

## Laparoscopic management and clinical outcome of emphysematous cholecystitis.

**Background:** As opposed to acute, chronic, and acalculus cholecystitis, emphysematous cholecystitis (EC) is associated with significant morbidity and mortality. Only a few studies have specifically reviewed the operative management and clinical outcome of EC. This study documents the operative management and clinical outcome of EC at the Cleveland Clinic Foundation.

**Methods:** Between January 1996 and June 1999, 18 consecutive patients underwent cholecystectomy for emphysematous cholecystitis at our institution. All charts were reviewed retrospectively, and patients undergoing concurrent procedures were excluded. Mean values +/- standard deviation (SD) of the mean were calculated for patient demographics, preoperative white blood cell count (WBC), bilirubin, alkaline phosphatase, and length of hospital stay. Operative procedure (laparoscopic, converted, or open), preoperative imaging studies, operative time, ICU stay, morbidity, and mortality were reviewed.

**Results:** Patients presented with a mean age of 53.4 years (range, 18-80) and a male/female ratio of 3.5 (14/4). There were no differences between groups in terms of patient demographics. Mean WBC on admission was 14.2 K/mL (range, 5.4-19.7). Mean alkaline phosphatase and total bilirubin were 115 U/L (range, 45-428) and 1.4 mg/dl (range, 0.5-3.4), respectively. Thirteen patients (72%) were completed laparoscopically, two patients (11%) were converted to an open procedure, and three patients (17%) had open surgery. Overall mean length of hospital stay was 5 days (range, 1-18). Two patients from the open group ultimately died 1 year later due to progression of preexisting illness. One of these patients had congestive heart failure and chronic renal failure; the other had metastatic malignant melanoma. None of the patients died in the immediate perioperative period. There were five complications (27.8%). Two patients presented with bleeding secondary to heparin and coumadin therapy. One developed sepsis, and another developed leakage from the cystic duct stump, necessitating an endoscopic retrograde cholangiopancreatogram (ERCP) with stent decompression. The fifth complication, ileus, required readmission 3 days postoperatively, but the patient responded to conservative management. Complications were evenly distributed between the three groups. There were two complications in the laparoscopic group, two in the open group, and one in the conversion group. All other patients were alive at the time of this publication.

**Conclusions:** Using current techniques, patients with EC can be managed successfully utilizing laparoscopy. Morbidity and mortality appear to be slightly higher than published reports for acute, chronic, and acalculus cholecystitis. Conversion rates are comparable to patients with acute and chronic cholecystitis who undergo laparoscopic cholecystectomy. Based on these data, laparoscopic cholecystectomy should be considered the first-line treatment for patients with known or suspected EC.

Hazey, JW, Brody FJ, Rosenblatt, SM, Brodsky J, Malm J, Ponsky JL. Laproscopic management and clinical outcome of emphysematous chloecystitis. Surg Endosc 2001 Oct. 15(10):1217-20.