Bouveret Syndrome: A rare case of gallstone ileus causing gastric outlet obstruction

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Introduction

- Gallstone ileus occurs in 0.3-4% of cholelithiasis cases.[1] Bouveret syndrome (BS) is a very rare form of gallstone ileus that accounts for 1-3% of all gallstone ileus cases.[2]
- Bouveret syndrome occurs when a large stone migrates in a retrograde fashion via a bilioenteric fistula resulting in a gastric outlet obstruction (GOO).[1-4]
- The cholecystoduodenal fistula is most common but fistuilzation can occur between the gallbladder and colon as well as the gallbladder and stomach.[4]
- Approximately 315 cases have been reported in the literature.[5]
- Risk factors for BS include: female gender, older age, and history of cholelithiasis.[1-4]
- Symptoms are often non-specific and may include nausea, vomiting, and abdominal pain.[3,5,6]
- Abdominal CT with contrast is the gold standard diagnostic modality.[6]
- Reigler's triad (SBO, pneumobilia, and ectopic gallstone) is only observed in about 33% of cases.[3,7]

Case Description

History of Present Illness

- An 85-year-old male presented to the ED with a one-month history of intermittent ***generalized abdominal pain*** that had been accompanied by several episodes of dark brown emesis in the hours prior
- The patient endorsed the pain primarily occurred in the left upper quadrant but that had radiated to the mid-epigastrium
- He underwent TKR 6 weeks prior

Past Medical/Surgical History

- Coronary artery disease
- Paroxysmal SVT
- Diverticulitis
- Nephrolithiasis
- Osteoarthritis
- Total knee replacement

Medications:

- Meloxicam 25 mg PO daily
- Aspirin 325 mg PO daily
- Metoprolol XL 25 mg PO daily

Vital Signs:

- **T:** 99.2°F **HR:** 73 bpm **BP:** 154/73 mmHg

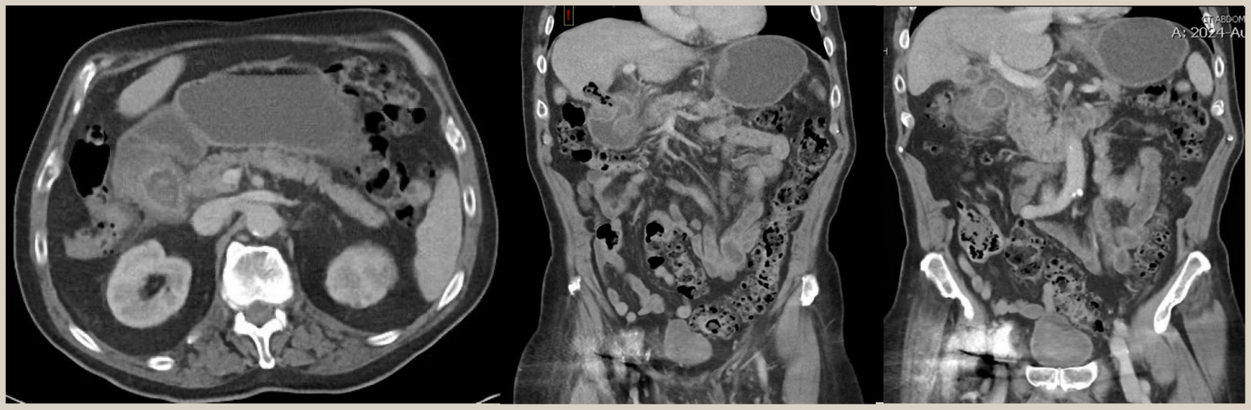
Physical Examination:

- **Gen**: alert, NAD, non-icteric
- **Abd**: soft, ND, mildly TTP in MEG

Laboratory Results:

WBC: 16.11 x 1000/µL
AST: 40 U/L **Tbili**: 0.9 mg/dL
ALT 14 U/L **Dbili**: 0.2 mg/dL
Alk Phos: 198 U/L

Computed Tomography Images



Gallbladder is filled with air. Gastric outlet obstruction secondary to a 1.5cm gallstone within the proximal duodenum with associated cholecystoduodenal fistula. Significant inflammatory changes adjacent to the gallbladder.

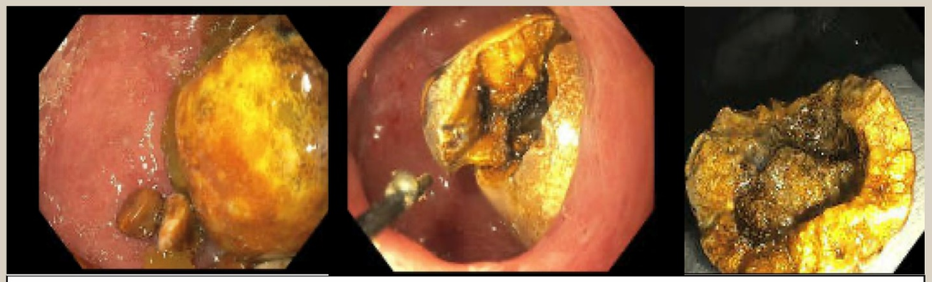
Discussion

- BS is an extremely rare complication of cholelithiasis most often observed in elderly women.[1-4]
- It is believed to occur secondary to chronic inflammation which leads to impaired blood supply and pressure necrosis from a large stone.[4]
- Due to its non-specific symptoms and rarity, the syndrome is often delayed in diagnosis which can lead to septic shock, perforation, or death.[3,5,6]
- The current standard of care is endoscopic intervention although the success of this is highly variable.[1-7]
- While the endoscopic approach is preferred, one flaw is the potential for stone migration which could result in a distal obstruction.[3]
- Surgical approaches can be considered if endoscopic intervention is unsuccessful.[2-7]
- There is no consensus as to surgical approach in the available literature
- Mortality rates have been described as high as 12% but are often attributed to comorbid conditions.[8]

Hospital Course

Initial Management	NPO, admitted to surgical ward
Supportive Care	NG tube for decompression, IV pantoprazole for presumed PUD
Antibiotics	IV ceftriaxone and metronidazole
Consultation	Advanced endoscopy consulted for endoscopic stone retrieval
Postoperative care	• Transient hypotension → ICU transfer, central line placement, vasopressors • Atrial fibrillation → amiodarone drip
Recovery	Transferred to the floor on hospital day #8 with normalized labs
Discharge	Discharged to skilled nursing facility on hospital day #13

ERCP Images



- Two >30 mm gallstones were found in the duodenum
- Electrohydraulic lithotripter was used to destroy the stones
- Small fragments were removed via Roth net extraction
- A clear fistula was not observed

Conclusion

Bouveret syndrome is a rare but serious cause of GOO, requiring prompt diagnosis and management. Early recognition through imaging and endoscopic or surgical intervention is key to improving patient outcomes.

References

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