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Chandra Swanson
Children's Mercy Hospital

Justin Sobrino
Children's Mercy Hospital

Tolulope A. Oyetunji MD MPH
Children's Mercy Kansas City

Erin Khan
Children's Mercy Kansas City

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Recurrent Primary Spontaneous Pneumothorax Masquerading as a Congenital Pulmonary Airway Malformation in a Young Female

Chandra Swanson, MD; Justin Sobrino, MD; Tolulope Oyetunji, MD, MPH, FACS, FAAP; Erin Khan, MD

Children's Mercy Kansas City

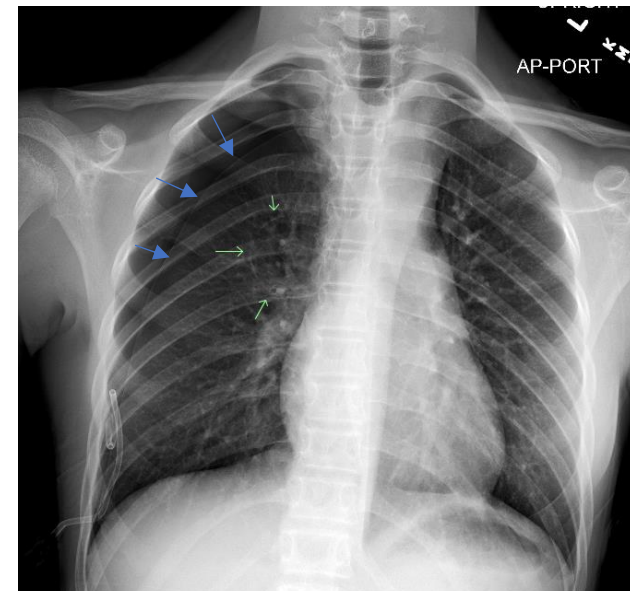
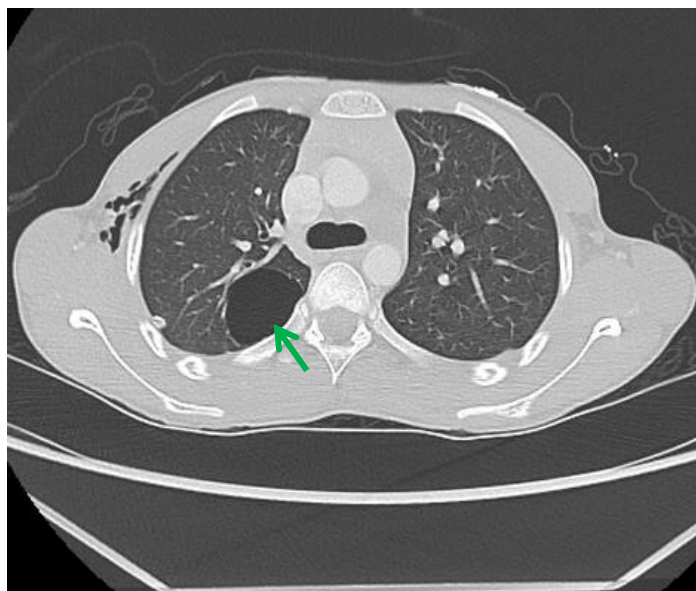
Introduction

- Spontaneous pneumothoraxes (sPTX) in children are uncommon
- Can be idiopathic or associated with underlying pulmonary disease
- Can present management challenges

Case Description

- 12-year-old female with remote atopy history and asymptomatic SARS-Co-V2 infection with 4 days of progressive chest pain, dyspnea on exertion
- Found to have right sided sPTX
- Right hilar cystic lucency identified on serial chest x-rays, confirmed on CT and concerning for congenital lesion
- Discharged on day 6; readmitted 3 months later with recurrent sPTX and cystic RUL lung mass on chest x-ray
- Wedge resection completed; pathology showed pleural fibrosis and focal hemorrhage without malignancy, most consistent with a ruptured bleb

Imaging



Left Figure – Initial Presentation. Air-filled cystic structure in the right upper lobe (bold green arrow) with a 33 x 33 x 40 mm dominant cyst and several peripherally oriented smaller cysts measuring up to 5 mm in diameter. Thin peripheral wall marginates the cyst from otherwise normal appearing lung.

Right Figure – Subsequent Presentation. Right pneumothorax (blue arrows) with right chest tube in place. Persistent right upper lobe cystic lesion (thin green arrows).

Discussion

- In tall, thin adolescents, PTX often categorized as primary spontaneous
- Most resolve with conservative management
- Congenital lung malformations are a rare secondary cause; can often detect on plain films alone
- Recommend careful review of imaging for congenital malformations requiring specific surgical intervention

COVID-19 and Pneumothoraxes

- Severe COVID-19 may be associated with cyst formation and secondary PTX
- Mechanical ventilation may increase risk and poor outcomes; data mixed
- Further pediatric data needed

References

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