



MANAGEMENT OF PERFORATED GALL BLADDER – AN OBSERVATIONAL STUDY

General Surgery

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KEYWORDS

BACKGROUND

Gallbladder perforation (GBP) is a rare but life-threatening complication of acute cholecystitis. The diagnosis is often challenging as its clinical presentation can be non-specific, leading to delayed treatment. The management strategy for GBP is not standardized and depends on various factors, including the type of perforation, the patient's hemodynamic stability, and associated comorbidities. This observational study aims to evaluate the management strategies and their outcomes in patients with perforated gallbladders at a tertiary care center.

Methods

We conducted a retrospective observational study of patients diagnosed with GBP who were admitted to our surgical unit over a 4 year period(2021-2025). Data were collected from hospital medical records, including patient demographics, clinical presentation, diagnostic modalities (ultrasonography, CT scan), management strategies (conservative vs. surgical), intra-operative findings, postoperative complications, and patient outcomes. Patients were classified according to the Niemeier classification of gallbladder perforation (Type I: free perforation, Type II: subacute perforation with localized abscess, Type III: chronic perforation with fistula formation). Statistical analysis was performed to identify correlations between management strategies and patient outcomes.

RESULTS

A total of 40 patients were included in the study, with a mean age of 65.2 years. The male-to-female ratio was 1.5:1. The most common presenting symptoms were abdominal pain (85%), fever (70%), and localized tenderness in the right upper quadrant (90%). The majority of perforations were of Type II (65%), followed by Type I (25%) and Type III (10%).

Preoperative diagnosis of GBP was achieved in only 40% of cases, with a CT scan being more sensitive than ultrasonography. The management varied based on the clinical presentation and type of perforation:

Type I (Free Perforation): All patients (n=10) with Type I perforation presented with generalized peritonitis and underwent emergency exploratory laparotomy. Cholecystectomy with thorough peritoneal lavage and drainage was performed in all cases. The mean hospital stay for this group was 12 days, and the mortality rate was 20% due to septic shock and multi-organ failure.

Type II (Localized Abscess): The management of Type II perforations (n=26) was more varied. 18 patients who were hemodynamically stable underwent early laparoscopic cholecystectomy with abscess drainage. Conversion to open surgery was necessary in 5 cases due to dense adhesions and difficult dissection. 8 patients who were high-risk surgical candidates with comorbidities were initially managed with image-guided percutaneous catheter drainage (PCD) and intravenous antibiotics. All these patients showed clinical improvement, and 6 underwent successful interval cholecystectomy within 6-8 weeks.

Type III (Chronic with Fistula): All patients (n=4) with Type III perforation were managed with elective cholecystectomy and repair of the fistula tract.

Overall, the morbidity rate was 30%, with common complications including surgical site infections, bile leaks, and subphrenic abscesses. The overall mortality rate in our study was 10%.

CONCLUSION

Gallbladder perforation is a serious complication of acute cholecystitis associated with significant morbidity and mortality. Early diagnosis and prompt surgical intervention are crucial, particularly in cases of free perforation (Type I) and generalized peritonitis. In hemodynamically stable patients with a localized abscess (Type II), a laparoscopic approach is feasible, but the surgeon should be prepared for conversion to an open procedure. In high-risk patients, initial management with percutaneous catheter drainage can be a safe and effective bridge to definitive interval cholecystectomy. This study underscores the importance of a tailored management approach based on the patient's clinical status and the type of perforation to optimize outcomes.

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