



Mycotic Peripheral Pulmonary Arterial Pseudoaneurysm in Patent Ductus Arteriosus with Infective Endocarditis: A Rare but Fatal Complication

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Abstract

Patent ductus arteriosus with infective endocarditis complicated by peripheral pulmonary arterial mycotic pseudoaneurysm is rare now-a-days especially due to early diagnosis and more efficient antibacterial drug management. We here described a case report of PDA with infective endocarditis complicated by peripheral pulmonary artery mycotic pseudoaneurysm which was managed successfully via ligation of PDA and left lower lobectomy.

Case Presentation

A 7 year female child was admitted to department of paediatric cardiology with complaints of dyspnoea NYHA II and high grade fever since 15 days. On general examination, she had continuous murmur in left infra clavicular region. On chest x-ray there was cardiomegaly with dilated pulmonary arteries along with pulmonary plethora without any soft tissue shadow in lung field. 2D echocardiography showed moderate sized Patent Ductus Arteriosus (PDA) with vegetation on main pulmonary artery 6 mm × 6 mm in sized. Blood culture showed growth of streptococcus viridians. So diagnosis of moderate PDA with infective endocarditis was made and she was started on antibiotics according to culture sensitivity. She responded well after starting the antibiotics and her fever subsided. After 5 days, she developed massive haemoptysis for which urgent Computed Angiography (CT) was performed. Contrast CT scan of pulmonary artery showed PDA with diameter of 14 mm at aortic end and 7.5 mm at pulmonary end with 3.2 cm × 2.9 cm × 2.5 cm pseudo aneurysm of anteromedial basal branch of left lower pulmonary artery within the cavity along with prolapse of left lower lobe (Figure 1 and 2).

Patient was stabilized and posted for urgent surgery. Patient was approached through 4th left posterolateral thoracotomy. PDA was looped and ligated. Left lower lobectomy was performed. Procedure was uneventful. Patient was extubated within 2 hours and remained stable without any haemoptysis or fever in post op period. She was discharge after completion of 4 weeks of antibiotic course. Till date patient was asymptomatic and still in follow up.

Discussion

The term mycotic aneurysm, first described by Osler, has been used to denote infection involving arterial wall [1]. Mycotic pseudo aneurysm of pulmonary artery in case of infective endocarditis with PDA is rare now-a-days due to early diagnosis and availability of efficient antibacterial drugs [2]. Most of the authors reported a case of mycotic aneurysm in patients with right sided infective endocarditis [3,4]. This case is rare as patient developed pseudo aneurysm of pulmonary artery despite being on antibacterial treatment and was developed within a short span of 5 days as the chest x-ray on admission failed to show any soft tissue shadow.

Pulmonary artery mycotic pseudo aneurysms by definition do not have a covering of all three layers of the arterial wall with infection of the involved artery. When occurring within a consolidated or infected lung, it can erode the bronchial tree and this communication with the airways, may result in massive haemoptysis or even death. Early recognition and prompt treatment may help to reduce the associated mortality rate. The various options available for management includes: 1) Surgical 2) Catheter based intervention. The catheter based interventions are now-a-days preferred

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Received Date: 14 Apr 2018

Accepted Date: 26 Apr 2018

Published Date: 03 May 2018

Citation:

Patel K, Rajan SK, Garg P, Anantnarayan C, Rana Y, Gajjar T. Mycotic Peripheral Pulmonary Arterial Pseudoaneurysm in Patent Ductus Arteriosus with Infective Endocarditis: A Rare but Fatal Complication. *World J Surg Surg Res.* 2018; 1: 1007.

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Figure 1: Contrast CT Angiography showing large pseudoaneurysm of anteromedial branch of left lower pulmonary artery with patent ductus arteriosus.

due to several advantages which includes minimal trauma to normal lung parenchyma, minimal blood loss and smaller incision. However there are several limitations of this approach 1. It cannot be offered in a patient with unsuitable anatomy like patients with main pulmonary artery aneurysm 2. Persistent aneurysm and persistent infection which can be present in up to 22% of patients 3 [5,6]. Non-availability of facilities in every center; surgery remains main stay of treatment in a patient with destroyed lung parenchyma, aneurysms involving main pulmonary artery and where endovascular treatment not possible. The options available are resection of aneurysm, lobectomy, patch repair or dacron graft replacement [7-9]. In index case, there was peripheral mycotic pseudo aneurysm within the cavity with destroyed lower lobe of left lung along with large PDA. These findings made patient unsuitable for percutaneous treatment so PDA ligation with left lower lobectomy was performed successfully.

Conclusion

Large patent ductus arteriosus complicated by infective endocarditis with large peripheral mycotic pseudo aneurysm of pulmonary artery complicated with massive hemoptysis is rare now-a-days. Along with antibiotics, emergent Surgery remained the treatment of choice in this condition.

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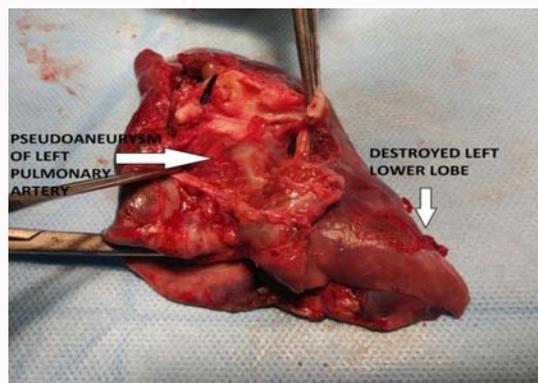


Figure 2: Resected specimen showing pseudoaneurysm with destroyed left lower lobe.

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