Problem Based Learning Discussion: Full Stomach

Prepared by: Brenda A. Bucklin, M.D. Professor of Anesthesiology University of Colorado Health Sciences Center
Case 1

- 23 year old male; MVA 4 hours ago
- Femur fracture
- Facial lacerations
- Transferred to OR after abdominal CT scan
Is the patient a “full stomach”?
Why?

- Ingestion of food or liquids before injury
- Swallowed blood from oral or nasal injuries
- Delayed gastric emptying from trauma stress
- Administration of liquid contrast for CT
Risk Factors for Aspiration

- Trauma
- <6-8hr fast for solids
- Intra-abdominal pathology
  - Obstruction, inflammation
  - Gastric paresis (drugs, diabetes, uremia, infection)
  - Esophageal disease (reflux, motility disorders)
- Pregnancy
- Obesity
What Is Acid Aspiration Syndrome?

- First described by Mendelsohn in 1945
- 66 cases during anesthesia for labor & delivery
- In rabbits, small volumes + low pH → fatal pulmonary edema
How do we prevent it?
Aspiration Prevention

- Drugs
- Rapid-sequence induction or awake intubation
- Cuffed endotracheal tube
- Cooperative patient on emergence
**Drugs: H₂ Blockers**

**Pros**
- Reduce gastric acid secretion
- ↑ Gastric pH
- ↓ Gastric volume

**Cons**
- Onset
Ranitidine vs. Cimetidine

Ranitidine

- Faster onset
- Better protection
Antacids: Sodium Citrate

**Pros**
- Non-particulate
- Rapidly ↑ gastric fluid pH

**Cons**
- ↑ Gastric volume
- Potential for emesis
- Variable duration
Gastrokinetic Agent: Metoclopramide

**Pros**
- Stimulates gastric emptying
- Decreased gastric volume
- Increased LES tone

**Cons**
- No change in pH

**Metoclopramide + H₂ blocker further reduces potential risk of aspiration pneumonitis**
What is a rapid-sequence induction?

- Preoxygenation
- Induction of anesthesia without ventilation
- Sellick maneuver after loss of consciousness until confirmation of endotracheal tube with cuff inflation
Why preoxygenate?

- **Largest** possible oxygen reserve during emergency airway management
- Helps to mitigate hypoxia resulting from prolonged intubation attempts
What is the Sellick Maneuver?

- Prevents passage of air and passive regurgitation
- Elevation of patient’s chin (without spine displacement)
- Cricoid cartilage pushed posteriorly to close esophagus
Sellick Maneuver
What medications are used for rapid-sequence? 

- **Induction agents:** (propofol, etomidate, ketamine, thiopental)
- **Succinylcholine, rocuronium**