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CASE REPORT – MYCOTIC ANEURYSM OF PULMONARY ARTERY IN A PRETERM BABY WITH PDA

Cardiology

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ABSTRACT

A 5-month-old baby with preterm delivery with history of NICU stay and recent history of pneumonia, admitted with high grade fever and respiratory distress. Diagnosed to have PDA with (L R shunt) with infective endocarditis and vegetation at pulmonary end of PDA which was complicated by mycotic aneurysm of LPA. Blood culture was positive for staph. aureus and was treated with appropriate antibiotics and underwent surgical resection of mycotic aneurysm with PDA ligation and LPA reconstruction. in this case report it is necessary to understand that the preterm infants are commonly associated with PDA and at risk of IE with any precipitating factors.

KEYWORDS

Mycotic aneurysm, PDA, pre term infant

INTRODUCTION

PDA most commonly seen in preterm infants, usually undergoes spontaneous closure and persistence of PDA into latter part of infancy or childhood causes volume overload to left ventricle causing heart failure.

In PDA with left to right shunt, there would be turbulence of shunted blood providing a nidus for development of infective endocarditis as pre term infants are more prone for infection immediately after delivery or during later part of infancy.

CASE STUDY

5-month-old female baby with preterm delivery at 8 months of gestation with low birth weight of 1kg and had NICU stay post-delivery for 20days and was diagnosed with PDA (L-R SHUNT). Had history of pneumonia– 1 month back for which injectable antibiotics was given for 5 days.

Now, admitted with history of high-grade fever and respiratory distress.

Had Vitals Heart Rate- 150/min, RR-40/min, Sp02- 91 % on RA

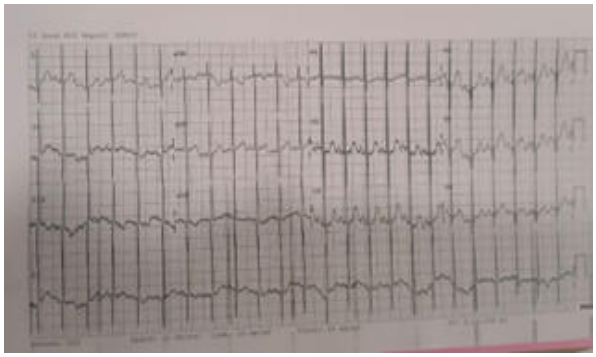
Investigations, Hb- 7.7 g/dL, TLC- 23,200, PLT-547000, ESR -52 mm/Hr., CRP-77mg/dL

Blood c/s – staph aureus

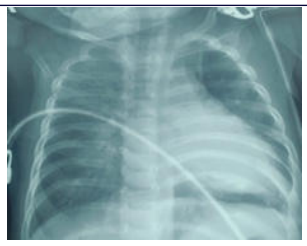
2 D echo showed large PDA with left to right shunt, with large vegetation of 15* 7 mm attached to pulmonary artery end of PDA, complicated with large mycotic aneurysm32*30mm located posterior to LV

CTPA DONE – suggestive of large mycotic aneurysm arising from LPA near PDA with vegetation and thrombus formation

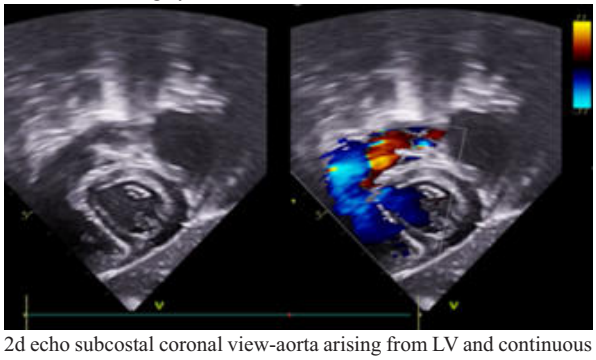
Patient was given appropriate antibiotics as per culture sensitivity and later surgical resection of mycotic aneurysm and PDA ligation with reconstruction of LPA.



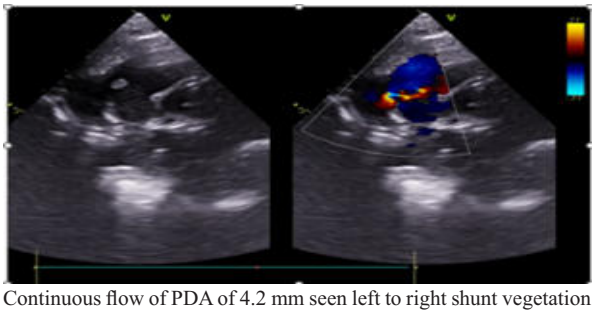
ECG s/o increased lv volume with tall R wave and q wave in V5 V6 lead



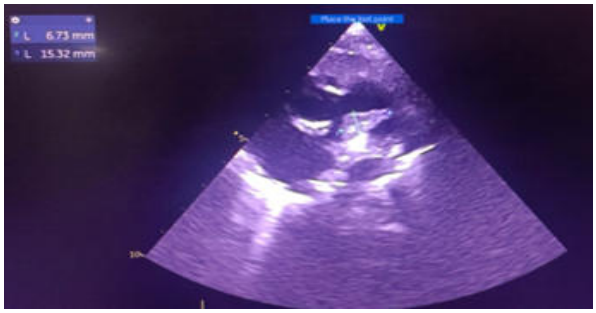
Cxr s/o cardiomegaly



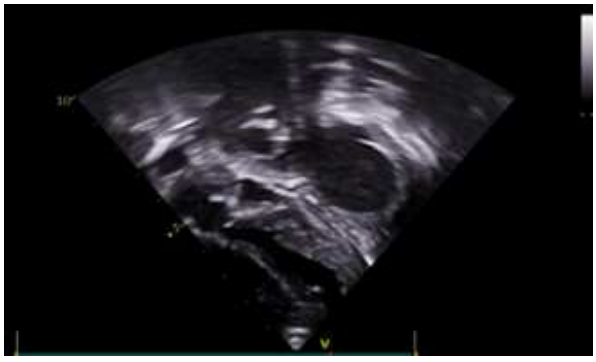
2d echo subcostal coronal view-aorta arising from LV and continuous flow of PDA seen



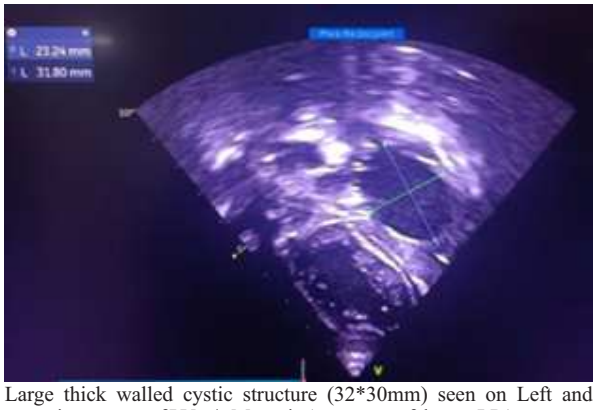
Continuous flow of PDA of 4.2 mm seen left to right shunt vegetation at PA end.



Large Hyperechoic structure(15*7mm) Attached to PA End of PDA Protruding into RPA Origin- P/O Vegetation



Large Thick walled Cystic structure seen on left and posterior aspects of LV



Large thick walled cystic structure (32*30mm) seen on Left and posterior aspects pf LV-p/o Mycotic Aneurysm of data or LPA

CTPA DONE – suggestive of large mycotic aneurysm arising from LPA near PDA with vegetation and thrombus formation

DISCUSSION

Mycotic aneurysm of the pulmonary artery is a rare and life-threatening condition, particularly in neonates. It involves localized, infectious weakening of the vessel wall, often due to bacterial or fungal seeding of a pre-existing arterial abnormality or injury. In the context of a preterm neonate with a patent ductus arteriosus (PDA), the risk is potentially increased due to altered hemodynamics and frequent invasive interventions, such as catheterizations and prolonged mechanical ventilation.

In this case, the preterm neonate had a hemodynamically significant PDA, which may have predisposed the pulmonary artery to endothelial injury due to turbulent flow. Such injury, coupled with the immunological immaturity of preterm infants and potential episodes of sepsis or bacteremia, can create a nidus for infection within the arterial wall, leading to aneurysm formation. The precise pathogenesis in neonates is not well elucidated due to the rarity of reported cases, but the role of nosocomial infections and prolonged intravascular access is well-recognized.

Mycotic pulmonary artery aneurysms (MPAAs) in neonates may present nonspecifically, with signs of respiratory distress, hemodynamic instability, or persistent sepsis unresponsive to antibiotics. In some cases, rupture may be the first sign, resulting in hemoptysis or sudden cardiovascular collapse. Diagnosis relies on high-resolution imaging, including echocardiography and computed tomography (CT) angiography, which can delineate the aneurysmal dilation and assess for associated vascular anomalies or complications.

Management remains challenging and must be individualized. Antibiotic therapy is cornerstone and should be initiated promptly based on culture sensitivity. Surgical intervention may be necessary in cases of impending rupture or hemodynamic compromise. In neonates, however, surgical risk is substantial, and conservative management with close monitoring is often preferred in stable cases.

Our case underscores the importance of high clinical suspicion and early imaging in preterm neonates with PDA and sepsis-like symptoms. The presence of a mycotic aneurysm should be considered when there is persistent bacteremia or unusual radiographic findings. Multidisciplinary care involving neonatology, pediatric infectious diseases, and pediatric cardiothoracic surgery is crucial for optimal outcomes

CONCLUSIONS

Mycotic aneurysm of the pulmonary artery is a rare but serious complication in preterm neonates, particularly those with predisposing factors such as PDA and prolonged hospital care. Early diagnosis through imaging and prompt initiation of appropriate antibiotic therapy are vital to prevent rupture and improve survival. This case highlights the need for vigilance in evaluating unexplained cardiopulmonary instability in preterm infants with PDA and reinforces the importance of infection prevention and early intervention in high-risk neonatal populations. In this case report we reported case of infective endocarditis of pre term delivered infant with PDA complicated with large mycotic aneurysm of LPA and underwent surgery for aneurysm.

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