Neonatal arch obstruction: Not always a coarctation

Karoline Krzywda

Title: Neonatal arch obstruction: Not always a coarctation

Background: Spontaneous neonatal arch thrombosis is a rare, highly lethal cause of aortic arch obstruction.

Case: A 1-day-old male infant presented failing CCHD screen, on prostaglandin infusion for echocardiographic concerns of aortic coarctation. Repeat echocardiogram revealed severe arch obstruction due to a large, 7.5x5mm echogenic mass, at the aortic isthmus (Fig1A) with right to left systolic PDA flow. CT angiography confirmed presence of a large aortic arch thrombus (Fig1B). Bivalirudin infusion was initiated without change in thrombus size after 2 days. Tissue plasminogen activator (tPA) was subsequently administered with significant reduction in thrombus size to 3x4mm (Fig1C) on day 1 and complete resolution by day 3 of tPA administration (Fig1D). Prostaglandin infusion was discontinued, and patient was discharged home on daily aspirin. There was no recurrence of thrombus at 6-week follow up. Hypercoagulability work up was negative.

Medical Decision Making: While coarctation of the aorta remains the most common cause of neonatal arch obstruction, early recognition of the rare event of spontaneous arch thrombosis prompted an adequate plan of medical management with bivalirudin therapy followed by tPA infusion.

Conclusion: This case highlights a rare yet critical cause of neonatal aortic obstruction due to spontaneous thrombosis. This also emphasizes the importance of precise diagnosis and aggressive medical intervention leading to excellent recovery outcomes.