When Pain Relief Causes Pain: Morphine-Induced Sphincter of Oddi Spasm During Preterm Labor

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Background

Physiologic effect:

- Morphine increases **sphincter of Oddi (SO) basal pressure and contractility** and raises **common bile duct pressure** (1).

Clinical Manifestation:

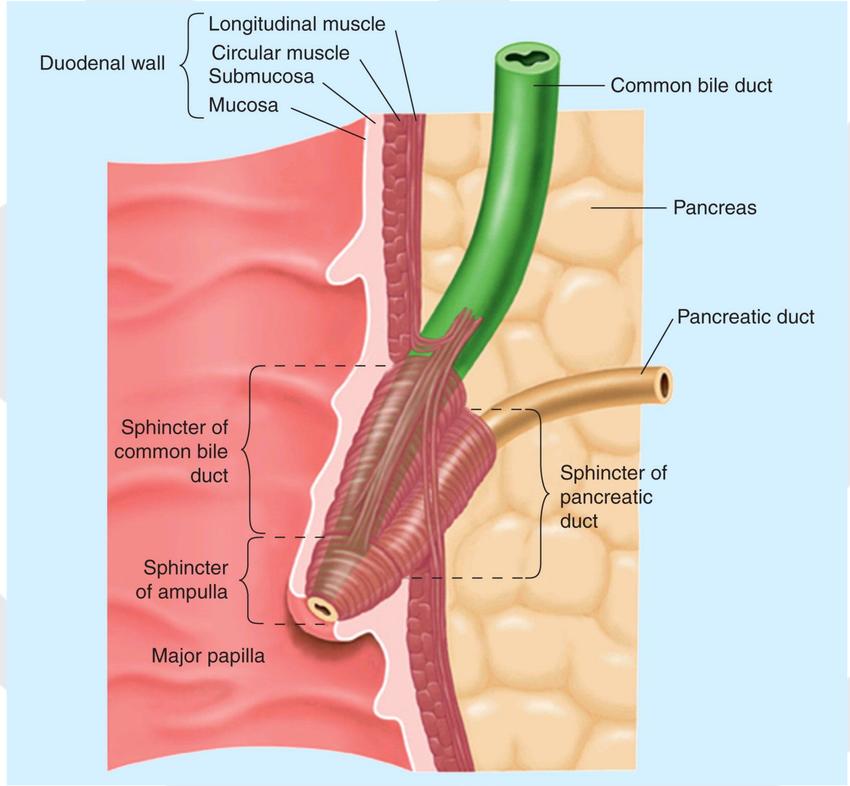
- This effect can trigger **dose-dependent biliary colic–like pain and nausea/vomiting**, which may mimic **acute abdominal emergencies** (2-4).

Diagnostic Challenge in Pregnancy:

- Severe abdominal pain during **labor or late pregnancy** include a wide differential, both obstetric and non-obstetric, complicating diagnosis.

Clinical Implications:

- Evaluation and management must consider competing etiologies for effective analgesia while maintaining maternal-fetal safety



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Case: *29-year-old G5P3013 at 34w3d with history of Roux-en-Y gastric bypass and cholecystectomy admitted after ground-level fall with preterm contractions*

11:15am — **Initial Management**

Monitoring for concealed **placental abruption;** patient received **IM morphine 10 mg** for early labor pain.

11:45am-12:30pm — **Acute Symptom Onset**

Developed sudden **severe epigastric pain** with nausea, vomiting, chills, flushing, and distress.

1:09pm — **Diagnosis & Treatment**

Morphine-induced sphincter of Oddi spasm considered; **IV naloxone 0.4 mg ×3 resulted in rapid pain resolution** with stable maternal and fetal status.

***2 days later* at 10:12pm** — **Epidural Attempt & Delivery**

Standard epidural attempted. During procedure, urge to push and patient **delivered precipitously. No medications given.** No postpartum opioids.

Vitals and Exam

Vitals stable; abdomen soft with **epigastric tenderness**; **fetal heart tracing reassuring** and cervix unchanged at **1.5 cm**.

Workup

Labs:

- Hgb 9.3-10.3 and fibrinogen 270s-340s
- Liver panel, lipase, lactate, INR, rest of CBC, VBG— within normal limits

EKG: normal sinus rhythm

OB US: Growth ~34 weeks. No obvious abnormality concerning for abruption. Normal amniotic fluid.

Differentials

Obstetric: Placental abruption, uterine rupture, preeclampsia/HELLP

Surgical: Post-Roux-en-Y gastric bypass complications, appendicitis

Medical: Pancreatitis, gastritis, medication-induced sphincter of Oddi spasm

Morphine-induced sphincter of Oddi dysfunction (SOD): *Teaching Points*

Clinical Recognition

- Rare complication of **morphine administration**
- Presents with **acute biliary-type pain**, potentially mimicking obstetric or surgical emergencies

Diagnosis

- **Temporal relationship** between morphine administration and symptom onset ~20 min post administration (2)
- **Exclusion of other causes** (e.g. placental abruption, uterine rupture, surgical abdomen)

Risk Factors

- **Prior cholecystectomy** reported as a risk factor in several studies and case report (5-7)

Management

- **Naloxone** may relieve symptoms (2-3)
  - Use **minimum effective dose** to avoid opioid withdrawal and loss of labor analgesia
- **FDA** reports **possible risk with neuraxial morphine** administration**. No clinical cases reported. (8)**

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