Al- Nahrain University College of Medicine

Risk of Gallbladder wall perforation during cholecystectomy in AL-Imamain AL-Khadhumain hospital

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Objectives

1-Reveal the risk factor of gallbladder wall perforation during cholecystctomy

2-tounderstand the outcome of gallbladder perforation

INTRODUCTION

- **Gallbladder perforation** is a serious complication of acute choleycystitis and represent an advanced stage of the disease. They tend to occur in an elderly and/or comorbid demographic and carry higher rates of morbidity and mortality. Gallbladder perforation (GP), which is a common intraoperative complication during cholecystectomy, has been reported to occur with a high incidence of 10%-33% . The risk factors and consequences of GP have also been studied

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. It has been advocated that male sex, a history of acute cholecystitis or previous laparotomies, the use of a laser, an inflamed or nonvisualized gallbladder, and a difficult operation increase the risk of GP . In addition, bile and stone spillage have rarely been reported to lead to severe problems . GP does not worsen the outcomes of the procedure, but it has been stated that lost stones after

GP may infrequently cause secondary complications,

INTRODUCTION

including pain, fever, or intraabdominal abscesses,

because they are a potential nidus of infection and bile spillage may lead to chemical peritonitis.

Pathology

Gallbladder perforation is the result of acute cholecystitis. The sequence of events leading to perforation begin with occlusion of the cystic duct (most often by a calculus), with resultant retention of intraluminal secretions. Distension of the gallbladder with a consequent rise in intraluminal pressure can impede venous and lymphatic drainage

Pathology

, leading to vascular compromise and ultimately to necrosis and perforation of the gallbladder wall.

Perforation often occurs iatrogenically during laparoscopic cholecystectomy, with an incidence of estimated to be 15-30%

Patients and methods

- All the patients who underwent an elective cholecystectomy between 5 of February and 5 of April 2019 at our department were retrospectively reviewed. The procedures were performed or supervised by one of six surgeons at our department. In case of GP during the operation, the management was generally alike: free bile was aspirated, the soiled areas were irrigated with physiological saline until clear, and spilled stones were retrieved whenever possible.

Patients and methods

These patients continued to receive intravenous and peroral antibiotics for 1 week in most instances. The placement of a drain and conversion to open surgery were decided by the operating surgeon. The patients were generally discharged from the hospital on the next day, but longer hospitalization was sometimes necessary

Patients and methods

The primary aims of the present study were to reveal the4 incidence and risk factors for and outcomes after intraoperative GP during elective laparoscopic surgery. The patients for whom conversion to open surgery was undertaken were excluded from further analyses, but the reasons for conversion were stated. The patients were classified into two groups based on the presence of GP at the time of the operation (Perforation or No perforation groups)

Results

Of 60 patients, an intraoperative GP was observed in 12(20%) patients (Perforation group) during traction of the gallbladder (n=1,,2%), the dissection of adhesions and bands (n=1, 2%), the dissection of Callot's triangle prior to cystic duct clipsing (n=2, 4%), the dissection of the gallbladder from its bed (n=6,10%), and the extraction of the gallbladder from the abdominal cavity (n=2, 4%). The remaining patients (n=48) were present in the No perforation group.

Results

Table 1: The risk factors for gallbladder perforation during elective cholecystectomy.

Demographics		No Perforation(n =48)	Perforation(n=12)	p-value
Age		49 ± 13.2	49 ± 13.8*	**0.16**
Gender	Female	82% (n=39)	75% (n=9)	**0.11**
	Male	18%(n=9)	25% (n=3)	
Previous Hospitalization 10%(n=5)			15%(n=2)	**0.10**
A.cholecystitis		4%(n=2)	7.5%(n=1)	
Bil. Pancreatitis		6%(n=3)	7,5%(n=1)	
Previous operation or laprotomy 10% (n=5)			15% (n=2)	**0.14**
Laprotomy		8%(n=4)	15% (n=2)	
Gastrodduodenal		2% (n=1)	0.0% (n=0)	
Experience of the Surgeon				**0.12**
Staff		20	2	
Resident		28	10	
Lab. Elevated ALT		6%(n=3)	33 %(n=4)	**0.04**

Results

- The outcomes after the operations were also analyzed. The results showed no statistically significant differences between the groups regarding postoperative hospitalization period, complications, and re-hospitalizations. In addition to the median (range) operation time, the rate of drain use was significantly increased in patients with GP ($p < 0.001$ for both). No patients required reoperation as a consequence of the complications. However, the pathological evaluations revealed gallbladder cancer in two patients (0.8%),
- both in the Perforation group.

Results

Table 2: Outcomes after gallbladder perforation			
	No perforation(N=48)	**Perforatio(N=12)**	p-value
Operation time (minutes)	35.4±17.5	41.4±18.7	<0.001
Drain use	21% (n=10)	50% (n=6)	<0.001
Hospitalization period (days)	1.3±1.0	1.3±0.9	0.13
Re-hospitalization	2% (n=1)	8% (n=1)	0.43

Discussion

- The present study reveals that GP occurs in 20% of the patients undergoing laparoscopic elective cholecystectomy but is less commonly reported in the operation notes. GP is unpredictable because there are probably no risk factors that increase the risk of GP, except a preoperatively assessed elevated ALT level; however, the sensitivity and specificity of this measure are low. The early postoperative outcomes are similar in patients with GP and those without, but the operation time lengthens and the incidence of drain use increases in patients with GP.

Discussion

- Several studies have evaluated the potential risk factors for GP during laparoscopic cholecystectomy. A multivariant logistic regression analysis has revealed male sex, a history of acute cholecystitic, the use of a laser, and the presence of a grossly inflamed gallbladder as individually significant risk factors for GP.

Discussion

- Our data did not reveal any other risk factor that increased the possibility of GP. Thus, we believe that GP may be unpredictable in the case of an elective cholecystectomies.

Conclusion

- The present study reveals that GP occurs in 20% of patients who undergo laparoscopic elective cholecystectomy, but it may not be recorded in most cases. We did not find any reliable risk factor that increases the possibility of GP. GP causes an increase in the operation time and incidence of drain use; however, the other outcomes were found to be similar in patients with GP and those without.

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Thank you