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## Hemoptysis from Retained Intrapulmonary Foreign Body in Pediatric Trauma

Shawn Travis Greathouse MD Lehigh Valley Health Network, Shawn\_T.Greathouse@lvhn.org

William D. Hardin MD, FACS, FAAP Lehigh Valley Health Network, William. Hardin@lvhn.org

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# Hemoptysis from Retained Intrapulmonary Foreign Body in Pediatric Trauma

S. Travis Greathouse, MD, William Hardin, Jr, MD • LEHIGH VALLEY HEALTH NETWORK, ALLENTOWN, PENNSYLVANIA

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.

### 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

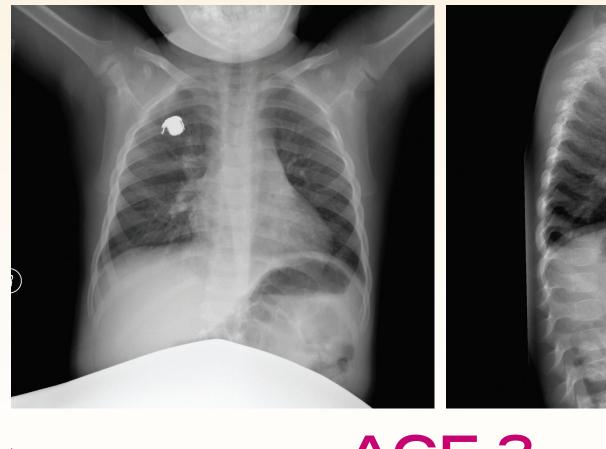
## ED VISIT #1

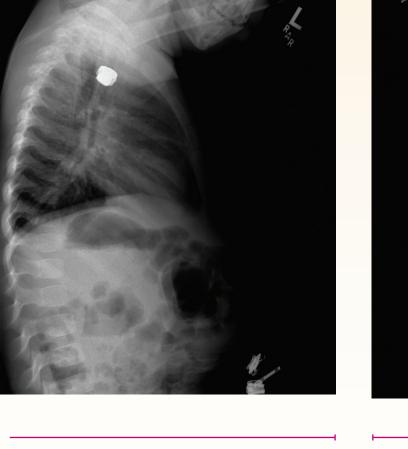
- PMH: GSW to chest / R hand at age 1
- PSH: Surgical repair R hand injury
- SH: Recently moved out of state, no sick contacts, no TOB exposure
- FH: Mother has asthma; no other pulmonary disease
- All: NKDA Meds: none
- ROS otherwise negative
- PPD placed
- Discharge home with Zithromax
- Follow-up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

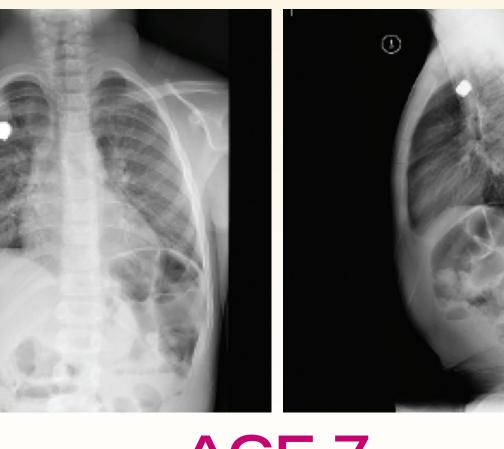
## ED VISIT #2

- 97.3° 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
- Admitted to pediatric service with pulmonary consult

## **CHEST X-RAY**

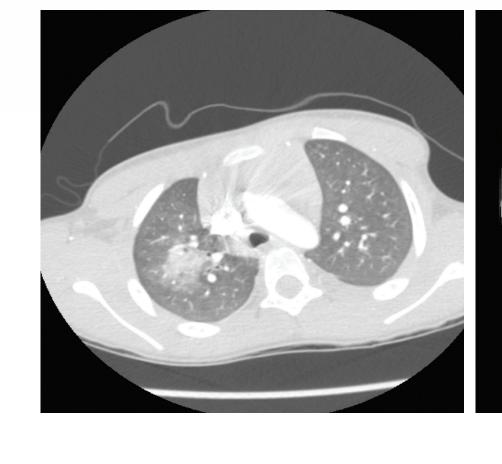


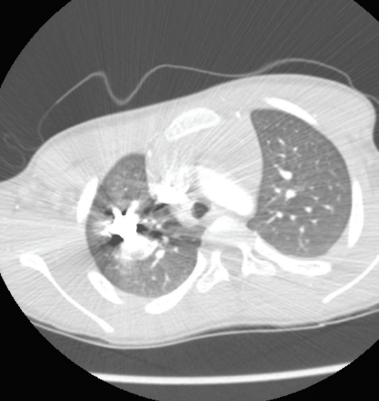


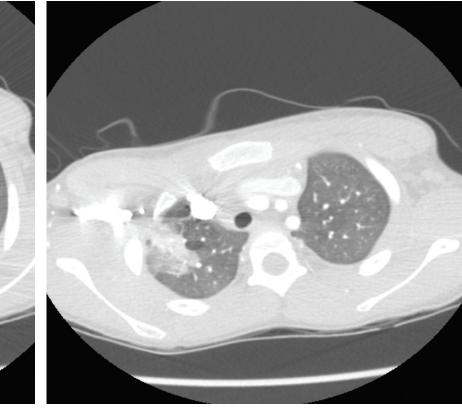


-AGE 7

## PREOPERATIVE CT







## CHEST CT

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

# Cat. No. 09-016

## GROSS PATHOLOGY

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

## CONSULT

PULMONARY

- No h/o bleeding diathesis, foreign body aspiration
- PPD non-reactive,TB gold negative
- CRP/ESR negative
- Sputum C&S negative
- Autoimmune Ab negative

## SURGERY

- Double-lumen ETT
- Right posterolateral thoracotomy
- Adhesions noted and taken down at apex
- Palpable mass RUL with surrounding fibrosis/calcifications
- Wedge resection of apical segment with 35 mm stapler
- 20 Fr chest tube placed

## POST-OP

- POD#2: CT to waterseal
- POD#3: CT removed
- POD#4: Pt D/C'd home
- 1 week after discharge: no SOB, no additional hemoptysis, cleared for return to school

## THORACIC TRAUMA

- As few as 2% of blunt and 6% of penetrating thoracic trauma require pulmonary parenchymal resection
- 20% to 31% of patients requiring pulmonary parenchymal procedure at time of thoracotomy
- "Minor" simple suture, tractotomy, wedge resection
- "Major" lobectomy, pneumonectomy

# DELAYED SEQUELAE OF THORACIC TRAUMA

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

## CASE REPORTS IN ADULTS

- Taylor et al. Ann Surg. 2006 Intermittent hemoptysis attributed to retained surgical sponge after 43 years
- Otten et al. Ned Tijdschr Geneeskd. 1991 Hemoptysis 13 and 22 years after thoractomoy—retained pleural drain
- Kelley et al. Trauma. 1976

  Bronchial occlusion and post-obstructive lung infection without hemoptysis 7 years after injury
- Kovnat et al. Am Rev Respir Dis. 1974 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 expectoration of bullet
- Bilello et al. Ann Thorac Surg. 2001

  Life-threatening hemoptysis 17 years after GSW to chest

  Self-limited hemoptysis at 4 and 12 years post injury

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