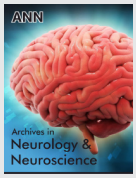

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Case Report

Urgent Open Cholecystectomy in a 7-Year-Old Male with Idiopathic Acute Calculous Cholecystitis: A Case Report

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Abstract

Introduction: Gallstone disease is rare in children, but its incidence is increasing due to widespread use of ultrasonography.

Symptoms and Clinical Findings: A 7-year-old male presented with postprandial colicky abdominal pain and vomiting. Physical examination showed deep tenderness in the right hypochondrium without guarding or Murphy's sign.

Management: Abdominal ultrasonography revealed a distended gallbladder with multiple small stones and a thickened wall, leading to a diagnosis of acute calculous cholecystitis. The patient underwent open cholecystectomy without complications and was discharged on postoperative day three.

Conclusion: Although rare in children, idiopathic acute calculous cholecystitis should be considered in pediatric patients with unexplained abdominal pain and vomiting.

Keywords: Pediatric gallstones; Acute calculous cholecystitis; Idiopathic cholelithiasis; Open cholecystectomy; Case report

Abbreviations: CBD: Common Bile Duct; IV: Intravenous; BMI: Body Mass Index; RBC: Red Blood Cells; WBC: White Blood Cells

Introduction

Gallstone disease in children is uncommon, comprising only 0.1–0.2% of cases, but its prevalence is increasing due to improved diagnostic imaging such as ultrasonography [1]. Pediatric patients often present with atypical symptoms, and in many cases, the etiology remains unclear [2]. This case report describes a 7-year-old male with idiopathic acute calculous cholecystitis who required urgent open cholecystectomy, highlighting the importance of considering this diagnosis in children with unexplained abdominal pain.

Case Presentation

A 7-year-old male (20 kg, normal BMI) presented with postprandial colicky umbilical abdominal pain, acute in onset, intermittent, and associated with vomiting and anorexia. There was no constipation, abdominal distention, jaundice, altered stool or urine color, pruritus, bleeding tendencies, or fever. His medical history was unremarkable, with no chronic illnesses, family history of gallstones, diabetes, or hemolytic disorders.

On examination, he was stable, with deep tenderness in the right hypochondrium but no guarding or Murphy's sign.

Routine laboratory tests, including a complete blood count, were within normal limits, showing normal red blood cell morphology, white blood cell count, platelets, and reticulocytes. Abdominal ultrasonography revealed a distended gallbladder containing three small stones (~5 mm) with a mildly thickened, edematous wall (5 mm), while the common bile duct was normal in caliber. No additional abnormalities were detected, and the findings confirmed acute calculous cholecystitis. No diagnostic challenges were encountered.

Following appropriate preoperative investigations, the patient underwent open cholecystectomy under general anesthesia. Intraoperatively, the gallbladder was partially distended with changes consistent with acute cholecystitis. The anatomy of Calot's triangle was normal, with no lymphadenopathy. The cystic duct and artery were identified, ligated, in and divided, and the gallbladder was successfully dissected from the liver and removed (figure 1). Postoperatively, the patient was managed with IV fluids, antibiotics, and analgesia. Bowel sounds returned within 12 hours, allowing diet initiation without nausea or vomiting (Figure 1).

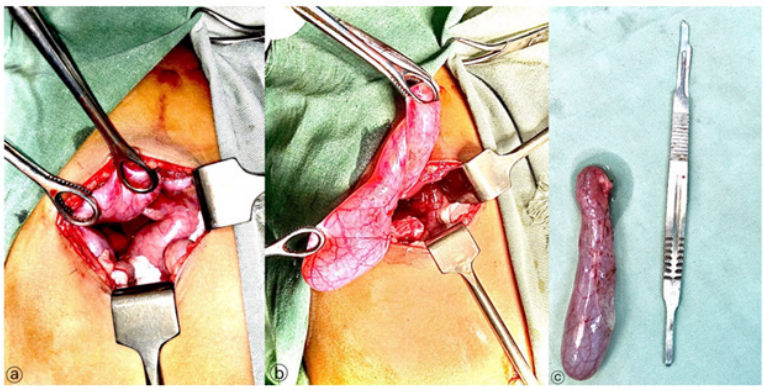

Figure 1: A; Intraoperative photograph showing the distended gallbladder, second part of duodenum retracted inferiorly and stomach retracted medially. B; gallbladder after dissection from the liver after ligation of the cystic artery and duct. C; Gallbladder after removal.

The postoperative course was uneventful, and the patient was discharged on postoperative day three in stable condition. He was referred to the pediatric department for further hematologic evaluation to rule out underlying etiologies. No complications or recurrence of symptoms were reported at follow-up (Table 1).

Table 1: Timeline of Events.

Day	Event
0	Onset of postprandial abdominal pain and vomiting
+7	Multiple hospital visits without diagnosis
+10	Ultrasound diagnosis of acute calculous cholecystitis
+11	Preoperative workup
+12	Open cholecystectomy performed
+15	Discharged uneventfully

Discussion

Gallstones in pediatric patients are rare, with the incidence in Sudan remaining largely unstudied [3]. Unlike adults, children often present with atypical or nonspecific symptoms, and Murphy's sign is not always positive [4]. Ultrasonography remains the gold standard for diagnosis [5].

Risk factors vary by age; neonates often develop gallstones due to prematurity or parenteral nutrition, whereas adolescents are more likely to have hemolytic disorders or obesity-related cholelithiasis [6]. In our patient, no identifiable risk factors were found, suggesting an idiopathic etiology, which accounts for 20–65% of pediatric cases [7].

Although laparoscopic cholecystectomy is the standard of care [8], open cholecystectomy remains a viable option, particularly in urgent settings. Conservative management may be attempted in

infants, but children aged 2–12 years are less likely to respond [9].

This case underscores the importance of considering cholelithiasis in pediatric patients presenting with unexplained abdominal pain.

Conclusion

Idiopathic acute calculous cholecystitis is rare in children but should be considered in pediatric patients with unexplained abdominal pain and vomiting. Early diagnosis and surgical intervention can lead to excellent outcomes.

Patient Perspective

The patient's family expressed relief after the procedure, noting a complete resolution of symptoms.

Ethical Considerations

Written informed consent was obtained from the patient's guardian for participation and publication of this case report, including the use of relevant clinical details and images. Ethical approval for this study was obtained from the Omdurman Islamic University, under approval number .

Competing Interests

The authors declare that they have no competing interests, whether financial, personal, academic, or ideological, that could influence the content of this case report.

Availability of Data and Material

All data supporting the findings of this case report are included in the manuscript. Additional data or materials can be provided upon reasonable request to the corresponding author.

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