

Assessment of Gall Bladder Mucosal Changes in Gallstone Patients Undergoing Laparoscopic Cholecystectomy: A Pathologic Study

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ABSTRACT

Background: Cholelithiasis is seven times more common in North India with an overall incidence of about 2.29%. Discarding gallbladder specimens without histopathological analysis is best avoided. Hence; present study was planned to assess gall bladder mucosal changes in gallstone patients undergoing laparoscopic cholecystectomy.

Materials & methods: A total of 100 gallstone patients were analyzed in the present study. Serum biochemical profile of all the patients was obtained. All the patients underwent Laparoscopic cholecystectomy under the hands of skilled surgeons. Gallbladder mucosal samples were obtained and were sent for histopathologic analysis. H and E stained slides were made and were analyzed by skilled and experienced pathologists. All the results were recorded and analyzed by SPSS software.

Results: Chronic calculous cholecystitis was found to be present in 88 cases, while malignancy was found to be present in 8 cases. Malignant diagnosis was found in 8 patients, while non-malignant diagnosis was present in 92 patients.

Non-significant results were obtained while correlating the type of pathology with age-wise distribution of patients.

Conclusion: A significant correlation might exist in between the spectrum of histologic alterations in the gallbladder mucosa and the pathogenesis of gallstone formation.

Key words: Gall bladder, Mucosal changes.

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INTRODUCTION

Cholelithiasis is seven times more common in North India with an overall incidence of about 2.29%. Number and different morphology of gallstones cause alteration in GB mucosa. GB mucosal change depends upon the duration of cholelithiasis and also on the gender of patient. Coexistence of gallstones with cholecystitis, hyperplasia, intestinal metaplasia, and carcinoma is well-known in literature. Incidental gallbladder (GB) carcinoma is revealed in 0.3-2% of all cholecystectomies done for benign conditions.¹⁻³ Discarding gallbladder specimens without histopathological analysis is best avoided. Selective approach for sending these specimens to the laboratory results in missing discrete pathologies like premalignant benign lesions such as porcelain gallbladder, carcinoma-in-situ and early carcinomas.³⁻⁵ Early carcinoma of gallbladder notoriously remains undiagnosed without histopathology as it neither produces clinical symptoms or signs nor provides any clues on ultrasound assessment.⁶ Hence; present study was planned to assess gall bladder mucosal changes in gallstone patients undergoing laparoscopic cholecystectomy.

MATERIALS & METHODS

The present study was conducted in the Department of Pathology, Rajshree Medical Research Institute & Hospital, Bareilly, Uttar Pradesh (India) and it included assessment of gall bladder mucosal changes occurring in gallstone patients undergoing laparoscopic cholecystectomy.

Ethical approval was obtained from institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol.

A total of 100 gallstone patients were analyzed in the present study. Serum biochemical profile of all the patients was obtained. All the patients underwent Laparoscopic cholecystectomy under the hands of skilled surgeons. Gallbladder mucosal samples were obtained and were sent for histopathologic analysis. H and E stained slides were made and were analyzed by skilled and experienced pathologists. All the results were recorded and analyzed by SPSS software. Chi-square test was used for assessment of level of significance. P-value of less than 0.05 was taken as significant.

Table 1: Distribution of subjects according to age group

Age group (years)	Number of patients
0- 20	3
21- 40	45
41- 60	37
More than 60	15
Total	100

Table 2: Gender distribution of subjects of present study

Gender	Number of patients
Female	71
Male	29
Total	100

Table 3: Distribution of subjects according to histopathologic diagnosis

Diagnosis	Number of patients
Acute cholecystitis	4
CCC	88
Malignancy	8
Total	100

CCC: Chronic calculous cholecystitis

Table 4: Correlation of type of pathology with age-wise distribution of patients

Type of pathology	Age group				Chi- square value	P- value
	0-20	21-40	41-60	Above 60		
Non- malignant	2	45	35	10	0.22	0.82
Malignant	0	3	3	2		

RESULTS

45 belong to the age group of 21 to 40 years. 37 patients and 15 patients belonged to the age group of 41 to 60 years and more than 60 years respectively. 71 patients were females, while the remaining 29 patients were males.

Chronic calculous cholecystitis was found to be present in 88 cases, while malignancy was found to be present in 8 cases. Malignant diagnosis was found in 8 patients, while non- malignant diagnosis was present in 92 patients. Non- significant results were obtained while correlating the type of pathology with age-wise distribution of patients.

DISCUSSION

Cholecystectomy performed with provisional diagnosis of benign diseases based on clinical, ultrasonological and computerized tomographic scanning misses a significant number of early malignant lesions of gallbladder. To avoid such blunders with bad consequences, therefore, every cholecystectomy specimen should be routinely examined histologically.⁶⁻⁹

In the present study, 45 belong to the age group of 21 to 40 years. 37 patients and 15 patients belonged to the age group of 41 to 60 years and more than 60 years respectively. 71 patients were females, while the remaining 29 patients were males. Siddiqui FG et al assessed the feasibility or otherwise of performing histopathology in every specimen of gallbladder. This cohort study

included 220 patients with gallstones for cholecystectomy. All cases with known secondaries from gallbladder, local invasion from other viscera, traumatic rupture of gallbladder, gross malignancy of gallbladder found during surgery was excluded from the study. Laparoscopic cholecystectomy was performed in majority of cases except in those cases where anatomical distortion and dense adhesions prevented laparoscopy. All gallbladder specimens were sent for histopathology, irrespective of their gross appearance. Over a period of two years, 220 patients with symptomatic gallstones were admitted for cholecystectomy. Most of the patients were females (88%). Ninety two per cent patients presented with upper abdominal pain of varying duration. All specimens were sent for histopathology. Two hundred and three of the specimens showed evidence chronic cholecystitis, 7 acute cholecystitis with mucocoele, 3 acute cholecystitis with empyema and one chronic cholecystitis associated with poly. Six gallbladders (2.8%) showed adenocarcinoma of varying differentiation along with cholelithiasis. The histopathological spectrum of gallbladder was extremely variable.¹⁰

In the present study, Chronic calculous cholecystitis was found to be present in 88 cases, while malignancy was found to be present in 8 cases. Malignant diagnosis was found in 8 patients, while non- malignant diagnosis was present in 92 patients. Non- significant results were obtained while correlating the type of

pathology with age-wise distribution of patients. Paliogiannis P et al retrospectively reviewed data on 311 consecutive elective cholecystectomies, performed for benign disease (cholelithiasis, cholecystitis) in our institution in the last six years, in order to determine the frequency of unexpected gallbladder pre-neoplastic and neoplastic lesions and analysed their clinical, diagnostic and therapeutic features. Three hundred eleven consecutive patients underwent elective cholecystectomy for benign gallbladder disease in our Institution from January 2005 to March 2011. Clinical records and histo-pathological reports were reviewed in order to detect occult gallbladder pre-neoplastic and neoplastic lesions and describe the clinical, diagnostic and therapeutic findings. Eight patients were excluded for lacking of important clinical data. Out of 303 patients examined, 26 (8.6%) were found to be affected by a concomitant pre-neoplastic or neoplastic lesion. Ten (3.3%) were found to have a benign lesion, 13 (4.3%) a dysplasia of the gallbladder epithelium and 3 (1%) a gallbladder adenocarcinoma. Dysplasia was found in 4.3% of cases and surgery represents the interruption of an eventual malignant evolution.¹¹

Khan S et al emphasized the importance of a detailed microscopic examination and studied the diverse range of histopathological lesions in cholecystectomy specimens. This is a retrospective study of 360 cholecystectomy specimens received in the Department of Pathology over a period of 2 years from November 2010 to October 2012. Clinical details and histopathological data were retrieved from the records. The variety of morphological changes in the diseased gall bladder were correlated with the clinical findings. Overall, there were 360 cases consisting of 74 (21%) males and 286 (79%) females. Maximum number of patients was between 31 and 40 years (30.2%). Most common pathology noted in our study was chronic cholecystitis seen in 280 cases (77.7%). Other benign lesions were cholesterosis in 36 (10%) and acute cholecystitis in 10 (2.7%). Various other associated lesions and variants of cholecystitis were also encountered. A total of nine malignant lesions of gallbladder were observed, which included eight cases of incidental adenocarcinomas and one case showing lymphomatous involvement. Their study emphasizes that a routine cholecystectomy performed for a common condition like gallstone disease can result in a diverse and wide spectrum of histopathological lesions ranging from benign diagnosis to an unexpected gallbladder malignancy.¹²

CONCLUSION

Under the light of above obtained results, it can be concluded that a significant correlation might exist in between the spectrum of histologic alterations in the gallbladder mucosa and the pathogenesis of gallstone formation. However; further studies are recommended.

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