

Histopathological Spectrum of gall bladder specimens after cholecystectomy

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ABSTRACT

Objective: To determine the histopathological pattern of gall bladder specimens in patients undergoing cholecystectomy.

Methodology: This was a retrospective study carried out mainly at a private university hospital and two other non-teaching private hospitals of Hyderabad city over a period of three years from June 2005 to May 2008. Histopathology reports of all those patients who underwent cholecystectomy (open or laparoscopic) were analyzed. The records of these patients were scrutinized with particular emphasis on presentation, preoperative ultrasonographic findings, operative findings and histopathology results.

Results: A total of 282 specimens of gall bladder were subjected to histopathology during the study period. Among them 75 were of males and remaining 207 were of females. Chronic cholecystitis was the most dominant histopathology finding seen in about 64.5% patients followed by acute cholecystitis / empyema in 33.6% of patients whereas carcinoma of gall bladder was found in only about 1.4% of the patients.

Conclusion: The commonest histopathological feature in this study was chronic cholecystitis.

KEY WORDS: Cholelithiasis, Histopathology, Carcinoma gall bladder.

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INTRODUCTION

Histopathological analysis provides the definitive diagnosis for most of the resected specimens. Gall stone disease remains one of the most common medical problems requiring surgical intervention.¹ Cholelithiasis produces diverse histopathological changes in gall bladder mucosa namely acute inflammation, chronic inflammation, cholesterosis, hyperplasia and carcinoma. Simple cholecystectomy is the treatment for all benign and pre-malignant gall bladder pathologies. Gall bladder cancer is a rare malignancy with overall poor prognosis. Simple cholecystectomy is curative if cancer is limited to the mucosa.² Gall bladder carcinoma is diagnosed histopathologically in 0.3-1.5% of cholecystectomy specimens.³ In 15-30% of the cases there is no evidence of malignancy before or during the operation, and the disease is diagnosed microscopically postoperatively.

Theoretically, this group carries the best prognosis.⁴ Analysis of specimens that provide no advantage to the patient, surgeon or histopathologist would seem futile. Certain tissues may not require microscopic assessment and could be selectively analyzed only if a macroscopic abnormality were detected saving pathology department time and resources; cholecystectomy specimens may be one such tissue. In most hospitals, cholecystectomy specimens are routinely sent for histology regardless of whether or not there is any visible macroscopic abnormality.⁵

The objective of this study was to determine the histopathological pattern of gall bladder specimens in patients undergoing cholecystectomy.

METHODOLOGY

This was a retrospective study carried out mainly at a private university hospital i.e. Isra University Hospital and two other non-teaching private hospitals of Hyderabad city over a period of three years starting from June 2005 to May 2008. Histopathology reports of all those patients who underwent cholecystectomy (open or laparoscopic) were analyzed. The histopathology department had a standardized procedure for the evaluation of cholecystectomy specimens and all gall bladders were processed in same way. The inclusion criteria included all patients having cholecystectomy (open and laparoscopic) in above mentioned hospitals during the study period, availability of adequate and complete medical records, histopathological examination at the Isra university hospital laboratory. The exclusion criteria included the absence of histopathological examination after cholecystectomy, histopathological examination at the laboratory other than Isra university hospital laboratory. Patients having inadequate or absence of medical records were also excluded from this study.

The limitations of this study included retrospective methodology of study, inadequacy of medical records specially at the two non-teaching private

hospitals and submission of specimen for histopathology by patients to laboratories other than Isra university hospital laboratory.

The case notes of these patients scrutinized with particular emphasis on presentation, preoperative ultrasonographic findings, operative findings and histopathology results. The data was entered and analyzed in the SPSS 16.0 version software.

RESULTS

A total of 282 gall bladder specimens were subjected to the histopathology examination during the above mentioned three years. Among these patients, 75 were of males and 207 were of females. The mean age was 45 years with range from 17 to 75 years.

Out of 282 gall bladder specimens, chronic cholecystitis was reported in 183 (64.8%) of specimens. About 89 (31.5%) specimens were reported to be having acute cholecystitis/ empyema. Four specimens (1.4%) were having benign polyps while two specimens (0.7%) were reported as acute acalculous cholecystitis. Four specimens (1.4%) were diagnosed as adenocarcinoma of gall bladder.

Age and sex distribution of patients having cholecystectomy is shown in Table-I. Detailed analysis of histopathological findings of gall bladder specimens is shown in Table-II.

DISCUSSION

Histopathology of specimens is a vital cornerstone in patient care. This not only establishes a tissue diagnosis, but is also crucial in clinical management decisions, provides important prognostic data, guidance for future treatment and can be used as a document for medicolegal purpose. In this era of evidence based medicine, discarding specimens without adequate pathological evaluation and evidence would be a sacrilege. Although it is widely accepted that routine histopathology of gall bladder specimens is unlikely to contribute in the management of most patients.⁶

Table-I: Age and Sex Distribution of patients with Cholecystectomy Specimens (n=282)

Age (Year)	Male	Female	Total (%)	No of cancers
15-30	10	29	39 (13.8%)	-
31-40	30	60	90 (31.9%)	-
41-50	25	65	90 (31.9%)	1
51-60	09	49	58 (20.5%)	3
61-onwards	01	04	05 (1.7%)	-
Total	75	207	282	4

Table-II: Histopathology findings of Cholecystectomy specimen (n=282).

S. No	Findings	No of Specimen	%
1	Chronic cholecystitis	183	64.8
2	Acute calculous cholecystitis / Empyema	89	31.5
3	Adenocarcinoma	4	1.4
4	Gall bladder polyp	4	1.4
5	Acute acalculous cholecystitis	2	0.7

Though a strong association has been reported between cholelithiasis and gall bladder cancer, but variable incidence among different ethnic groups suggests various factors responsible including size of stone, lifestyle, diet, environmental pollutants, chronic bacterial & parasitic infections and various hepatobiliary anomalies.⁷ Despite advancement in diagnostic and surgical techniques, it is still characterized by late diagnosis and poor prognosis except when incidentally diagnosed at an early stage after cholecystectomy for cholelithiasis. Early diagnosis of gall bladder cancer is rarely achieved because of gallbladder carcinoma in early stage is mostly either asymptomatic or presenting with features mimicking those of cholecystitis and cholelithiasis.

Sartaj et al⁸ in a study of about 750 patients found chronic calculous cholecystitis as major histopathological finding (68.2%) followed by acute cholecystitis / empyema in 30% and gall bladder cancer in 0.4% patients. This observation is consistent with the findings of this study as well as an earlier local study.⁹

The principle of selective histological examination is neither new nor limited to the gall bladder. Different studies have assessed the time and cost implications of routinely sending all specimens for histopathology.^{5,10-12} A difficult gall bladder at surgery should raise the suspicion of cancer. The presence of unusual findings at surgery like gall bladder mass, dense adhesions of the omentum and adjacent organs to the gall bladder, adherence of gall bladder neck to the bile ducts and difficult dissection of gall bladder from liver bed should raise the suspicion of carcinoma.¹³ A policy of examining the mucosa at the time of surgery and submitting the gall bladder for histopathology in case of any suspicious finding like polyps, ulcers, nodules, induration on gall bladder wall or invasion into liver bed, should be adopted. The Royal College of Pathologists (RCPath) guidelines have identified the cholecystectomy specimens as potentially of "limited or no clinical

value" in an attempt to address the increase workload of histopathologists, inappropriate use of their time and the improper use of limited resources.¹⁴ A similar recommendation is made by College of American Pathologists regarding selective histopathological examination of surgical specimens rather than routine examination.⁶

Darmas et al in their study suggested that standard histopathological examination of all gall bladders, irrespective of their macroscopic appearance during operation, is neither justifiable, nor cost effective and does not contribute to the management of patient.¹⁰ It was also noted that the adopting of a more selective policy and examining only the macroscopically abnormal gall bladders proved to be equally sensitive as no invasive carcinoma was missed. It can also be argued that early gall bladder cancer (pT1) missed on macroscopic examination needs no further surgery apart from cholecystectomy.¹⁵ Oommen et al also in a retrospective audit of histopathological findings of all gall bladders removed during four years from 2000 to 2004 found only one cancer of gall bladder out of 976 specimens.¹⁶ In contrast to this, a local study¹⁷ reported that more than 30% of the cases could not be diagnosed as gall bladder malignancy in the pre or intraoperative phase and histopathological examination of every specimen was advocated. So, the decision of selective versus routine submission of gall bladder specimens for histopathological examination is debatable and needs to be further explored in future prospective studies.

CONCLUSION

The histopathological spectrum of gall bladder after cholecystectomy was observed to be quite diverse. The most dominant diagnosis was chronic cholecystitis followed by acute cholecystitis / empyema of gall bladder whereas the carcinoma of gall bladder was rarely observed.

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