

## Frequency of complications due to laparoscopic cholecystectomy in Hamedan Hospitals

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### Abstract

**Objective:** To evaluate the frequency of complications in Laparoscopic cholecystectomies performed in Hamadan during 1997 to 2005.

**Methods:** In this retrospective cross sectional study, 426 patients with cholecystitis who were admitted to Hamadan hospitals including Ekbatan, Tamin Ejtamaiee, Mobasher, Boali and Artesh and were subjected to laparoscopic cholecystectomy from 1997 to 2005 were evaluated.

**Results:** Of the 426 patients studied, 53 (12.44%) were male and 373 (87.56%) were female. The most frequent complication was retained stone (1.64%), followed by biliary duct injury (1.4%), bile leak (1.4%) and bleeding (1.17%).

**Conclusion:** Laparoscopic cholecystectomy has become the gold standard technique in the treatment of gallbladder disease. However, special attention must be paid to high rate of bile duct injuries.

**Keywords:** Cholecystitis, Laparoscopic cholecystectomy (LC), Complications, Hamedan, Iran (JPMA 62: 13; 2012).

## Introduction

Gall stone disease is one of the commonly encountered diseases among the general population and its prevalence is variable in different countries from 10-15%.<sup>1</sup> This disease can be either asymptomatic or symptomatic. Symptoms can be specific including intermittent pains in the right upper quadrant of abdomen or can be nonspecific as nausea and vomiting.<sup>2</sup> Surgery for gall bladder removal is the only treatment for gall bladder stones and till 1986 this surgery was carried out only through open abdominal surgery.<sup>3</sup> Some of the complications of open gall bladder removal (open cholecystectomy) are due to the abdominal wall injury. To decrease such problems Flip More performed the first Laparoscopic Cholecystectomy (LC) in 1987, which is now prevalent. This method is applicable for the surgery of acute cholecystitis even for patients with hernia, abdominal ascites and pregnancy.<sup>4,5</sup> It also decreases the duration of hospital stay, treatment costs and period of rest before return to work.<sup>6</sup> However, anaesthesia related complications in these patients are similar to the patients who undergo open surgery.<sup>7</sup> Also bile duct injury and stenosis rates are higher in LC compared to open cholecystectomy.<sup>8</sup>

This survey was conducted to evaluate the frequency of biliary complications of LC in Hamedan, located in IR-Iran.

## Patients and Methods

In this retrospective cross sectional descriptive study, 426 patients with cholecystitis who underwent LC in one of Ekbatan, Tamin Ejtamaiee, Mobasher, Buali, Kashani and Artesh hospitals located in Hamedan, a major western city of IR-Iran during 1997 to 2005 were evaluated.

The data were acquired reviewing the patients' hospital files and surgery reports. The ethical issues were confirmed by the Research Department of Hamedan University of Medical Sciences.

The LC complications reviewed included retained biliary stone, bile duct injury, bile duct leakage, cystic artery bleeding, internal bleeding, abdominal pain following surgery, and mortality.

The complications data and demographic characteristics were registered and analyzed using SPSS V.13. The results were discussed employing descriptive statistics methods.

## Results

From 426 patients who underwent LP, 53 (12.44%) were male and 373 (87.56%) were female. Overall LC related complications were reported for 26 (6.10%) patients. Retained biliary stone with 7 (1.64%) cases was the most frequent complication of which 5 (71.42%) were females. Bile duct

injury and bile leakage in 6 (1.4%) cases and cystic artery bleeding in 5 (1.17%) cases were the next prevalent complications. There was one (0.23%) case of cystic artery bleeding and one (0.23%) of abdominal pain following the surgery. No mortality was reported in the patients.

## Discussion

Cholecystectomy is one of most common general elective surgeries.<sup>9</sup> Laparoscopic cholecystectomy was introduced as the first surgical treatment for symptomatic diseases of gall bladder and its advantages against open cholecystectomy are well described.<sup>10</sup> Unlike primary reports that indicated an increase in the complications rate of LC in comparison to open surgery, recent data shows that LC accounts for less morbidity and mortality compared to open surgery.<sup>11-14</sup> In our study no mortality was observed whereas in a similar study 0.04% mortality rate was reported.<sup>8</sup>

This study evaluated 426 patients subjected to LC at Hamedan hospitals. The prevalence of cholecystitis in females was 7 times higher than males in our study. These data which is significantly higher than results from other studies which reported females to be 3 times more than males.<sup>15-17</sup>

Bile duct injuries are the most serious complication of LC.<sup>18</sup> Although no significant difference has been reported in the rate of bile duct injury between open and laparoscopic cholecystectomy, injuries are more frequent in LC than open surgery and this rate is variable from almost 1% in LC<sup>19-23</sup> to 0.5% in open cholecystectomy. Bile duct injury rate in our study is 1.4% that lies within the prevalence rate found in other similar studies which was between 0.25% to 1.7%.<sup>20-23</sup>

Four of the six cases (66.67%) of bile duct injuries were female. Relatively high frequency of cholecystectomy in females could be attributed to higher injury rate in this gender. However, considering the ratio of injured cases to all of the cases in each group (3.77% in males and 1.07% in females), injury rate was higher in males.

Bile leakage and choleperitonitis after open cholecystectomy is rare but its rate increases in LC. Wood et al. reported that 17 of 34 cases with complications had bile leakage.<sup>24</sup> In this study, bile leak was reported in 6 patients. Also this study reported one case (0.23%) of choleperitonitis. Bleeding from cystic artery was seen in 5 cases (10% females), complicating 1.17% of our patients. All of the cases had been diagnosed during the operation and repair had been performed during the surgery. All such patients were discharged in good general condition. However, Hamazaki et al reported 14% bleeding rate and 0.2% bile duct injury rate which was higher than our results.<sup>25</sup>

Although Deziel et al. reported 0.14% small bowel injury in their study, this was 0.23% in our study.<sup>8</sup>

## Conclusion

The results of present and other studies in this field shows that LC is a safe and suitable method for treating all kinds of cholecystitis and can be applied as a method of choice in first line treatment for cholecystitis.

LC is a surgical method with low mortality rate but bile duct injuries are still a major problem. For preventing these injuries knowledge on local anatomy during surgery is mandatory.

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