

## ORIGINAL ARTICLE

## FREQUENCY OF GALL BLADDER CARCINOMA IN PATIENTS WITH ACUTE AND CHRONIC CHOLECYSTITIS

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**Background:** Gallbladder carcinoma is a relatively uncommon neoplasm which is more common in the seventh decade of life compared to that of cholelithiasis which is in the fourth decade. The objective of the study was to determine the frequency of carcinoma gall bladder in cases of acute and chronic cholecystitis particularly with reference to cholelithiasis. **Methods:** This cross-sectional observational study was done in the department of Surgery at Fauji Foundation Hospital, Rawalpindi from 1<sup>st</sup> January, 2009 till 31<sup>st</sup> October, 2011. All 310 cholecystectomies performed during this period were included in this study. The specimens collected were macroscopically examined and sent for histopathology. All the reports were reviewed and the results recorded. **Results:** Out of 310 cases, 27 (8.7%) had acute cholecystitis and 280 (91.2%) were chronic cholecystitis. 3 specimens got autolysed and therefore excluded from the study. 290 cases had cholelithiasis. 2 out of 290 calculous cases were found to have coexistent carcinoma gall bladder proven on histopathology. **Conclusion:** Frequency of carcinoma gallbladder associated with cholelithiasis discovered incidentally after cholecystectomy is very low in our patients.

**Keywords:** Cholelithiasis, carcinoma gallbladder, histopathology, cholecystitis

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## INTRODUCTION

Gallbladder carcinoma is a relatively uncommon neoplasm that shows female predominance possibly related to a higher incidence of cholelithiasis in women.<sup>1</sup> More common age of Gall bladder cancer presentation is in the seventh decade of life compared to that of cholelithiasis which is in the fourth decade.<sup>2</sup>

It is seen that the incidence of gall bladder cancer is higher in Native Americans and Hispanics in the United States than all other ethnic groups.<sup>3</sup> Gall bladder cancer is associated with gall stones (80%), porcelain gall bladder (10–20%) and abnormal choledochopancreatic duct junction. Size of the gall stones may also be possible risk factor for Gall bladder cancer.<sup>4,5</sup> In Pakistan different studies show 6–28% frequency of carcinoma with cholelithiasis.<sup>2</sup>

Recent clinical and epidemiological studies have pointed a link between gall stone disease, Gall bladder cancer, as well as other hepatobiliary diseases and previous infection with *Helicobacter* species.<sup>6</sup>

Commonly Gall bladder cancer arises in the fundus (60%) of the gall bladder and metastasis to liver, lymph nodes and other organs is frequent. Histologically most common Gall bladder cancers are adenocarcinoma with variable degrees of differentiation.<sup>7</sup> Failure to detect early disease contributes to a poor prognosis.

The objective of the study was to determine the frequency of carcinoma gall bladder in cases of acute and chronic cholecystitis particularly with reference to cholelithiasis.

## MATERIAL AND METHODS

This cross-sectional observational study was conducted in Department of Surgery at Fauji Foundation Hospital, Rawalpindi in unit-III. All the cholecystectomies done during the period of 1<sup>st</sup> Jan, 2009 to 31<sup>st</sup> October, 2011 were included in the study. Every gall bladder specimen collected during the operation was grossly examined and sent for histopathology. All the histopathology reports were collected and results included in the study. Cases where specimens or histopathology reports were unavailable were excluded from the study.

Distribution of patients with gall bladder disease was calculated in different age groups and mean age was assessed. It was difficult to comment on the gender related frequency of carcinoma gall bladder and gall bladder disease as all cholecystectomies done during study period were females. The analysis was carried out on SPSS-16.

## RESULTS

The frequency of gall bladder carcinoma in the 310 cases of acute and chronic cholecystitis associated with cholelithiasis was 0.68%. The mean age of the patients with gall bladder disease was 49±12.27 years. Out of the 310 cases, 166 patients (53.55%) with gall bladder disease were present in 46–65 years of age group followed by the age group of 26–45 years (Table-1).

Murphy's sign was positive in 10% cases. In 80% of the cases, the complaint was pain in right hypochondrium. 15% of cases presented with pain

right hypochondrium along with pain epigastrium, while dyspepsia, flatulence and nausea were the chief complaints in only 05% of the patients (Table-2). All the cases were symptomatic, not a single case of asymptomatic gallbladder was operated.

Histopathological reports showed 27 (8.7%) acute, 280 (91.2%) chronic cholecystitis. 290 were calculous (288 non-malignant and 2 cases were malignant), 13 were acalculous, 1 porcelain, and 3 xanthogranulomatous (Table-3). Three samples were autolyzed. These cases were not included in the results.

**Table-1: Frequency of gall bladder disease (acute and chronic cholecystitis) in different age groups**

Age groups	Number of patients	Percentage
5-25	10	3.23
26-45	111	35.81
46-65	166	53.55
66-75	20	6.45
76+	3	0.97
<b>Total</b>	<b>310</b>	<b>100%</b>

**Table 2: Clinical symptoms and signs in patients operated for gall bladder disease**

Symptoms	N	%
Pain in right hypochondrium (RHC)	248	80
Pain epigastrium associated with pain RHC	46	15
Dyspepsia, flatulence, nausea/vomiting	16	5
<b>Signs</b>		
Positive Murphy sign	31	10
palpable gall bladder	3	0.96

**Table-3: Frequency of gall bladder disease in patients admitted in the surgical unit of Fauji Foundation Hospital**

Gall bladder disease	Number of cases	Percentage
Acute cholecystitis	27	8.71
Chronic cholecystitis	280	90.32
Autolyzed	3	0.97
<b>Calculouscholecystitis</b>	<b>290</b>	<b>93.55</b>
Non malignant	288	(99.32%)
Malignant	2	(0.68%)
<b>Acalculouscholecystitis</b>	<b>13</b>	<b>4.19</b>
<b>Porcelain</b>	<b>1</b>	<b>0.32</b>
<b>Xanthogranulomatous</b>	<b>3</b>	<b>0.97</b>
<b>Autolyzed</b>	<b>3</b>	<b>0.97</b>

## DISCUSSION

Gallbladder malignancies are diagnosed late despite recent advances in technology. Carcinoma of the gallbladder is rare as compared to the incidence of the chronic calculus cholecystitis and is usually confirmed at post-operative histopathological examination.<sup>1,8</sup> The carcinoma of the gallbladder is usually diagnosed incidentally following surgery for gallstones diseases.<sup>9,10</sup> Most of the patients harboring early carcinoma gallbladder are asymptomatic at the time of presentation; however ultrasound may pick up early carcinoma gallbladder in the form of wall thickening, sessile or pedunculated polyp and

replacement of gallbladder with heterogeneous mass.<sup>1,11</sup>

Patients suffering from advanced disease may have symptoms like abdominal pain, jaundice, anorexia and weight loss etc. The early stage of the disease is silent that is why it is diagnosed late. Even in developed countries where facilities for radical surgery are available, 60–90% of these tumors are wide spread at the time of diagnosis.<sup>1</sup> The frequency of carcinomas in the cholecystectomies performed for any reason was 0.68% in our study.

In all the cases ultrasound was the main investigation advised for diagnosis. In 3 cases ultrasound was suggestive of mass (carcinoma) gallbladder. In these cases, CT scan further confirmed advance metastatic carcinoma gallbladder. These patients were elderly, not fit for general anesthesia and neither the consent was given for any surgical intervention. Due to the non-availability of histopathological reports to confirm carcinoma gall bladder, these cases were not included in the final results. If these cases were included in the study then frequency of carcinoma gallbladder would be 1.7%.

In Pakistan the frequency of carcinoma gall bladder reported by Ahmed G *et al* was 28%<sup>5</sup> which was found to be very high as the study had a small sample size and confounding variables were not adjusted. High incidence was seen in Chileans, American Indians and in parts of north India where it accounts for as much as 9.1% of all biliary tract diseases. In Western practice gallbladder cancer accounts for less than 1% of new cancer diagnosis.<sup>11</sup> In Chili the mortality rate due to carcinoma gallbladder is 5.2% which is highest in the world.<sup>12</sup> It is very obvious that there is a large difference of 0.68–28% with frequency of carcinoma gallbladder in patients with cholelithiasis in Pakistan. This difference may be due to difference in sample size, geographical and environmental factors, age more than 70 years, cholelithiasis and chronic inflammation (for longer duration), smoking, people working in metal or rubber industry, genetic factors (first degree relative with gallbladder cancer has 5 times more risk), obesity, diet (high in carbohydrates and low in fibers) typhoid carriers, competence of pathologist and provision of medical facilities in the area. By medical facilities we mean that if facility of ultrasound and surgery are available in the area resulting in early cholecystectomies, this may reduce incidence of carcinoma gall bladder in patients with cholelithiasis. As for as our system is concerned, patients are entitled. They are provided with free treatment facilities. They have easy access to hospital. Whenever patients come with symptoms suggestive of cholelithiasis, they are advised ultrasound and if there are stones they are operated

upon. So the patients don't have to wait for longer duration. These early cholecystectomies may be a strong reason for low frequency of carcinoma gall bladder in our patients. To know the exact incidence of carcinoma gallbladder there is a need to carry out more studies with large samples and at regional levels.

## CONCLUSION

On the basis of this study frequency of carcinoma gallbladder is very low in our patients. A detailed clinical history, high index of suspicion, good ultrasound, thorough gross examination and competent histo-pathologist can be helpful to pick up carcinoma gall bladder at an early stage.

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