involvement in various parts of the aorta including one having a pseudoaneurysm of the ascending aorta. This entity carries very high mortality and morbidity since it is rare and experience is limited in dealing this complex entity compressing important structures like the left main in our case.

2. Case Description

A 45-year-old female presented with complaints of cough and occasional dyspnea of 2 years duration. She also had history of treated pulmonary tuberculosis 12 years ago. Chest X ray PA view was done to evaluate cough revealed mediastinal widening and subsequent CECT Scan showed a large pseudoaneurysm of ascending aorta just above the sinotubular junction communication from posterior wall having multiple collateral arterial supply from rt. subclavian and descending aorta. Main pulmonary artery was compressed significantly and near total occlusion of rt. Pulmonary artery. Left main coronary was compressed to 90% but patient had no symptoms of ischemia. It was further confirmed by coronary angiogram. Transthoracic echo showed normal values, chambers and functions. Blood counts, ESR, CRP, serum ADA, INF-G assay and sputum culture failed to demonstrate active tuberculosis as RPR for syphilis. Lipid profile was normal.

Intraoperatively, dense adhesions were present between pericardium and aorta and heart. Femoral vessels were not suitable for cannulation so aortic cannulation done along with two staged atrial cannulation and CPB initiated. LV vent was placed. There was no space to put a cross clamp so direct coronary cardioplegia (Del Nido) given and total circulatory arrest under hypothermia is utilised to excise mass and perform distal anastomosis of 22 mm Dacron graft to aorta. There was an opening 2×1.5 cm in posterior wall of aorta. This graft was used for perfusion and then proximal anastomosis done. Saphenous vein graft was put to left ant descending artery.

Intraoperative bleeding was major problem due to adhesions and backflow from collaterals to mass so patient required massive transfusion also needed to pack the cavity and weaned off CPB and shifted to ICU with chest opened. Next day bleeding controlled and chest closed but developed tamponade so again opened and finally patient died due to sepsis. Biopsy of aorta revealed chronic inflammation without granulomas and culture of clot from cavity was sterile.

3. Discussion

Pseudoaneurysms of ascending aorta mostly occur after some aortic intervention. Rarely, it can occur following infective pathology like tuberculosis and syphilis. [1] Long R *et al.* suggested that Tuberculous ascending aorta pseudoaneurysm (TBAA) appeared to result from erosion of the aortic wall by a contiguous focus; 25% from direct seeding of the aortic intima or of the adventitia or media (via the vasa vasorum). Most of the aneurysms were saccular (90%) and false (88%). They concluded that symptomatic TBAA is a rare but uniformly fatal lesion if not diagnosed promptly; in the context of active TB and especially miliary TB, TBAA should be suspected whenever one or more of the three clinical scenarios are present and combined medical and surgical therapy appears to offer the best chance of a cure. Tuberculous ascending aortic pseudoaneurysm is very rare even in the country like India where burden of tuberculosis is still massive. Till now [2] Sachin *et al.*, have described such a case but this is different because tubercular involvement is not confirmed even with the previous history of treated pulmonary tuberculosis and extrinsic compression of left main coronary artery which itself is quite rare. The asymptomatic presentation of our patient is remarkable.

Contrast CT scanning, MRI and echocardiography are useful in the diagnosis of pseudoaneurysm of the ascending aorta. Surgical repair is mandatory.

4. Conclusion

This entity carries very high mortality and morbidity since it is rare and experience is limited in dealing this complex entity compressing important structures like the left main.

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