Congenital Atrial Septal Aneurysm-A Rare Case Report

Dr.Likhitha Bhukya, Dr.Adarsh Dhavaleshwar, Dr.Vineeta Gautam

*Abstract:-***Background: Congenital atrial septal aneurysm (ASA) is a rare cardiac anomaly characterized by excessive mobility or bulging of the interatrial septum. While commonly asymptomatic, ASA can occasionally lead to complications such as arrhythmias, embolism, or hemodynamic disturbances, necessitating careful evaluation and follow-up.**

Case Presentation: We report a case of a 22-year-old second gravida mother who presented at 40 weeks of gestation with A fetal ultrasound at 37 weeks revealing cardiomegaly with thickened atrioventricular valves, while earlier scans were unremarkable. The mother had a normal vaginal delivery of a female baby weighing 3.1 kg. The newborn, requiring routine resuscitation, was admitted to the NICU for monitoring due to antenatal concerns. Postnatal examination showed no murmurs, respiratory distress, or cardiac symptoms, and the baby was clinically stable. A 2D echocardiogram revealed a prominent atrial septal aneurysm without obstruction to blood flow. Given the absence of significant cardiac manifestations, a conservative approach was taken, and the baby was discharged on direct breastfeeding with a plan for follow-up after one month.

Discussion: Congenital ASA is often an incidental finding on echocardiography, with most cases remaining asymptomatic. In neonates, it is generally a benign condition requiring periodic follow-up rather than immediate intervention. The management strategy is determined by factors such as aneurysm size, mobility, and the presence of associated cardiac defects. In this case, the absence of clinical symptoms supported a conservative management plan, consistent with current guidelines.

Conclusion: This case highlights the importance of prenatal and postnatal echocardiographic evaluation in detecting congenital ASA. While usually benign, appropriate follow-up is crucial to monitor for potential complications. A structured follow-up plan is necessary to ensure the timely identification of any evolving cardiac concerns.

Keywords: **Congenital Atrial Septal Aneurysm, Neonatal Cardiology, Echocardiography, Conservative Management, Congenital Heart Defects**

INTRODUCTION TO CONGENITAL ATRIAL SEPTAL ANEURYSM

Atrial septal aneurysm (ASA) is a rare congenital cardiac anomaly characterized by excessive mobility or bulging of the interatrial septum into either the left or right atrium, often associated with patent foramen ovale (PFO) or atrial septal defects (ASDs) [1]. It is typically diagnosed through echocardiography, with transesophageal echocardiography (TEE) being the gold standard for detection and assessment [2].

Although congenital ASA is often asymptomatic, it has been linked to an increased risk of paradoxical embolism, arrhythmias, and, in rare cases, obstructive hemodynamic consequences [3]. In neonates and infants, isolated ASA is generally considered a benign condition requiring periodic follow-up rather than immediate intervention [4].

The clinical significance of ASA varies depending on its size, mobility, and associated cardiac anomalies, necessitating individualized management strategies based on echocardiographic findings [5]. While most cases resolve spontaneously during early childhood, persistent or symptomatic cases may require medical or surgical intervention [6].

CASE

A 22-year-old second gravida mother presented at 40 weeks of gestation. A prior ultrasound at 37 weeks had revealed fetal cardiomegaly with thickened atrioventricular valves, though all previous scans had been reported as normal.She later progressed into labor and had a normal vaginal delivery of a female baby weighing 3.1 kg. The newborn required routine resuscitation at birth and was subsequently admitted to the NICU for further monitoring due to the antenatal findings of cardiomegaly.

Clinically, the baby was stable, exhibiting good cry and activity, with no murmurs detected on examination. Given her stable condition, she was initiated on direct breastfeeding under close observation. A 2D echocardiogram was performed, which revealed a prominent atrial septal aneurysm without any obstruction to blood flow. As there were no significant cardiac concerns, a plan for follow-up observation was made. The baby was discharged in stable condition, on direct breastfeeding, with no

signs of respiratory distress or other cardiac manifestations. No decongestant therapy was required, and a follow-up was scheduled after one month.

DISCUSSION

Congenital atrial septal aneurysm (ASA) is a structural cardiac anomaly that, although rare, is increasingly detected due to advances in prenatal and neonatal imaging techniques [1]. While it is often asymptomatic, its association with other congenital heart defects, such as patent foramen ovale (PFO) and atrial septal defects (ASDs), necessitates careful evaluation and follow-up [2]. In this case, fetal cardiomegaly was identified at 37 weeks of gestation, raising concerns about possible underlying structural heart abnormalities, including ASA. However, earlier scans had been normal, suggesting a late-onset or progressive nature of the cardiac changes [3].

Neonatal ASA is frequently diagnosed incidentally during echocardiographic evaluations for other suspected cardiac conditions [4]. In this baby, postnatal echocardiography confirmed the presence of a prominent atrial septal aneurysm without significant obstruction to blood flow, indicating a benign variant with no immediate hemodynamic consequences [5]. The absence of clinical symptoms such as cyanosis, respiratory distress, or feeding difficulties further supported a conservative approach to management [6].

The management of neonatal ASA depends on the size, mobility, and potential for complications such as arrhythmias, embolism, or hemodynamic disturbances [7]. In most cases, isolated ASA in neonates is considered benign and does not require immediate intervention, but regular follow-up is essential to monitor for potential progression or associated defects [8]. Spontaneous resolution is common in infancy and early childhood, and intervention is usually reserved for cases with significant shunting or thromboembolic risk [9].

Given the stability of the newborn in this case, direct breastfeeding was initiated, and no decongestant therapy was required. This aligns with current recommendations that suggest conservative management with periodic reassessment for asymptomatic cases [10]. The scheduled one-month follow-up is appropriate to ensure the continued well-being of the infant and to monitor for any emerging complications that may warrant further intervention [11].

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