

Over Three Hundred Gallstones Removed Through Difficult Cholecystectomy – A Case Report

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Rezumat

Peste trei sute de calculi biliari îndepărtați printr-o colecistectomie dificilă – prezentare de caz

Context: Colelitiaza este o afecțiune gastrointestinală frecventă care împovărează semnificativ sistemele de sănătate din întreaga lume. Cauza principală a producerii de calculi biliari este hipersaturația de colesterol. Vârsta și sexul feminin sunt considerate factori de risc mai puternici decât alți factori, dar studii recente au prezentat asocieri puternice între calculii biliari cu colesterol și obezitate.

Prezentare de caz: Prezentăm cazul unui pacient de sex masculin în vârstă de 49 de ani cu dureri abdominale intense cu debut acut în cadranul superior drept. Examenul fizic, ecografia abdominală și analizele de laborator au confirmat diagnosticul de colecistită acută. Colecistectomia a fost efectuată și s-a constatat un perete îngroșat al vezicii biliare cu mucoasă gangrenoasă și peste 300 de calculi biliari cu dimensiuni cuprinse între 2 mm și 5 mm în interiorul acestuia.

Concluzii: Examenul clinic al pacientului, analizele de laborator și diagnosticele prin ecografie abdominală sunt instrumente de diagnostic de referință. Pilonul principal al tratamentului bolilor biliare simptomatice și asimptomatice este intervenția chirurgicală, colecistectomia.

Cuvinte cheie: calculi biliari multipli, colecistită acută, colecistectomie

Abstract

Background: Cholelithiasis is a common gastrointestinal condition that significantly burdens healthcare systems worldwide. The primary cause of gallstone production is cholesterol hypersaturation. Age and female sex are considered more potent risk factors than other factors, but recent studies presented strong associations between cholesterol gallstones and obesity.

Case report: We present a case of a 49-year-old male patient with acute onset intensive abdominal pain in the right upper quadrant. Physical examination, abdominal ultrasound, and laboratory analyses confirmed the diagnosis of

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acute cholecystitis. The cholecystectomy was done and was found a thickened gall bladder wall with gangrenous mucosa and over 300 gallstones sizes ranging from 2 mm to 5 mm inside it.

Conclusions: Clinical examination of the patient, laboratory analyses, and abdominal ultrasound diagnoses are gold-standard diagnostic tools. The mainstay of treatment of symptomatic and asymptomatic gallstone diseases is surgery, cholecystectomy.

Keywords: multiple gallstones, acute cholecystitis, cholecystectomy

Introduction

Cholelithiasis is a common gastrointestinal disease associated with a high risk of developing gallbladder cancer. Gallstones represent a significant burden for healthcare systems worldwide. Gallstones are a prevalent condition in the Western world, a global epidemic that remains the primary reason for surgical procedures and a significant contributor to health care costs. The established risk factors for gallstone development, such as being overweight and fertile after the age of forty, seem to be changing in favor of young, skinny female patients, male sex, and the complex relationships between genetics, environment, and metabolic syndrome (1).

Gallstones develop due to abnormal bile acid, bilirubin, and cholesterol metabolism. Gallstones fall into two main categories: pigment stones and cholesterol stones. The primary cause of gallstone production is cholesterol supersaturation. Pigment stones are formed due to hemolytic conditions (2). Gallstones may be asymptomatic in most cases or present with acute cholecystitis, chronic/recurrent cholecystitis, cholangitis, jaundice, and pancreatitis. Long-standing gallstones can lead to gallbladder cancer due to constant irritation of the mucosal layer. Having hundreds of gallstones is uncommon, and there are just a few reports of this condition in the literature (3,4). We report a case with a thickened and inflamed gallbladder with gangrenous mucosa and hundreds of gallstones inside it.

Case Report

We present a case of a forty-nine-year-old male patient admitted to the University Clinic of Digestive Surgery. He presented with acute-onset severe abdominal pain in the right upper quadrant that spread to his back. On physical examination, he was obese (BMI > 50), acutely asymptomatic with a normal blood pressure of 120/80 mmHg,

pulse rate of 82, respiratory rate of 28 breaths per minute, and afebrile. He had nonicteric sclera. He had significant right upper quadrant tenderness (positive Murphy sign). The first blood analyses showed leukocytosis and granulocytosis (WBC = $16.6 \times 10^9/L$, Granulocyte = 84.5%), elevated C-reactive protein (CRP = 29.2 mg/L), normal enzyme status, and normal levels of bilirubin. Abdominal ultrasound showed a thickened and distended gall bladder wall with multiple calculi inside it, and the diagnosis of acute cholecystitis was established. He was treated with antibiotics (Ciprofloxacin), painkillers, and pantoprazole. The next day, the patient was asymptomatic, but palpable findings persisted, leucocytes decreased, but the CRP level increased to 119 mg/L. The second antibiotic, Clindamycin, was added. On the third day, the CRP was elevated enormously (336,2 mg/L), and leukocytes again were elevated (WBC $13.9 \times 10^9/L$, Granulocyte = 85%). The second abdominal ultrasound was indicated, which showed a significantly thickened gallbladder wall (~ 1 cm) with multiple gallstones inside it and pericholecystic fluid collection. The patient was immediately counseled on surgical intervention, starting initially with laparoscopic cholecystectomy. After dissection of the visceral peritoneum, the Calot's triangle was not clearly and safely visible, so the operative intervention was converted to Right Kocher's incision. Cholecystectomy was done. The removed gallbladder had a thickened and inflamed wall, with initial gangrenous changes of the mucosa and over three hundred gallstones of sizes ranging from 2 mm to 5 mm inside it (*Fig. 1*). The patient quickly recovered from surgery and was discharged home on the 5th postoperative day.

Discussion

Gallstone disease is one of the most common public health problems worldwide. Age and female sex



Figure 1. The removed gallbladder with a thickened and inflamed wall, initial gangrenous changes of the mucosa, and over three hundred gallstones of sizes ranging from 2 mm to 5 mm inside it.

are considered more potent risk factors than other factors. Numerous studies have observed associations between cholesterol gallstones and many predisposing factors, especially obesity (5,6). Our patient was male with a BMI > 40. In our case, there was a high degree of inflammation and a mix of multiple stones counted, over 300, with sizes ranging from 2 mm to 5 mm. The number and size of the stones differ among patients. Cholelithiasis is a condition with the highest risk of gallbladder cancer development among the gallbladder carcinoma risk factors. The incidence of gallbladder cancer increases four to five times as a result of gallstones. The size of the gallstone and the duration of inflammation both raise the risk. The strongest correlation with cancer development is found in stones larger than 3 cm, particularly when they are symptomatic (7). In a previous study, size is considered the single most independent risk factor for carcinoma rather than the number of gallstones. However, the ongoing question of whether several gallstones are also a risk factor remains unanswered. Multiple gallstones may be found in patients with cancer of the gallbladder by coincidence, or there may be a degree of correlation that requires further investigation (4). The diagnosis is challenging since gallstone diseases may mimic various diseases. Clinical examination of the patient and laboratory analyses, complemented by imaging diagnostic techniques, can diagnose the patient. Abdominal ultrasound is considered the gold-standard diagnostic tool (8). Lifestyle modification to diminish

risk factors reduces the onset and severity of complications. The mainstay of treatment for symptomatic and asymptomatic gallstone diseases is surgery (9).

Conclusions

Cholelithiasis is a common disease, but patients with multiple gallstones (>100) are a rare case. Appropriate patient diagnosis is achieved through imaging diagnostics, laboratory testing, and clinical evaluation. Ultrasound of the abdomen is regarded as the most reliable diagnostic method. Lifestyle changes might decrease the severity of complications and reduce the risk of disease onset. Cholecystectomy is the mainstay of treatment for both symptomatic and asymptomatic cholelithiasis.

Conflict of Interest

The authors declare that they have no conflict of interest.

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Ethical Approval

Our institution does not require ethical approval to report individual cases or case series.

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