Hemoptysis from Retained Intrapulmonary Foreign Body in Pediatric Trauma

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Case Report

7-year-old male presented to ED “coughing up blood”
- Mother noticed blood staining on bed sheets 5 days prior to presentation
- This a.m. mother notices he is coughing up bloody sputum

ED Visit #1
- PMH: GSW to chest / R hand at age 1
- PSH: Surgical repair R hand injury
- SH: Recently moved out of state, no sick contacts, no TOB exposure
- FH: Mother has asthma; no other pulmonary disease
- All: NKDA Meds: none
- ROS otherwise negative
- PPD placed
- Discharge home with Zithromax
- Follow-up as outpatient with pediatric pulmonologist

ED Visit #2
- 97.3º F 92 98/57 18 100% RA
- Productive cough with 1 tsp of blood
- Chest: CTAB no wheezes/rhonchi
- PPD had been read as negative
- CT scan ordered
- Discharge home with Zithromax
- Follow-up as outpatient with pediatric pulmonologist

Preoperative CT
- Radiopaque shrapnel in the right upper lobe
- Significant streak artifact
- Possible erosion in adjacent vasculature

Chest CT
- Radiopaque shrapnel in the right upper lobe
- Significant streak artifact
- Possible erosion in adjacent vasculature

Gross Pathology
Pulmonary tissue with acute and chronic inflammation, fibrosis, foci of organizing pneumonia, hemosiderin deposition, and recent organizing hemorrhage.

Case Reports in Adults

  - Interstitial hemoptysis attributed to retained surgical sponge after 43 years
  - Hemoptysis 13 and 22 years after thoractomoy—retained pleural drain
- Kelly et al. Trauma. 1976
  - Bronchial occlusion and post-obstructive lung infarction without hemoptysis 7 years after injury
  - 5 bouts of nocturnal hemoptysis 25 years after shrapnel injury
- Saunders et al. J Trauma. 1992
  - Bronchial erosion with hemoptysis 3 months after injury with eventual disruption of collateral
  - Life-threatening hemoptysis 17 years after GSW to chest Self-limited hemoptysis at 4 and 12 years post injury

Delayed sequelae from intrathoracic retained foreign bodies are rare. Retained missiles will typically become encapsulated in scar tissue and remain in a fixed position once healing has occurred. There are scattered reports in the adult literature of erosion and migration into surrounding tissues resulting in hemoptysis, embolization into systemic arteries or veins, pneumonitis, abscess, bronchial obstruction, and even eventual expectoration of the foreign body. Life-threatening pulmonary hemorrhage is noted in the literature which was heralded by self-limited episodes of hemoptysis. We present the case of a 7-year-old male who presented with progressive hemoptysis 6 years after penetrating chest trauma. A pulmonary wedge resection with retained bullet fragment resulted in complete resolution of symptoms and return to normal functional status.

Delayed sequelae of thoracic trauma

- Pneumatocele
- Pulmonary arteriovenous fistula
- Cerebral abscess
- Pulmonary artery aneurysm
- Bullet embolus
- Erosion
- Hemoptysis
- Pneumonitis
- Abscess