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RESEARCH ARTICLE

HISTOPATHOLOGY OF ROUTINE CHOLECYSTECTOMY SPECIMENS IS JUSTIFIABLE

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Abstract

Background: A gallbladder removed for benign disease has been sent for histopathological examination, but this practice has been the subject of controversy. This study was conducted to assess the feasibility or otherwise of performing histopathological examination in every specimen of gallbladder.

Methods: We analysed, retrospectively histopathological reports of all gallbladder specimens after cholecystectomy in last two years.

Results: A total of 1900 gallbladder specimens were sent for HPE out of which 1747 (91.9%) showed evidence of chronic cholecystitis and 66 (3.47%) showed chronic cholecystitis with cholesterolosis, 50 (2.63%) showed evidence of xanthomatous cholecystitis, 6 (0.03%) with polyp, 14 (0.73%) with follicular cholecystitis, 14 (0.73%) gallbladders were reported as malignant (adenocarcinoma) out of which 7 were in stage IA, 3 in stage IIA, and 4 in stage III.

Conclusion: Incidental diagnosis of carcinoma gallbladder is not rare, if the protocol of routine histopathology of gallbladder specimen is not followed, subclinical malignancies would fail to be identified with disastrous results. We strongly recommend routine histopathology of all cholecystectomy specimens.

Introduction:-

Gallbladder adenocarcinoma is a rare and aggressive malignancy. It is more common in the seventh decade of life. Women are at higher risk than men in developing this disease[1]. The signs and symptoms of gallbladder carcinoma are not specific and often present late[2]. Diagnosis is often made in the advanced stage with a poor prognosis; an overall mean survival of six months and a five year survival rate of less than 5%[3].

Cholecystectomy is curative if the cancer is limited to the mucosa (Tis). This is usually discovered incidentally by the pathologist in a gallbladder specimen removed for calculous cholecystitis[4].

So discarding gallbladder specimen without histopathological examination is best avoided. Selective approach for sending these specimens to the laboratory results in missing discrete pathologies like benign lesions such as porcelain gallbladder and sclerosing cholangitis[5]. Early carcinoma of gallbladder notoriously remains undiagnosed without histopathology as it neither produces clinical symptoms or signs nor provides any clue on ultrasound examination.

Cholecystectomy performed for provisional diagnosis of benign diseases based on clinical, ultrasonographic and CT scanning misses a significant number of early malignant lesions of gallbladder. To avoid such blunders with bad concequences, therefore, every cholecystectomy specimen should be routinely examined histologically [6].

Gallbladder carcinoma carries one of the worst cancer mortality . It is a frequent underlying pathology in patients undergoing cholecystectomy for chronic cholecystitis with cholilithiasis[7]. The incidence of carcinoma gallbladder associated with gallstones varies from 0.3 to 12 %[8]. Histopathological analysis is therefore mandatory for diagnosis of early carcinoma. Good prognosis is anticipated in patients with gallbladder carcinoma discovered as an incidental finding in stage I disease[9].

This practice of discarding gallbladder specimen is standard in most hospitals on the pretext that 'surgeon knows best which gallbladder is to be sent to laboratory. Histopathology is restricted to only those specimens, which show gross abnormality. At the same time, this approach is justified by claiming that it reduces patients financial liabilities and pathologists workload.

This contradicts to the worldwide practice where gallbladder specimen is invariably sent for histological analysis for the sole purpose of identifying discrete carcinoma at early stage.

This study was conducted to assess feasibility or otherwise of performing histopathology in every specimen of gallbladder. This would ensure picking of discrete carcinoma of gallbladder, hidden to both human eyes and touch, which in turn will assist in decreasing mortality rate.

Methods:-

This study was carried out in the Department of Pathology, Government Medical College Srinagar over a period of two years from January 2014 – December 2015. We analysed retrospectively, histological reports of all gallbladder specimens after cholecystectomy in last 2 years. Patients with evidence of carcinoma gallbladder, on clinical grounds and confirmed on radiology were excluded.

Demographic data such as age sex and clinical diagnosis were noted.

Results:-

Over a period of two years 1900 gallbladder specimens were subjected to histopathological examination approximately 950 per year.

There were 602 males and 1298 females with a male to female ratio of 1:2.15.

Gender Distribution		
Gender	**No. of Patients**	**Percentage**
Males	602	31.68
Females	1298	68.32

The age ranged from 7 years to 84 years with the mean age of 40.80 years.

Age Distribution		
Age of patients (years)	**No. of Patients (n=1900)**	**%**
0 – 10	2	0.10
11 – 20	111	5.8
21 – 30	408	21.4
31 – 40	562	29.57
41 – 50	405	21.31
51 – 60	275	14.47
61 – 70	108	5.68
71 – 80	29	1.5
81 – 90	2	0.10

Majority of patients (87%) presented with upper abdominal pain of varying duration.

Presenting Symptoms		
Symptoms	**No. of Patients (n=1900)**	**%**
Pain in Upper abdomen	1691	89
Intolerance to fatty food	1178	62
Nausea and/or vomiting	456	24
Mass in right hypochondrium	57	3

From a total of 1900 gallbladder specimens, the majority were reported as chronic cholecystitis (n=1747, 91.9%), chronic cholecystitis with cholesterolosis (n=69, 3.63%) 50 (2.63%) xanthogranulomatous cholecystitis, 6 polyps (0.03%), 14 (0.73%) follicular cholecystitis. 14 gallbladders (0.73%) showed evidence of adenocarcinoma of varying differentiation along with cholelithiasis.

Histopathological Findings		
Histopathology	**Male**	**Female**
Chronic cholecystitis	524 (87%)	1223 (94.2%)
Chronic cholecystitis with cholesterolosis	29 (4.8%)	40 (3.0%)
Xanthogranulomatous cholecystitis	27 (4.4%)	23 (1.7%)
Follicular cholecystitis	9 (1.4%)	5 (0.38%)
GB polyp	4 (0.6%)	2 (0.15%)
Adenocarcinoma gall bladder	9 (1.4%)	5 (0.38%)
Total	**602 (100%)**	**1298 (100%)**

There were 14 (0.73%) incidental carcinomas with no gross abnormalities. subsequent staging revealed 7 adenocarcinomas in stage IA, 3 adenocarcinoma in stage IIA and 4 adenocarcinomas in stage III.

Discussion:-

Gallbladder cancer is the most common malignancy of the extrahepatic biliary tree[10]. It is usually detected at an advanced stage and is associated with dismal prognosis[11]. Although early stage tumors are associated with good prognosis, the preoperative detection of tumors that are more likely to benefit from surgical resection is difficult[12]. The clinical presentation of early gallbladder carcinoma is non-specific and symptoms are similar to those of acute or chronic cholecystitis. Although an expert radiologist can detect the presence of early lesions in the in the form of focal gallbladder wall thickening or lesions of small mass, but not all cases of early gallbladder carcinoma present with an obvious lesion on addomen ultrasonography[12].

Some of the small lesions missed on preoperative ultrasound can be picked up on gross examination of the cholecystectomy specimen. Histopathological examination of cholecystectomy specimen facilitates the detection of tumors that are not apparent even on gross examination of the specimen[13]. Hence, it has been a traditional practice to send all cholecystectomy specimens for histopathological examination.

Recently, however, various reports in literature have questioned the role of routine histopathological examination in all cholecystectomy specimens[14]. The reasons given that the incidence of incidental gallbladder bladder carcinoma is too low to justify routine histopathological examination, that the routine histopathological examination of all cholecystectomy specimens overburdens pathology and hospital resources, and that almost all cases of incidental gallbladder carcinoma are associated with positive findings on gross examination of the gallbladder when it is cut open and examined in the operating theatre and that simple cholecystectomy is adequate for early stage tumors (carcinoma in situ and T stage I a tumor).

In this study females outnumber males with Male: female ratio of 1:3.5 Female predominance is also reported by similar studies[15]. The mean age was 40.80 years ranging from 7 to 84 years slightly higher than reported in other studies.

87% patients? pain upper abdomen, a number equal to that reported by Laghari et al[16].

The most common histopathological findings in our study was chronic cholecystitis 1747 (91.9%) and specimens were also reported as chronic inflammation with mucosal ulceration, denudation, metaplasia and wall infiltration by chronic inflammatory cell like neutrophils, macrophages, plasma cells and varying degree of fibrosis.

A similar studies by Memon[17] and Faisal et al[18] also reports chronic cholecystitis as major histopathological finding, identified in 64.8% and 92.3% respectively.

In our study, 6 (0.03%) cases of gallbladder polyp were identified. Gall-bladder polyps have an incidence ranging from 4.6 to 6.9 percent[19]. In our study 4 polyps were identified in male and 2 polyps were identified in females. This is in concordance to the known fact that prevalence of gallbladder polyps is much higher in males[20].

In the present study, retrospective analysis of 1900 cholecystectomy specimens removed from patients with presumed gallstone disease over a period of 2 years showed incidental carcinoma of gallbladder in 14 cases (0.73%). These gallbladders showed no gross abnormality preoperatively. Samad[21] reports an incidence of 1.15% of malignancy in patients who underwent cholecystectomy for presumed chronic cholecystitis with cholelithiasis. In a similar study by Faisal et al[18] incidental carcinoma of gallbladder was found in six cases (2.7%).

Gallbladder malignancy usually does not have any characteristic clinical feature with over 90% of patients presenting with symptoms of acute or chronic cholecystitis[22]. Most of the patients in our study presented with long standing history of chronic cholecystitis and there were no symptoms or signs suggestive of underlying malignancy in any patient .although ultrasound has a high diagnostic accuracy for both advanced and early gallbladder cancer[23] none of the carcinomas in this series were picked on preoperative ultrasound. In a similar study by Faisal et al[18] none of the six carcinomas were picked on ultrasound. This is in contrast to the study by De Zoyasa et al[24] in whom all four cancers were suspected either on preoperative USG or grossly during surgery, they suggest a more selective approach to gallbladder histology[24]. Similar observations and recommendations are made by other studies[25,26].

So the issue of routine histopathology of all gallbladder specimens therefore remained unsolved. We recommend routine histopathological examination of all gallbladders removed at surgery as these benefits should be weighed against the risk that early gallbladder malignancy and potential chances to provide curative treatment in this dismal disease might be lost. The projected cost saving does not look justifiable.

In patients with gallbladder carcinoma, a radical R0 resection is the only hope for cure. Patients with early stage gallbladder carcinoma benefit most from radical resection. Although a proportion of incidental gallbladder carcinoma patients with T stage Ia disease do not require further treatment, a significant number of incidental gallbladder carcinoma patients have stage Ib or II disease and will benefit from radical resection[27]. In the study by Faisal et al[18] the patients who were referred early by their treating physician (based on biopsy reports of gallbladder removed at index surgery) had 69.9% overall resectability rate. By contrast, patients who presented late with symptoms (because histopathological examination reports were either not available or neglected) had a poor overall resectability rate (7.8%). Time to presentation, which determined resectability rate, was affected by the availability of the histopathological examination reports. Thus, patients in whom evidence of malignancy was found on histopathological examination of the cholecystectomy specimen were referred early by their treating physician for completion radical cholecystectomy and had better rate of resectability.

It is not uncommon for the removed gallbladder not to be sent for histopathological examination, especially in peripheral centers. As a result, many patients present late at a time when their disease is usually advanced or metastatic.

Based on this study we recommend that all cholecystectomy specimens should be sent for routine histopathological examination so that early gallbladder carcinoma is not missed.

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