

Spectrum of Histopathological Lesions in Cholecystectomy Specimens at Pak Red Crescent Teaching Hospital

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ABSTRACT

Objective: To study the spectrum of histopathological lesions found on surgically resected gallbladder to quantify the various abnormalities in gallbladder specimen.

Methodology: A descriptive observational study was carried out from Nov 2017 to Oct 2021. All the patients undergoing emergency and elective cholecystectomy regardless of age and sex were included in the study. After cholecystectomy, gallbladder specimen along with history and ultrasound findings was sent for histopathology to our own institution. Department of histopathology has the standardized method to process the gallbladder specimens. Demographic data along with diagnosis, ultrasound finding and histopathology report were collected and analyzed with Excel 2019.

Results: Total number of patients in this study was 395, out of which 93 patients were male and 302 patients were female. Average age of our patients was 43.05± 13 years. Acute calculus cholecystitis was found in 55 (13.92%) patients, 298 (75.44%) patients had chronic calculus cholecystitis, empyema was found in 15 (3.80) patients, cholesterosis was found in 5 (1.27%) patients, gallbladder polyp was found in 02 (0.51%) patients, gangrenous gall bladder was found in 01 (0.25%) patient and adenocarcinoma in situ was found in 01 (0.25%) patient.

Conclusion:

Our study shows that, chronic cholecystitis is the most common presentation followed by acute cholecystitis in surgically resected gallbladders. Females are predominantly suffering from the gallbladder diseases. The frequency of malignant lesion was very low.

Keywords: Gallbladder-histopathology, Acute Cholecystitis, Chronic Cholecystitis, Gallstones.

INTRODUCTION

In 1420 Antonio Benevieni (1443-1502) a Florentine pathologist first ever reported gallstones during autopsy of a female who died with pain abdomen. Gallstones are more common in fertile, obese female patients in fourth decade of their life. Incidence of gallstones in western societies is 10-15%. Globally symptomatic cholelithiasis is a common problem. Cholecystectomy is the treatment of choice in gallbladder stones^{1,2}, no matter how it is performed open or laparoscopic. Elective cholecystectomy is one of the most frequently performed abdominal operation in general surgery world-wide. Cholecystectomy specimens are usually associated with gall stones. Ultrasound is first line investigation in such patients. Preoperatively, in some cases it is very difficult to diagnose distinctively between benign and malignant lesions of gall bladder before surgery⁵. That is one of the reasons that all the cholecystectomy specimen should be sent for histopathology examination⁶. Currently in our institution, it is a standard practice to submit all the cholecystectomy specimens for routine histopathology examination, regardless of any grossly visible abnormalities. The objective behind conducting this study was to observe the spectrum of histopathological lesions found on surgically resected gallbladder to quantify the various abnormalities in gallbladder specimen.

METHODOLOGY

This study was carried out from Nov 2017 to Oct 2021 in the surgery and histopathology department of Pak Red Crescent Medical College, Dina Nath. It was a descriptive observational study. Ethical review committee approved the study. All the patients undergoing emergency and elective cholecystectomy regardless of the age and gender were included in the study by convenient sampling. After cholecystectomy, gallbladder specimen along with history and ultrasound findings was sent for

histopathology to our own institution. Department of histopathology has the standardized method to process the gallbladder specimens. Grossing was done and full thickness sections of the gallbladder were taken from the fundus, body, neck and the cystic duct margin. In case of focal lesions, additional sections were taken. Report was done by the senior professorial staff. Demographic data along with diagnosis, ultrasound finding and histopathology report were collected and analyzed with Excel 2019.

The data of all patients were collected for age, sex, diagnosis, histopathology report and were analyzed with Excel 2019 and SPSS ver.16.

RESULTS

A total number of 395 patients were operated in department of surgery for elective and emergency surgeries. Gender distribution is shown in table no. 01.

Average age of our patients was 43.05± 13 years., median was 42, mode was 50, max age was 90 years and minimum age was 16 years. Histopathological findings of 395 patients is given in table no. 02.

Table 01.

Gender	Total No of Patient	Percentage %
Male	93	23.54
Female	302	76.46
Total	395	100

Table 02.

Histopathology Diagnosis	Number of Cases	Percentage (%)
Acute calculus Cholecystitis	55	13.92
Chronic calculus Cholecystitis	298	75.44
Empyema	15	3.80
Mucocele	18	4.56
Cholesterosis	5	1.27
Benign Gall bladder Polyp	2	0.51
Gangrenous Gall bladder	1	0.25
Gallbladder Carcinoma in situ	1	0.25
Total	395	100

Received on 02-11-2021

Accepted on 17-12-2021

DISCUSSION

In current study we found females (76.46%) are predominantly suffering from gallstones as compare to male population. Our study is consistent with local⁷ and international data^{8,9}. High incidence of formation of gall stones in female population probably is due to sedentary life style and female sex hormones¹⁰. In our study majority of the patients were found in fourth decade of life which is well supported by the literature and by the other studied^{8,9,11}.

In present study chronic cholecystitis was observed in majority of the cases involving 298 (75.44%) specimens. Reported incidence of chronic cholecystitis in different regions of our country is from 64% to 82%^{12,13,14}. This incidence of chronic cholecystitis in our study is in concordance with local^{12,13,14}, locoregional¹⁵ and international studies^{16,17}.

Second most common presentation reported in our study was acute Cholecystitis (13.92%). Reported incidence of acute cholecystitis in literature is ranging from 9% -19%^{13,14,18}. Results of our study is inconsistent with other studies^{12,13,14,18}. Mucocoele was found in 4.56 % of the specimens. Mucocoele is a noninflammatory condition, which results when a stone is impacted in the neck of the gallbladder or in the cystic duct. If mucocoele infects empyema will occur. Empyema of the gallbladder was found in 3.8% of the specimens in our study. Gangrenous gallbladder was found in 0.25% of the specimens with no perforation. Gangrene of the gallbladder occurs from progressive vascular compromise and ischemia. It usually progresses to frank necrosis and perforation of the gallbladder specially in patients suffering from diabetes mellitus and are having advance age^{14,19}.

Cholesterolosis results from the accumulation of cholesterol esters and triglycerides in the macrophages within the gallbladder wall. It is a benign condition that may occur in two forms localized and diffuse (strawberry gallbladder). Cholesterolosis was found in 1.27% of the specimens. Localized cholesterolosis cholesteryl esters stick to the wall of the gallbladder forming polyps. Benign gallbladder polyp was found in 0.51% of the cases. About 95% of the gallbladder polyps are benign. Polyps of more than 02 cm have a significant malignant potential. Fortunately only 5% of gallbladder polyps are cancerous²⁰.

Gallbladder malignancy is more common in female patients and usually it is adenocarcinoma¹³. Seventy to eighty percent of the carcinoma gallbladder have a strong association with gallstones²¹. Incidental carcinoma was found only in one specimen (0.25%) which was confide to the gall bladder. Histopathology request form of the incidental carcinoma specimen was reviewed and found that, it was not only missed on radiological examination (USG) but also missed on clinical examination of gallbladder intraoperatively. Only histopathology has reported the carcinoma in situ. Low reported incidence of gallbladder carcinoma is probably due to advance presentation of gallbladder cancer which renders it unresectable.

CONCLUSION

The current study shows that, chronic cholecystitis is the most common presentation followed by acute cholecystitis in surgically

resected gallbladders. Females in their fourth to fifth decades of their life are having more chances from suffering the gallbladder diseases. The frequency of malignant lesion was very low. So benign lesions of gallbladder outnumber the malignant one.

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