

Does Timing of Cholecystectomy for Acute Cholecystitis Affect Perioperative Outcomes?

A Retrospective Study of 806 Patients

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BACKGROUND:

Acute cholecystitis is a common cause of surgical admissions, and laparoscopic cholecystectomy remains the standard treatment. However, the optimal timing of surgery continues to be debated. Some studies suggest increased morbidity with delayed intervention. In this study, we aimed to evaluate the impact of timing of laparoscopic cholecystectomy on perioperative outcomes in patients with acute cholecystitis.

METHODS:

In this retrospective study, all patients who underwent laparoscopic cholecystectomy for acute cholecystitis between January 2021 and September 2025 were included. Demographic and clinical data were collected. Outcomes of interest included conversion to open surgery, hospital length of stay (LOS), postoperative complications, and 30-day readmission.

RESULTS:

A total of 3700 laparoscopic cholecystectomies were performed during the study period across the two participating hospitals, 806 (22%) of which were for acute cholecystitis, which was diagnosed based on clinical and radiological criteria. Baseline and operative characteristics of the study cohort are shown in Table 1. Table 2 shows perioperative outcomes stratified by timing of cholecystectomy.

Table (1): Baseline and operative characteristics of the study cohort

	Early cholecystectomy < 3 days (n=110)	Cholecystectomy at 3-10 days (n=617)	Delayed cholecystectomy > 10 days (n=79)	P value
Age, y, mean (SD)	43 (12)	42 (12)	40 (13)	0.178
Sex, female, n (%)	59 (54)	316 (51)	43 (54)	0.798
ASA				
Class I, n (%)	70 (64)	417 (68)	54 (68)	0.115
Class II, n (%)	40 (36)	187 (30)	21 (27)	
Class III, n (%)	0	13 (2)	4 (5)	
Duration of symptoms, days, mean (SD)	1.3 (0.7)	3.7 (2.0)	8.9 (3.7)	<u><0.05</u>
Time from symptoms onset to surgery, days, mean (SD)	1.7 (0.6)	5.7 (2.0)	13.2 (4.1)	<u><0.05</u>
Tokyo grading				
Grade 1, n (%)	76 (69)	191 (31)	19 (24)	<u><0.05</u>
Grade 2, n (%)	34 (31)	426 (69)	60 (76)	
Preop ERCP, n (%)	2 (2)	25 (4)	3 (4)	0.461
Intraoperative drain use, n (%)	11 (10)	86 (14)	8 (10)	0.381

Table (2): Perioperative outcomes of cholecystectomy for cholecystitis stratified by timing of surgical intervention

	Early cholecystectomy (n=110)	Cholecystectomy at 3-10 days (n=617)	Delayed cholecystectomy (n=79)	P value
LOS (days), mean (SD)	3 (2)	5 (3)	7 (6)	<u><0.05</u>
Mortality, n (%)	0	0	0	N/A
Conversion to open, n (%)	0	0	1 (1)	0.097
Common bile duct injury, n (%)	0	4 (1)	2 (3)	0.148
30-day readmission, n (%)	0 (0)	20 (3)	7 (9)	0.082

CONCLUSION:

Timing of laparoscopic cholecystectomy for acute cholecystitis appears to influence perioperative outcomes. In this cohort, delayed cholecystectomy was associated with significant longer LOS and showed higher though not statistically significant rates of CBD injury, conversion to open surgery, and 30-day readmission. These findings suggest that earlier surgical intervention may be preferable when feasible.