Case report

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EXPLORING BILIARY ILEUS: A RARE AND COMPLEX CLINICAL CASE

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Biliary ileus is a rare complication associated with cholelithiasis. Although it accounts for less than 4% of small bowel obstructions in patients under 65 years of age, its prevalence rises to 25% in patients over 65 years of age. Physicians are faced with the decision of whether to opt for immediate closure of a single- or two-stage cholecystoenteric fistula or to wait for natural closure.

A 62-year-old female patient presented to the surgical clinic with severe abdominal pain, predominantly on the right side, and a sensation of bloating. She reported symptoms of constipation, nausea, and vomiting. An emergency exploratory laparotomy was scheduled. During the surgical procedure, careful exploration revealed significant dilation of the proximal part of the intestine, and a gallstone was found in the jejunum. The gallstone was successfully removed, followed by closure of the enterotomy site.

This report highlights a condition that is rarely seen in practice. In older patients presenting with clinical manifestations of bowel obstruction and chronic issues with the gallbladder, this rare disease should be considered, particularly in women and elderly patients.

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Key words: *biliary ileus, Bouveret's syndrome, enterotomy, gallstone, vomiting*

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Introduction

Biliary ileus is an uncommon complication associated with cholelithiasis, characterized by mechanical intestinal obstruction caused by one or more gallstones within the gastrointestinal tract, often via a cholecystoenteric fistula (1–3). While gallstones can potentially obstruct any part of the gastrointestinal tract, the distal ileum is the most frequently affected site (1). Biliary ileus accounts for approximately 0.3–0.5% of complications arising from gallbladder diseases, translating to approximately 30–35 cases per million hospitalizations (1, 4, 5). The incidence of this condition as a cause of small bowel obstruction is less than 4% in patients under 65 years of age, but increases substantially to 25% in patients aged 65 and older (1). Bouveret's syndrome, a subtype of biliary ileus characterized by an impacted stone in the duodenum obstructing the gastric outlet, is observed in only 3% of cases (1).

Clinical manifestations of biliary ileus vary depending on the site of obstruction. Intestinal obstruction typically presents with symptoms such as abdominal pain, bloating, vomiting, reduced peristalsis, and constipation (1, 6). Additionally, patients may exhibit jaundice (1).

Diagnosis relies on a combination of basic laboratory and biochemical analyses, as well as additional diagnostic techniques. Abdominal X-rays in both supine and upright positions may reveal pneumobilia and distension of the intestinal loops (1).

In some cases, patients are presented with treatment options aimed at preemptively averting the emergence of symptoms and complications. Conversely, others are advised to adopt a watch-and-wait strategy, initiating active treatment only once the stones provoke symptomatic episodes (7). Selecting the most suitable surgical approach can pose challenges, especially when the patient's overall health is compromised. Physicians must navigate the decision between immediate one-stage or two-stage closure of the cholecystointestinal fistula or opting for a wait-

and-observe strategy, allowing for natural closure to occur (2).

Case Presentation

In our case, an emergency exploratory laparotomy was scheduled for a 62-year-old female patient who presented at the surgical clinic with severe abdominal pain, primarily localized on the right side, and a sensation of abdominal distension. The patient stated symptoms of constipation, nausea, and vomiting. Additionally, she reported being aware of gallbladder calculosis for the past seven years and occasionally experienced pain in the right side of the abdomen, which decreased with the use of analgesics.

Upon clinical examination, the abdomen exhibited distension in line with the chest, with tenderness and pain noted upon palpation in the right paraumbilical region. Laboratory blood tests revealed mild leukocytosis (13 x 109/L) and slightly elevated C-reactive protein levels (18 mg/L), while other blood parameters remained within the normal reference range. This intervention was considered essential for diagnostic and therapeutic purposes, given the findings during clinical examination and the presence of a positive history of chronic gallbladder calculosis with frequent exacerbations.

During the surgical procedure, after thorough exploration, significant dilation of the proximal intestine was observed. A biliodigestive fistula (Figure 1) and the presence of a gallstone in the jejunum (Figure 2) were identified. The gallstone was carefully manipulated distally using digital maneuvers (Figure 3), necessitating the creation of an enterotomy (Figure 3) to facilitate the extraction of a large biliary stone from the intestine. The gallstone, measuring approximately 3 cm in diameter, was successfully removed (Figure 4), and an enterotomy suture was meticulously performed. The patient was subsequently discharged from the hospital in full recovery, and her follow-up visits at the surgical clinic proceeded without any complications.

Figure 1. Identified part of the fistula

Figure 2. A gallstone was identified in the intestine

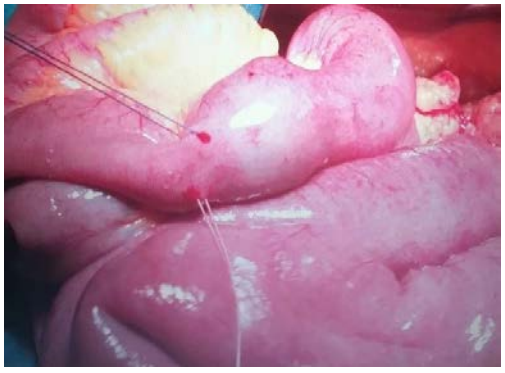

Figure 3. Support sutures are placed at the enterotomy site and the biliary stone in the lumen of the intestine

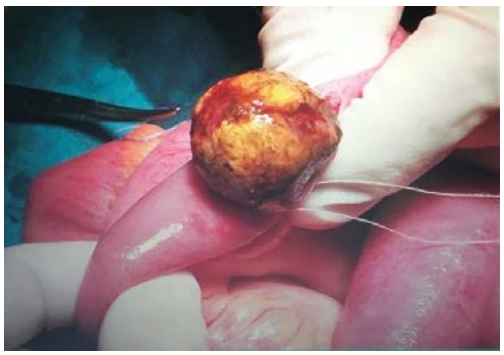

Figure 4. Gallstone after removal followed by measuring the size

Discussion

Cholecystoduodenal fistula typically arises from gallbladder inflammation (8). Surgical intervention remains the established standard for treating biliary ileus, with the primary objective being the resolution of intestinal obstruction through enterolithotomy (1, 4, 9). The key determinant in selecting the appropriate surgical approach is the duration of intestinal obstruction (1). Following an enterolithotomy procedure, the recurrence rate is estimated to be around 5% (1, 2). Potential sites of obstruction encompass the ileum (60%), jejunum (15%), stomach (15%), and colon (5%) (3). This condition predominantly affects women, with a prevalence ranging from 72% to 90%, typically occurring between the ages of 60 and 84 (10).

The case under discussion represents a rare cause of intestinal obstruction, mirroring similar clinical manifestations as reported by Mulita et al. (11), who presented a female patient with comparable symptoms in their clinical report. Additionally, the case described by Souiki et al. (12) involved an elderly woman, paralleling the circumstances in our case. In a review of the literature, right-sided abdominal pain and constipation emerge as characteristic clinical indicators, aligning with the clinical findings observed in the presented patient (13, 14). As a rare complication stemming from cholecystolithiasis, the clinical cases of biliary ileus discussed in this context reveal consistent symptoms of nausea and vomiting, which complement the clinical presentation of the patient in our case (15, 16).

When a patient is diagnosed with ileus caused by a gallstone, it becomes crucial to conduct a comprehensive examination of the entire biliary tree to pinpoint the gallstone's exit point (17).

The clinical case presented by Dai et al. (18) involving a patient with biliary ileus required an exploratory laparotomy, revealing the presence of a gallbladder fistula with the duodenum and proximal intestinal dilatation (19), mirroring the intraoperative findings in our case. In the cohort study on biliary ileus by Koliakos et al. (3), the operative technique employed across all patients involved enterotomy and the removal of biliary calculi, aligning with the operative approach utilized in our case.

Enterolithotomy entails the extraction of stones through enterotomy without performing any additional procedures on the gallbladder or enterobiliary fistula (20). The primary objective is to alleviate intestinal obstruction without subjecting the patient to procedures that could prolong the operation duration or increase morbidity (20).

Dunphy et al. (21) documented a case in which a 5 x 2.5 cm gallstone was removed via enterotomy, partially corresponding to the size of the stone extracted in our case.

Smaller gallstones can spontaneously traverse the normal gastrointestinal tract and pass through the stool without obstruction (21). This condition accounts for 1–4% of all hospital admissions related to small bowel obstruction, with 25% of cases occurring in individuals over the age of 65 (21).

In a systematic literature review conducted by Farkas et al. (14), it was concluded that this disease is more prevalent in women, a finding that aligns with the presented patient's demographic.

A limitation of this clinical case is the absence of a radiological scan report. The lack of diagnostic information stems from the hospital's current inability to perform abdominal scans due to technical reasons, and the urgency of the situation did not allow for postponing the surgical intervention.

Considering procedures in one or two stages provides additional perspective on our study regarding the surgical treatment of biliary ileus. A one-stage procedure may be more efficient in terms of reducing time spent in the operating room and patient recovery, while a two-stage procedure may offer greater precision and safety in more complex cases. Patient-specific characteristics and surgeon experience should be taken into account when deciding on the optimal treatment approach. Analyzing the advantages and disadvantages of each procedure is important

for achieving the best possible outcome for the patient.

In this case, the advantages of a one-stage procedure may include efficiency in terms of reducing overall time spent in the operating room and facilitating faster patient recovery. Additionally, the simpler organization of the operation may reduce the risk of complications related to the postoperative period. On the other hand, the benefits of a two-stage procedure may encompass greater precision in stone removal and a reduced risk of intraoperative complications, especially in cases with complex anatomical changes or the presence of adhesions.

As for the drawbacks, a one-stage procedure may be challenging in cases with large stones or serious patient health complications, which could increase the risk of intraoperative issues. Conversely, a two-stage procedure may prolong the overall treatment and recovery time for the patient, requiring additional surgeries and visits to the surgical team, which could pose additional burdens on the patient and the healthcare system.

Insights from this rare case underscore the importance of swift diagnosis and precise treatment of biliary ileus, with a particular focus on elderly patients with chronic gallbladder issues. This case report provides valuable guidance for better understanding and effectively managing biliary ileus, emphasizing that a multidisciplinary team approach can be key to successful treatment. While this is a rare condition, this case serves as a reminder of the need for ongoing education of healthcare professionals and patients about the symptoms and risks of biliary ileus.

Conclusion

The choice of the surgical approach for treating biliary ileus should be determined based on the specific site of intestinal tract obstruction. This case underscores the rarity of the condition in clinical practice. In elderly patients exhibiting clinical signs of bowel obstruction alongside chronic gallbladder issues, clinicians should consider the possibility of this rare disease, particularly among female and older patients. In conclusion, the successful intervention in this case offers hope and inspiration for patients facing this rare complication, simultaneously highlighting the importance of early diagnosis and proper treatment.

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Prikaz slučaja

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ISTRAŽIVANJE BILIJARNOG ILEUSA: REDAK I KOMPLEKSAN KLINIČKI SLUČAJ

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Bilijarni ileus je retka komplikacija povezana sa holelitijazom. Premda čini manje od 4% opstrukcija tankog creva kod bolesnika koji imaju manje od 65 godina, prevalencija bilijarnog ileusa raste na 25% kod bolesnika koji imaju više od 65 godina. Lekari treba da odluče da li će odmah zatvoriti jednostepenu ili dvostepenu holecistointestinalnu fistulu ili će sačekati prirodno zatvaranje.

Šezdesetdvogodišnja bolesnica je došla na Kliniku za hirurgiju sa jakim bolovima u stomaku, uglavnom sa desne strane, i sa osećajem nadutosti. Kao simptome je navela zatvor, mučninu i povraćanje. Zakazana je hitna eksplorativna laparotomija. U toku hirurškog zahvata je pažljivim istraživanjem uočeno značajno proširenje proksimalnog dela creva i pronađen je kamen u žuči koji je dospeo u jejunum. Kamen je uspešno uklonjen, a potom je zatvoreno mesto enterotomije.

U ovom radu je prikazano stanje koje se retko sreće u praksi. Kod starijih bolesnika kod kojih postoje kliničke manifestacije opstrukcije creva i hronični problemi sa žučnom kesom treba razmotriti ovu retku bolest; to posebno važi za žene i starije bolesnike.

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***Ključne reči**: bilijarni ileus, sindrom Bouveretou enterotomija, kamen u žuči, povraćanje*