

Original Research

Routine histopathology of gallbladder after elective cholecystectomy for gallstones

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ABSTRACT:

Aim: To assess routine histopathology of gallbladder after elective cholecystectomy for gallstones in 94 patients. **Methodology:** 94 gall bladder specimens of either sex after elective cholecystectomy for gall stones were sent for histopathological examination. Routine histopathological examination with H and E stained slides were performed. **Results:** Age group 21-30 years comprised of 6 males and 5 females, 31-40 years had 11 males and 10 females, 41-50 years had 10 males and 12 females, 51-60 years had 5 males and 11 females, 61-70 years had 6 males and 12 females and >70 years had 2 males and 4 females. A non- significant difference was observed ($P > 0.05$). Common clinical features in patients were nausea and vomiting in 46 (48.9%), pain in upper abdomen in 80 (85.1%), intolerance to spicy food in 57 (60.6%) and mass in right hypochondrium in 28 (29.7%). A significant difference was observed ($P < 0.05$). Histopathological diagnosis was chronic cholecystitis in 42 (44.6%), acute cholecystitis with mucocele in 28 (29.7%), acute cholecystitis with empyema in 16 (17%), malignancy in 4 (4.2%) and polyp in 4 (4.2%) cases. A significant difference was observed ($P < 0.05$). **Conclusion:** Incidental diagnosis of carcinoma gallbladder is not uncommon, thus routine histopathology of all cholecystectomy specimens should be performed. The histopathological spectrum of gallbladder after cholecystectomy shows variation.

Key words: cholecystectomy, Gallbladder, Histopathology

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INTRODUCTION

Cholelithiasis is calculi formation that can occur in any portion of biliary tract. It is most common disease affecting the biliary tract. The incidence ranges from 12% to 24% of the world population. The incidence is more in females as compared to males. There is high prevalence among younger age group.¹ They are most prevalent in 4th and 5th decade of life. Twenty to thirty percent of western people aged 65 and around 10% of non-western population same ages have been affected by gallstones. Most of the cases remain asymptomatic and hence undiagnosed. So the exact prevalence becomes difficult. The traditional risk factors for gallstone disease (GSD) are the four 'F's'- 'female, fat, forty and fertile' - but age is additional risk factors in western countries.²

Cholecystectomy is the first line surgical management of symptomatic gallstones. Open Cholecystectomy had been recognized over centuries to be the standard. In 1980s, open cholecystectomy with a small incision was introduced as an alternative to laparoscopic

cholecystectomy.³ Despite the incidence of gall bladder carcinoma in Asian countries is much higher than the Western world, there are some tertiary hospitals with the practice of discarding the gallbladder specimen when appears macroscopically unremarkable, this practice depends on the assumption that GBC is always associated with naked-eye abnormalities. At the same time, this selective approach is justified by claiming that it reduces patient's financial liabilities and pathologist's workload.⁴ Histopathological analysis is therefore mandatory if we consider the high prevalence of carcinoma up to 12% and it can be neglected if 0.3% prevalence is considered.⁵ 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.⁶ We conducted this study of routine histopathology of gallbladder after elective cholecystectomy for gallstones.

METHODOLOGY

This prospective observation study comprised of 94 gall bladder specimens of either sex after elective cholecystectomy for gall stones. Ethical clearance was obtained after obtaining written consent from all patients.

Demographic data of each patients such as name, age, gender etc. was entered in case sheet. A thorough abdominal examination was carried out. Clinical

features were recorded. Open/laparoscopic cholecystectomy was performed. All gallbladder specimens were sent for histopathological examination. Routine histopathological examination with H and E stained slides were performed. Results were tabulated and assessed statistically using SPSS version 21.0. Chi- square test was used for statistics. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Age group (years)	Male	Female	P value
21-30	6	5	0.82
31-40	11	10	
41-50	10	12	
51-60	5	11	
61-70	6	12	
>70	2	4	

Age group 21-30 years comprised of 6 males and 5 females, 31-40 years had 11 males and 10 females, 41-50 years had 10 males and 12 females, 51-60 years had 5 males and 11 females, 61-70 years had 6 males and 12 females and >70 years had 2 males and 4 females. A non- significant difference was observed (P> 0.05) (Table I).

Table II Assessment of clinical features

Clinical features	Number (%)	P value
Nausea/ vomiting	46 (48.9%)	0.05
Pain in upper abdomen	80 (85.1%)	
Intolerance to fatty food	57 (60.6%)	
Mass in right hypochondrium	28 (29.7%)	

Common clinical features in patients were nausea and vomiting in 46 (48.9%), pain in upper abdomen in 80 (85.1%), intolerance to spicy food in 57 (60.6%) and mass in right hypochondrium in 28 (29.7%). A significant difference was observed (P< 0.05) (Table II, graph I).

Graph I

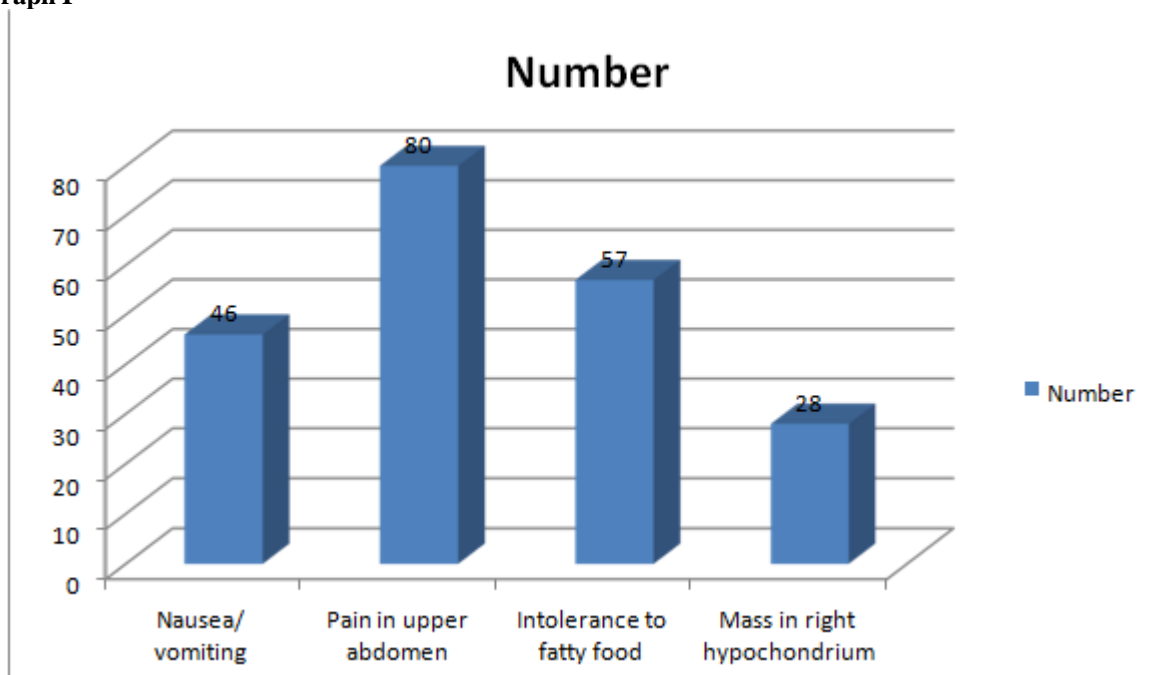


Table III Histopathological diagnosis

Histopathological diagnosis	Number	P value
Chronic cholecystitis	42 (44.6%)	0.02
Acute cholecystitis with mucocele	28 (29.7%)	
Acute cholecystitis with empyema	16 (17%)	
Malignancy	4 (4.2%)	
Polyp	4 (4.2%)	

Histopathological diagnosis was chronic cholecystitis in 42 (44.6%), acute cholecystitis with mucocele in 28 (29.7%), acute cholecystitis with empyema in 16 (17%), malignancy in 4 (4.2%) and polyp in 4 (4.2%) cases. A significant difference was observed ($P < 0.05$) (Table III).

DISCUSSION

Some non modifiable risk factors for gallstones are female sex, increased age, genetics and ethnicity.¹ Modifiable risk factors are obesity, rapid weight loss, the metabolic syndrome, certain diseases such as cirrhosis and Crohn disease, gallbladder stasis and lifestyle.⁷ Gallstone disease is rare in childhood, but becomes more frequent in adults with similar risk factors, particularly obesity.⁸ It is advisable to avoid discarding gallbladder specimens without histopathological analysis. 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.⁹ Early carcinoma of gallbladder notoriously remains undiagnosed without histopathology as it neither produces clinical symptoms or signs nor provides any clues on ultrasound assessment.^{10,11} We performed routine histopathology of gallbladder after elective cholecystectomy for gallstones.

Our results showed that age group 21-30 years comprised of 6 males and 5 females, 31-40 years had 11 males and 10 females, 41-50 years had 10 males and 12 females, 51-60 years had 5 males and 11 females, 61-70 years had 6 males and 12 females and >70 years had 2 males and 4 females. Hsieh et al¹² found that there were 16 male and 16 female patients with a mean age of 66.1 years. The most common clinical manifestations were right upper quadrant abdominal pain and poor appetite. The most common laboratory finding was an elevation of alkaline phosphatase. The preoperative diagnostic rate of this series was 46.9% (15/32 cases), through use of abdominal sonography, computed tomography, endoscopic retrograde cholangiopancreatography and celiac angiography. The coexisting gallstone incidence was 65.6% and the resectability rate, 59.4%. The histological classifications were adenocarcinoma with variable differentiation in 31 cases, and undifferentiated adenocarcinoma in one. The liver was the most common site for metastasis (53.1%), followed by lymph nodes at porta hepatis (21.9%), omentum (12.5%), peritoneum (9.4%), lung (6.3%), colon (3.1%) and duodenum (3.1%). According to the Nevin's staging system, three patients were in stage I and all survived more than five years. Of the two patients in stage II, one survived longer than five

years and the other survived longer than seven months. There were three cases in stage III: one patient died of metastasis eight months postoperatively, while the other two cases lived for seven and nine and a half months respectively. There were 24 cases in stage IV and stage V, all of them died less than six months after diagnosis.

Common clinical features in patients were nausea and vomiting in 46 (48.9%), pain in upper abdomen in 80 (85.1%), intolerance to spicy food in 57 (60.6%) and mass in right hypochondrium in 28 (29.7%). Siddiqui et al¹³ included 220 patients with symptomatic gallstones. 88% patients were females. 92% patients presented with upper abdominal pain of varying duration. All specimens were sent for histopathology. 203 of the specimens showed evidence chronic cholecystitis, 7 acute cholecystitis with mucocele, 3 acute cholecystitis with empyema and one chronic cholecystitis associated with poly. 6gallbladders (2.8%) showed adenocarcinoma of varying differentiation along with cholelithiasis

Our results revealed that histopathological diagnosis was chronic cholecystitis in 42 (44.6%), acute cholecystitis with mucocele in 28 (29.7%), acute cholecystitis with empyema in 16 (17%), malignancy in 4 (4.2%) and polyp in 4 (4.2%) cases. Khan et al¹⁴ found that among 250 patients, 75 (30%) were males and 175 (70%) females. The mean duration of disease was 5.61 ± 2.75 months. Gallbladder carcinoma on routine histopathology after elective cholecystectomy was observed in 18 (7.2%) patients whereas 232 (92.8%) patients did not have gallbladder carcinoma. All of the 18 patients who had carcinoma were females which showed a highly significant difference. Among 153 cases with < 7 mm stone size, carcinoma was observed in 11 patients and in 97 cases with ≥ 7 mm stone size, carcinoma was observed in 7 cases. Among 124 cases with < 5 months of duration of disease, carcinoma was observed in 9 patients and in 126 cases with ≥ 5 months of duration of disease, carcinoma was observed in 9 cases. Among 93 cases with < 2 stones, carcinoma was observed in 7 patients and in 157 cases with ≥ 2 stones, carcinoma was observed in 11 cases. Statistically insignificant difference was found between the duration of disease, number and size of stones and carcinoma of the patients.

CONCLUSION

Incidental diagnosis of carcinoma gallbladder is not uncommon, thus routine histopathology of all cholecystectomy specimens should be performed. The histopathological spectrum of gallbladder after cholecystectomy shows variation.

REFERENCES

1. Memon W, Khanzada TW, Samad A, Kumar B: Histopathology spectrum of gallbladder specimens after cholecystectomy. *Pak J Med Sci* 2011, 27(3):533–536.
2. Malik AM, Khan A, Sheikh U, Sheikh S, Laghari AA, Talpur KA: Changing spectrum of gallstone disease: an experience of 23 cases less than 10 years of age. *J Ayub Med Coll Abbottabad* 2008, 20(4):34–36.
3. Ayyaz M, Waris M, Fahim F. Presentation and etiological factors of cancer gall bladder in patients undergoing cholecystectomies at Mayo Hospital, Lahore. *Ann King Edward Med Coll.* 2001; 7: 138-40.
4. Nawaz T, Khan R, Malik A, Anwar I, Younus M. Incidence of carcinoma gall bladder in cholelithiasis. *Pak J Surg.* 2000; 16 (3): 33-6.
5. Kumar A, Aggarwal S, Berry M, Sawhney S, Kapur BM, Bhargava S: Ultrasonography of carcinoma of the gallbladder: an analysis of 80 cases. *J Clin Ultrasound* 1990, 18(9):715–720.
6. Bazoua G, Hamza N, Lazim T. Do we need histology for a normal – looking gallbladder? *J hepato-biliary – pancreat Surg.* 2007; 14 (6): 564-8.
7. Pradhan SB, Dali S. Relation between gallbladder neoplasm and *Helicobacter hepaticus* infection. *Kathmandu Univ Med J.* 2004; 2 (4): 331–5.
8. Channa NA, Soomro AM, Ghangro AB. Cholecystectomy is becoming an increasingly common operation in Hyderabad and adjoining areas. *Rawal Med J.* 2007; 32 (2): 128-30.
9. Ali SA, Tahir SM, Soomoro AG, Siddiqui AJ, Memon AS: Open cholecystectomy without intraperitoneal drainage. *J Ayub Med Coll Abbottabad* 2010, 22(2):29–31.
10. Hasan A, Nafie K, Aldossary MY, Ismail A, Monazea K, Baheeg M, Rady K, Elhawary R, Ibrahim AA. Unexpected histopathology results following routine examination of cholecystectomy specimens: How big and how significant?. *Annals of Medicine and Surgery.* 2020 Dec 1;60:425-30.
11. Samad A. Gall bladder carcinoma in patients undergoing cholecystectomy for cholelithiasis. *J Pak Med Assoc.* 2005; 55 (11): 497.
12. Hsieh J, Tsao W, Tang H, Hsu C, Wu K. Primary carcinoma of the gallbladder: a review of 10 years of experience at Tri-Service General Hospital. *Zhonghuayixue za zhi. Chinese Med J; Free China ed.* 1993; 51 (3): 193-9.
13. Siddiqui FG, Memon AA, Abro AH, Sasoli NA, Ahmad L. Routine histopathology of gallbladder after elective cholecystectomy for gallstones: waste of resources or a justified act?. *BMC surgery.* 2013 Dec;13(1):1-5.
14. Khan UA, Iqbal M, Aslam I, Gondal KM, Alam S. Importance of routine histopathology of gallbladder after elective cholecystectomy for gallstones. *Annals of King Edward Medical University.* 2016 May 21;22(2).