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Surgeons provide definitive care to patients with gallstone pancreatitis

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Abstract

BACKGROUND: The optimal management of patients with gallstone pancreatitis (GP) remains a matter of debate. There are wide variations in the use of diagnostic testing and same-stay cholecystectomy. We hypothesize that a general surgery service (SURG) will deliver more efficient, definitive care for patients with GP.

METHODS: A retrospective cohort study of consecutive GP patients in an urban hospital from 2006 to 2009. Differences between groups were assessed by the two-tailed Student *t* test for continuous variables and the Fisher exact test for ordinal data.

RESULTS: One hundred twenty-four patients with GP were admitted, 79 to medicine (MED) and 45 to surgery (SURG). In the MED group, 21 patients (27%) underwent same-stay cholecystectomy, and 7 patients (9%) returned with recurrent biliary pancreatitis. In the SURG group, 44 patients had definitive surgery, and none returned with recurrent disease ($P < .01$ and $.09$, respectively). The SURG group had fewer laboratory tests, antibiotics, and consultations.

CONCLUSIONS: For patients with GP, admission to surgery results in definitive treatment with same-stay cholecystectomy. This is a more efficient approach with fewer readmissions for the same disease process.

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Acute pancreatitis accounts for more than 200,000 hospital admissions each year in the United States, with gallstones causing up to 75% of cases.^{1,2} The initial management of the patient is supportive care including pain control and intravenous fluid hydration, with endoscopic retrograde cholangiopancreatography (ERCP) reserved for patients requiring urgent decompression in the setting of severe pancreatitis. Definitive treatment to prevent recurrent symptomatology is cholecystectomy, but the timing of the operation

is a matter of debate. Although supportive therapy can reasonably be provided by a wide array of clinicians, definitive therapy is arguably the distinct domain of surgeons.

Historically, surgical treatment of gallstone pancreatitis was delayed to allow the patient to recover from the acute physiological insult, with cholecystectomy performed as an outpatient within 2 weeks after an episode of acute pancreatitis. However, several studies have shown significant rates of recurrent pancreatitis as high as 60%.^{3–6} Therefore, recent practice guidelines advocate cholecystectomy during the same admission for patients with gallstone pancreatitis.^{7–9} As pressure understandably grows to deliver cost-effective care through accrediting care organizations or

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other incentives, defining an optimal approach becomes increasingly important.

Although acute pancreatitis constitutes an absolute indication for cholecystectomy, the timing remains controversial. For those patients with severe pancreatitis, it has been suggested that there is an increased complication rate during cholecystectomy, presumably because of inflammation in the hepatoduodenal ligament.¹⁰ Some would advocate for acute decompression in obstructed patients with ERCP and sphincterotomy, which acts as a bridge to outpatient cholecystectomy, or in selected patients as definitive treatment.¹¹

In our institution, these variable management approaches have resulted in unpredictable admission to either a medical or surgical service. There are no guidelines at our institution to direct the emergency department physicians to consult a specific service for a patient with gallstone pancreatitis. Therefore, admission to a particular service is independent of disease severity or patient characteristics. We hypothesize that a general surgery service delivers definitive care in a more efficient and cost-effective manner. We postulate that patients admitted to the surgical service would get a curative operation during the same admission and have fewer diagnostic tests performed during their hospital course.

Materials and methods

All adults over the age of 18 admitted to Denver Health Medical Center with gallstone pancreatitis between 2006 and 2009 were reviewed. Denver Health Medical Center is an academic, urban, tertiary care hospital that is part of an integrated care system, including outlying clinics and managed care programs. The diagnosis of gallstone pancreatitis was determined by symptoms (ie, nausea, emesis, and abdominal pain), laboratory evaluation (ie, elevated lipase and liver function), and imaging (ie, cholelithiasis on ultrasound or a computed tomography scan). Patients with prior cholecystectomy or acute alcohol ingestion and prisoners were excluded from the study.

Patients were admitted to either the medical service or the surgical service. The 2 types of medicine teams included an attending hospitalist and physician assistant on a non-teaching service or a traditional medicine inpatient ward team with an attending, upper-level resident, and intern. The surgical coverage at our hospital is comprised of 6 full-time trauma general surgeons with a complete complement of surgical house staff. These staff surgeons function in the acute care surgery model, managing all elective, urgent, and emergent cases that present to our level 1 hospital.

In addition to the admitting service, demographic variables were identified including age, sex, comorbidities, and the number of prescription medications. Diagnostic laboratories and radiographic studies were counted and normalized based on the length of stay. Outcome variables analyzed included the length of stay, laboratory data, specialty

service consultations, surgical or procedural intervention, readmission, and complications. Differences between groups were assessed by a two-tailed Student *t* test for continuous variables and a Fisher exact test for ordinal data. Data are expressed as mean \pm standard deviation, and a *P* value of .05 or less was considered significant. Study approval was obtained from the Colorado Multiple Institutional Review Board.

Results

Demographics

During the 4-year study period, 124 consecutive patients requiring hospitalization for gallstone pancreatitis were identified. Of these, 79 patients (64%) were admitted to the medicine service (MED group) and 45 patients (36%) to the surgery service (SURG group). The mean age in the MED group was 46.8 \pm 15.8 years (range 18–83 years), and 52% were men. The mean age in the SURG group was 38.2 \pm 16.0 years (range 20–80 years), and 22% were men (*P* < .01). Patients admitted to medicine tended to have more comorbidities although the difference did not reach statistical significance (MED group .56/pt vs SURG group .33/pt, *P* = .09). The number of outpatient prescription medications showed an average of 2.2 medications per patient in the MED group compared with 1.3 medications/patient in the SURG group (*P* = .02). The length of stay was longer in the MED group but not significantly different, with the MED group staying an average of 5.4 days and the SURG group 4.2 days (*P* = .17). A summary of the demographics is presented in Table 1.

Patient management

More laboratory tests were performed in the MED group compared with the SURG group with 6.1 versus 4.1 complete blood counts (*P* = .01) and 7.2 versus 4.3 chemistry panels (*P* < .01), respectively. The MED group had more

Table 1 Patient demographics

	MED n = 79 (64%)	SURG n = 45 (36%)	<i>P</i> value
Age (y), mean \pm SD	46.8 \pm 15.8	38.2 \pm 16	<.01
Male (%)	41 (52)	10 (22)	
Comorbidities No. of	.56/patient	.33/patient	.09
outpatient prescriptions	2.2	1.3	.02
Length of stay, d	5.4	4.2	.17

SD = standard deviation.

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