Boerhaave’s Syndrome

Last Supper for the Epicure

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Case Presentation

- 66 yo thin male was BIBEMS
- “Coughing fit” & emesis
- Followed by severe chest pain
- Associated SOB
On Physical Exam

- AF  BP 81/41  HR 72  PO$_2$ 91%
- Mild distress (pain), AAO x 3
- Chest: RR, no crepitus
- Lungs: decreased BS @ left base
- Abd: normal
Case Presentation

- **PMHx:** CAD, Reynaud’s, OA, emphysema, osteoporosis
- **SocHx:** pipe smoker, no ETOH
- **All labs & blood gas normal**
ED Management

- Left chest tube

Time to OR:

- Immediate drainage of
  - 1100 ml brown thick fluid
  - Food particles (oatmeal, toast ...)

- Antibiotics given

- NPO, IVF and Foley

~ 9 hrs
Operative Procedure

- Left lateral thoracotomy at 5th ICS
- Esophageal perforation (2 - 3 cm long) above the GE junction
- Two-layer esophageal repair with pericardial flap
- Left and right thoracostomy drains
Post - Op Saga ....

- POD #1: Septic Shock
- POD #8: NSTEMI & A-fib
- POD #10: Failed extubation
- POD #12: Empyema drained
- POD #14: Tracheostomy
- POD #17: Failed esophagogram
Post-Op Saga ....

- POD #39: Discharged to rehab
Historical Perspective

- 1723 - Dr. Herman Boerhaave
- Baron Jan van Wassenaer, Admiral of the Dutch Fleet
- Self-induced emesis after gluttonous meal
- Died 18 hrs later
- Autopsy!

Patton, AS. *Harvard Medicine* 2005
Glutton’s Savior

- Dr. Norman Barrett
- 1947 - 1st successful repair of Boerhaave’s syndrome
- 2nd successful repair by Olsen & Clagett

Etiology

Location by Cause

Presentation

- Middle-aged man with history of alcoholism and/or excessive food
- Male : Female ratio – 2:1 to 5:1
- Mackler’s Triad
  - Vomiting, lower chest pain,
  - subcutaneous emphysema
- Sepsis & shock

Management

- Thoracostomy drainage
- Pleural fluid analysis
- Contrast esophagogram
- Flexible esophagoscopy
SIGN AND SYMPTOMS OF ESOPHAGEAL PERFORATION

Water-Soluble or Barium Contrast Esophagography, Chest X-Ray, Computed Tomography

Contained Perforation

Broad-Spectrum Antibiotics Parenteral Nutrition

Uncontained Perforation

No Improvement < 24 hr

Cervical

DRAINAGE

Thoracic

Evaluation of Perforation

Surgical Repair Tolerable

PRIMARY REPAIR

Surgical Repair Intolerable

CONTROLLED FISTULA

EXCLUSION AND DIVERSION

Malignancy

RESECTION

Conservative Management

IS

Operative Intervention!
Treatment Approach

 Cause
 Location
 Severity
 Delay

 Prevent further contamination
 Eliminate infection
 Restore GI continuity
 Nutritional support
Primary Repair

Source: Sugarbaker DJ, Waters RL, Ries R. Primary repair.
How to Reinforce the Repair?

- Thickened pleura
- Intercostal muscle flap
- Stomach flap
- Elevated diaphragmatic pedicle
- Pericardial pedicle

Signs and Symptoms of Esophageal Perforation

Water-Soluble or Barium Contrast Esophagography, Chest X-Ray, Computed Tomography

- Contained Perforation:
  - Broad-Spectrum Antibiotics Parenteral Nutrition

- Uncontained Perforation:
  - No Improvement <24 hr
    - Cervical: Drainage
    - Thoracic: Evaluation of Perforation
    - Abdominal

  - Surgical Repair Intolerable
    - Controlled Fistula
    - Exclusion and Diversion

  - Malignancy
    - Resection
Post-Op Management

- Manage inflammatory insult
- Parenteral nutrition
- Esophagogram within 5 - 7 days
- Flexible endoscopy 4 - 6 months
Complications

- Sepsis & shock
- Mediastinitis
- Pneumonia & empyema
- Prolonged mechanical ventilation
- Persistent leak (30%)

Not All Created Equal

Mortality by Operation

Mortality

Evidence

- Primary repair regardless of time interval
- Pre-operative respiratory failure greatest predictor of mortality
- Esophageal stent placement
- Selective non-operative management

Remember This . . .

- Early diagnosis improves OUTCOME
- Boerhaave’s prediction
- Primary repair
- Hybrid surgical intervention
- 24-hr principle not a hard fast rule
Questions?