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Neonatal hypoxia due to pulmonary artery thrombus

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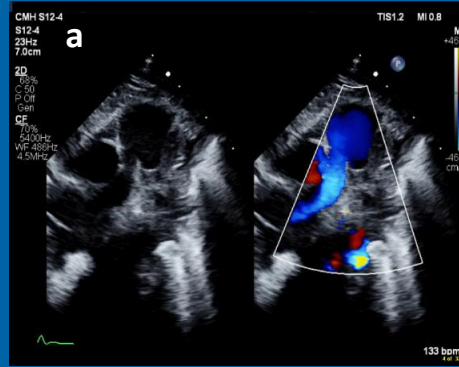
BACKGROUND

- Pulmonary artery thrombosis is a rare occurrence.
- It should be considered in neonates with refractory hypoxia.
- The following case highlights the diagnosis and management of a neonate with pulmonary artery thrombus.

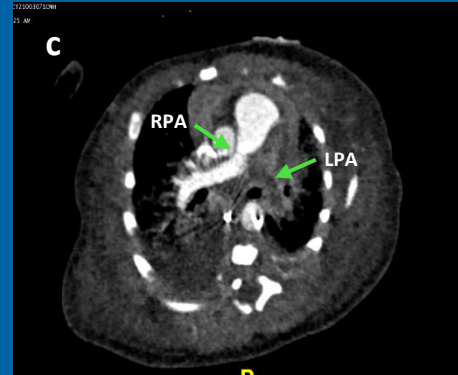
CASE

- A 33-week 4-day infant was born via c-section for new onset hydrops and poor biophysical profile.
- She was hypoxic at birth requiring intubation.
- She continued to have persistent hypoxia despite high-frequency oscillatory ventilation with FiO2 100%, and inhaled nitric oxide.
- An echocardiogram was performed and revealed echo brightness in the lumen of the left pulmonary artery (LPA) with no color flow (figure 1a), which was concerning for occlusive thrombus.
- Chest CT angiogram confirmed the diagnosis (figure 1b, c).
- Hematology was consulted and recommended systemic thrombolysis (tissue plasminogen activator, tPA) with concomitant anticoagulation (Bivalirudin).
- Imaging 24 hours after therapy revealed a mobile thrombus with antegrade flow through the LPA (figure 1d).
- After 48 hours, the LPA was patent with no obvious clots and tPA was stopped (figure 1e).

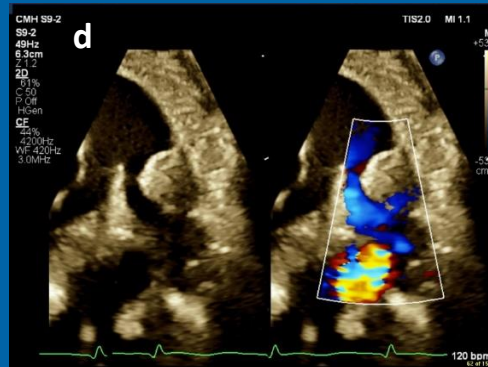
Neonatal hypoxia due to pulmonary artery thrombus.



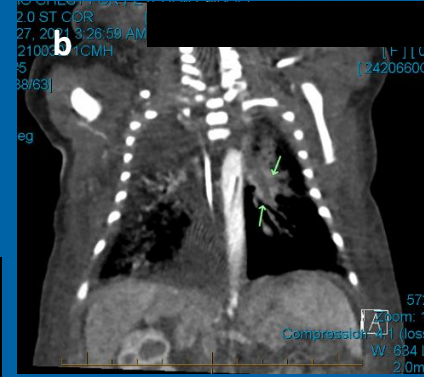
a. Parasternal short axis of pulmonary arteries showing brightness within LPA and no color flow.



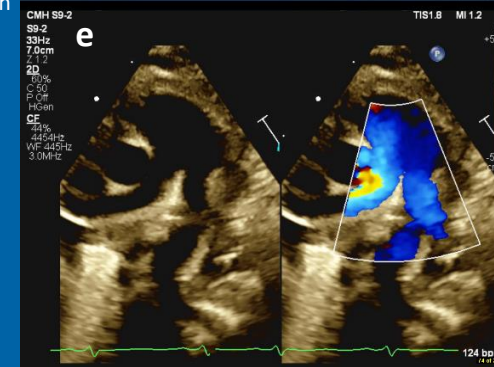
c. Axial CT image showing RPA with thrombus within LPA.



d. Thrombus seen within LPA lumen with color flow after 24 hours of tPA.



b. Coronal CT chest image showing thrombus within LPA.



e. Bilateral pulmonary arteries seen with normal size and color flow after 48 hours of tPA.

DECISION MAKING

- Treatment of thromboembolic events in neonates requires a multidisciplinary approach.
- Collaboration amongst multiple specialties allows for multiple factors to be taken into consideration when deciding on management.
- The event in this patient was thought to be acute which led to her preterm delivery.
- This history and clinical picture made systemic thrombolysis suitable treatment.

CONCLUSION

- Refractory hypoxia in neonates without cyanotic congenital heart disease requires consideration for other rare etiologies.
- This case highlights the rare case of neonatal pulmonary artery thrombus and the multidisciplinary approach necessary to treat thromboembolic events in neonates.

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