ORIGINAL ARTICLE

Routine Histopathology of Surgically Resected Gallbladder - A multicenter surgical audit

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ABSTRACT

Background: Occurrence of Gall Bladder diseases are common and they are presented with variety of different histopathological conditions. Cholelithiasis is attributed to both inflammatory and malignant diseases. The purpose of this study was to investigate demographic profiles of patients as well as histopathological presentation of surgically resected specimens of elective cholecystectomies.
Methods: This retrospective study was conducted on total 647 specimens collected at department of pathology at two tertiary care hospitals over the period of 3 years. Patient record were used to extract clinical and histopathological data.
Results: In total, there were 647 participants that included 68.6% females and 31.4% males. Average age of study participants was 44.8±15.2 years. Around 92.9% of the cases presented with cholelithiasis. Among all, the most common pathology was chronic cholecystitis (89.8%) whereas only one case was identified with malignancy.
Conclusion: The findings of current study suggest that one should promote both intra-operative and macroscopic examination to reveal presence of malignant condition. Though, it does not challenge importance of histopathological examination of surgically resected specimens of elective cholecystectomies.
Keywords: Gallbladder, cholelithiasis, histopathology

INTRODUCTION

Gall bladder is the most common organ resected and sent for histo-pathological examination by general surgeon. It may present with variety of diseases ranging from congenital anomalies, cholelithiasis to inflammatory or non-inflammatory lesions and even malignancies. Cholelithiasis is most common among them particularly in developed countries[1]. It can have a diverse clinical and histological presentation that includes asymptomatic, acute and chronic cholecystitis, hyrops, mucocele, empyema and gall stone ileus. Risk factors for developing cholelithiasis have been classified into modifiable and non-modifiable. Ethinicity, increasing age, female gender and genetic and family history contributes non-modifiable risk factors. Modifiable includes obesity, rapid weight loss and sedentary life style[2]. Several studies in the past had shown epidemiological relationship between gall bladder malignancy and gall stones[3-5]. There had been recent debate regarding selective histopathology for electively resected gall bladder specimen. This study aims to determine the diversity in histological findings of electively resected gall bladder specimen and to assess patient's demographic profile associated with it and whether it influences management outcomes or not?

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MATERIALS METHODS

This is a retrospective study conducted on 647 electively resected gall bladder specimen received at Pathology department of two tertiary care hospital of Pakistan from June 2012 till June 2015. Previous records were retrieved after approval from ethical review committee of hospital. Patient's demographic details along with clinical findings were recorded. Histo-pathological records were retrieved from hospital records. Surgically resected gall bladder specimen were examined macroscopically and at least two full thickness sections taken from fundus, body and neck of gall bladder. In cases where there is any suspicion of abnormality additional sections were also taken. Sectioned tissues were routinely processed and stained by hematoxylin and eosin stain. Microscopic examination wasdone to assess the presences of type of histopathological lesions.

RESULTS

A total of 647 gall bladder specimen were received at the departments of pathology. This represents

75.67% of total histo-pathological specimens (855) received during the above mentioned time period. Among them 203 specimen belongs to Male whereas, remaining 444 belonged to Female. The male to female ratio was around 1: 2.2. Average age of study participants was 44.8±15.2 years. As shown in Table-I majority of the participants belonged to 41-55 years (37.3%).

Table I: Age Distribution of Study Participants

Age in Years	Frequency	Percentage
11-25	57	8.8
26-40	178	27.5
41-55	241	37.3
56-70	156	24.1
71-85	15	2.3
Total	647	100

Among all, thickness of gall bladder wall was found to be increased in 179(27.7%) of the samples, as seen on macroscopic examination. The samples examined were than classified based on their presentation and pattern seen. The most common pattern presented on examination revealed pathology called Chronic Cholecystitis (89.8%). Among them, Follicular Variant was present in 3.7% of the cases. On evaluating the association of Chronic Cholecyctitis with other microscopic lesions, it was found that Chronic Cholecystitis was associated with adenomatous hyperplasia, antral metaplasia, cholesterolosis and focal cholesterolosis in 2(0.3%), 3(0.5%), 42(6.5%), and 32(4.9%) cases respectively. In 24 cases (3.7%), active inflammation was found. Moreover, xanthogranulomatous cholecyctitis (2.2%), acute cholecystitus (1.0%), and empyema (0.8%) histomorphological lesions were seen on examination. On histopathology only 1 lesion was identified to be malignant.

In total, 601(92.9%) cases presented with cholelithiasis. Around 57.14% of the cases with acute cholecystitis has calculus whereas, only 5.4% patients with chronic cholecystitis presented with calculus.

Table-II: Patient's Distribution as per Microscopic Lesion

Microscopic Presentation	Frequency	%age	Presence of Gall Stone	Increased Wall Thickness
Acute Cholecystitis	7	1.0	4	5
Chronic Cholecystitis with Adenomatous Hyperplasia	2	0.3	-	1
Chronic Cholecystitis with Cholesterolosis	42	6.5	32	7
Chronic Cholecystitis	505	78.1	490	113
Chronic Active Cholecystitis	24	3.7	22	16
Empyema	5	0.8	-	3
Chronic Cholecystitis with Focal Cholesterolosis	32	4.9	29	11
Follicular Cholecystitis	12	1.8	11	9
Follicular Cholecystitis with Antral Metaplasia	3	0.5	2	1
Xanthogranulomatous Cholecystitis	14	2.2	11	13
Carcinoma Gall bladder(T1a)	01	0.15	1	1
Total	647	100	601	179

DISCUSSION

Gall Bladder is the most common specimen which pathologist encountered in field of biliary tract. In a country of South Asia it is reported to be 2-29% and disease being more common in north as compared to south[4,6]. In study done by Unisa etal.[7] showed gall stone is more prevalent in females accounting for 5.5% in sub-continent. The present study on 647cholecystectomy specimens was done reterospectively to correlated demographic profile and various histopathological determinants encountered in surgically resected gall bladders. Out of 647total patients, Gall stones were found in 601 patients finding that was consistent with other studies[6]. Females was predominated and counts for 68.6% and male to female ratio was 1:2.2, a finding that was also reported by Damor et al.[8] and ozgur et al.[9] Other studies also reported higher incidence in females but total ratio as compared to males were higher as contradicts to this study[4,6,10-12]. Female sex hormones, sedentary lifestyles and genetic factors were the most common reasons attribute to findings of predominance female gender[4]. In this study age of patients were 44.8±15.2 years with maximum numbers were in third and fourth decade. This was in accordance with other studies[5,8,9,12,13] but opposite to others studies reported[4,6,10]. Gross examination of normal wall thickness was found in 468 cases whereas increased wall thickness (>3mm) was seen in 179 cases. In total 13 cases of xantho-granulomatous cholcystitis along with 9 of follicular cholcystitis and 113 of chronic cholecystitis showed a thickened wall. Xanthogranulomatous is associated with increased wall thickness and can mimic gall bladder carcinoma on gross examination[4,6]. Srikanth et al. in his prospective study showed that patients

having gall bladder thickness of >4mm found to have that 2 out of 60 cases have gall bladder carcinoma. But no significant difference was found between incidence of malignancy and wall thickness[14]. Most common histopathological finding in our study was chronic cholecystitis found in 89.8% cases, which is also present in other studies reported[9,13]. Adenomatous hyperplasia, cholesterolosis, focal cholesterolosis, and antral metaplasia were associated with CC in 0.3%, 6.5%, 4.9%, and 0.5% cases. Xanthogranulomatouschange, acute cholecystitis and empyema were seen in 2.2%, 1% and 0.8% cases respectively. In this case it had nodular thickening of wall at neck and fundus of gall bladder, cut surface showed greyish white area with cystic spaces in between. It highlights the importance of detailed gross examination to detect incidental, malignancies no matter now subtle the changes are. Several studies have been carried to suggest routine histopathology needed or not as gall bladder cancer always shows some gross features and therefore demands selective approach to save time and money[5,13,15]. But still at our country its common practice to send all specimen. However, there are studies which detected incidental malignancy in the absence of significant gross abnormality on routine histopathology[10,11,16]. In this series small proportion of patients had incidental gall bladder carcinoma present (0.15%). Incidence of gall bladder malignancy is on lower side in patients with asymptomatic gall stones[17,18], which can be increased in cases of porcelain, large sessile gall bladder, large gall stone, gall bladder impacted with multiple stones and anomalous pancreaticoabiliary ductal union[2,19].Lack of high risk conditions, early surgery and some preoperative biasness led to decrease number of malignant cases in this study. This highlights the need for more prospective study to determine factors for this lower rate of malignancy in highly prevalent zone of subcontinent.

CONCLUSION

Disease involving gall bladder is most common and can present with variety of symptoms. Cholelithiasis is major risk factor for inflammatory disease of this organ. Most common histopathological finding was chronic cholecystitis despite of acute presentation. In view of presence of Pakistan in gall bladder carcinoma belt malignant lesion was rare. Study emphasizes on meticulous macroscopic examination to rule out malignancy. However it is not undermining the importance of routine histopathology.

Conflict of Interest: All authors declare that there is no conflict of interest.

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