15 Year-Old Girl With Ptosis

Case Conference 5/9/03
History of Present Illness

• A 15 year-old girl was admitted to the hospital with chest pain, shortness of breath and hemoptysis.
• She was found to have pneumothorax on the left side.
• A chest CT scan was obtained
• Chest tube was placed when the patient was admitted to the floor
• On Hospital day #2 the allergy/immunology fellow notes ptosis of the left eyelid.
HPI (cont.)

- No history of prior lid droop
- No diplopia, No visual changes, No ocular pain or tenderness. No history of trauma. No weakness or numbness reported.
- Patient describes mild holocephalic headache over past few days.
Past Medical History

• Granulomatous disease of lungs
  – Unknown etiology
  – Followed for >2 years
  – Multiple lung nodules
  – Recently tapered off steroids
Social History/ Family History

- Lives at home
- Fair school performance
- Denies use of tobacco, alcohol, drugs.
- Nothing significant
Physical Examination

• General
  – VSS, Lying in bed in no distress, chest tube on L.
  – No axilla or supraclavicular nodes/masses palpated
• MS; awake alert and interactive.
• Cranial Nerves
  – VA 20/20 OU, conjugate gaze in mid-position
  – Eye exam on next slide
  – Remainder normal
• Motor, Sensory, Reflexes, Gait
  – Normal
• Right pupil 4mm, Left pupil 3mm (dark)
• Both pupils briskly and equally reactive
• Fundoscopy shows sharp disc margins
• Right eyelid at limbus of iris
• Left eyelid midway between limbus and pupil border
• No difference in moisture noted on face bilaterally.
Studies Performed

- Chemistry, CBC, Coagulation profile, LFTs and Urinalysis normal.
- Chest CT scan
- Noncontrast Head CT scan
- MRI scan +/- contrast of brain
- Cocaine 10% solution eye drops
- Hydroxyamphetamine Bromide eye drops
Chest CT scan

• Reviewed with chest radiologist
  – No evidence of apical nodule
  – No mass compressing sympathetic structures
Hospital Course, Day 3

• With instillation on 2 drops 10% cocaine
  – OD at rest in dark 6mm
  – OS at rest in dark 3mm
• CT scan of brain unremarkable
• MRI of Brian unremarkable
• Hydroxyamphetamine bromide ordered
Hospital Course, Day 5

- Chest tube withdrawn
- Ptosis of left eyelid not noted
- Pupils symmetrical in size at 5mm
- Chest tube removed
- Patient discharged from hospital
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Mechanism of Horner Syndrome

- First case of iatrogenic Horner syndrome from chest tube placement reported by Fleishman et al (J Clin Neuroophthalmol, 1983)
- To date six additional cases reported
  - In 5 of 7 cases Horner syndrome resolved at time of discharge or last follow-up.
  - In 2 cases Horner syndrome failed to resolve
- Mechanism
  - Compression of first thoracic (aka stellate) ganglion
To Superior Tarsal (Müller's) mm (smooth muscle of eyelid)

DILATOR MUSCLE OF PUPIL

LONG CILIARY NERVE

VERTEBRAL ARTERY

CERVICOThoracic (STELLATE) GANGLION

INTERNAL CAROTID ARTERY

SUPERIOR CERVICAL GANGLION

HYPOThALAMUS

PONS

T1 T2
(CILIospinal CENTER OF BUDGE)

THORACIC SYMPAThETIC TRUNK

APICAL PLEURA OF RT LUNG
Iatrogenic Disease

- “Induced in a patient by a physician's activity, manner, or therapy. Used especially to pertain to a complication of treatment.”
- Common, 3.7% of hospitalizations in the Harvard Medical Practice Study
Ethics

• To communicate with patients about the serious side effects of treatment
• To report all adverse effects of treatment immediately
Most iatrogenic events are not the result of negligence

– Occur regardless of the proper clinical indications, with appropriate communication

– Liability should never be imposed in the setting treatment
  • When the clinician establishes and documents the reasonable indications
  • Secures the consent of the patient
  • Appropriately monitors for both therapeutic effectiveness and the occurrence of adverse reactions
Case Resolution

- Horner syndrome persisted after chest tube retraction
  - Decreased in severity over time