

# Clinico-morphological features of incidental gall bladder carcinoma in laparoscopic cholecystectomy for gall stones at Rehman Medical Institute from 2017-2018

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**ABSTRACT**

**Introduction:** Gall bladder carcinoma is a highly malignant tumor with a poor prognosis and a survival rate of less than 10%; gall stones are reported as the major cause. Absence of specific symptoms results in missed diagnosis in early stages.

**Objective:** To determine the clinical and morphological features of gall bladder carcinoma found incidentally in specimens of laparoscopic cholecystectomy for gall stones at a tertiary care hospital of Peshawar, Khyber Pakhtunkhwa, Pakistan.

**Methods:** Data of 130 patients undergoing laparoscopic cholecystectomy for gall stones during 2017-18 were retrieved from the database of Department of Surgery, Rehman Medical Institute, Peshawar on a structured Performa, that included demographic data, clinical features, macroscopic features, and microscopic findings. Data were analyzed by SPSS 25 for descriptive statistics.

**Results:** Of 130 gall stones cases during 2017-18, females (65.4%) were almost double than males (34.6%). Most common complaint of patients was abdominal pain (88%) followed by weight loss (6%), fever (4%) and jaundice (2%). Incidence of malignancy in this study was 1.6%. Macroscopic features showed that gall stones associated with ulcers and wall thickening (76.1%) were common compared to simple wall thickening (23.8%).

**Conclusion:** Spectrum of malignancy is a rare and incidental finding in patients undergoing laparoscopic cholecystectomy for gall stones, probably because stages 1 and 2 are asymptomatic and may not be detected by routine ultrasound.

**Keywords:** Gall stones, Gall bladder, Gall bladder malignancy.

*The authors declared no conflict of interest. All authors contributed substantially to the planning of research, data collection, data analysis, and write-up of the article, and agreed to be accountable for all aspects of the work.*

**INTRODUCTION**

Gall Bladder Carcinoma (GBC) is one of the highly malignant tumors constituting 0.3-1.5% of all cases after cholecystectomy, being the most common bile duct cancer.<sup>1</sup> Early diagnosis of GBC is difficult because of absence of specific symptoms and the frequent association with chronic cholecystitis and gall stones. GBC has a poor prognosis with the 5-year survival rate being less than 10%. It affects women four times more compared to men.<sup>2</sup>

GBC is asymptomatic in nature which makes for difficulty in diagnosis and treatment. The symptoms of GBC are alike to other GI tract problems. The clinical presentation is nonspecific, may include abdominal pain, weight loss, fever, and jaundice; any of these can also be seen in cholecystitis and other benign gall bladder conditions as well as in other abdominal malignancies.<sup>3</sup>

Gall stones are found in 70% to 98% of patients with gall bladder carcinoma. The risk of gall bladder malignancy in patients with chronic cholecystitis and cholelithiasis is seven times greater than the normal population. According to one study, incidence in western societies was reported as 0.9 and 1.9 in 100,000 men and women, respectively.<sup>4</sup> However, it has been seen in northern India and Pakistan with a high incidence of 21.5 and 13.8 in 100,000 cases, respectively.<sup>5</sup>

Risk factors for gall bladder cancer include obesity, reproductive factors, genetic factors, lifestyle risk factors (cigarette smoking, alcohol consumption, etc.), chronic cholecystitis, environmental exposure to specific chemicals, gall stones, and others; yet gallstones are said to have a major role in it.<sup>6</sup> Eighty percent of gall bladder cancers are typically seen as polypoid lesions, and definite diagnosis can be done only by pathologic examination.<sup>7</sup>

Laparoscopic cholecystectomy has become the gold standard for treatment of symptomatic gall stones.<sup>8</sup> In the United States, gall bladder malignancy causes approximately 2400 annual deaths, while in Italy 600 annual deaths are reported.<sup>9</sup> It is reported that the 5-year survival rate is 32% when the serous membrane is involved. If the tumor is more advanced, the annual survival rate is decreased to 10%.<sup>10</sup>

According to Royal College of Surgeons of England, ultrasound is diagnostic for gall stones and gall bladder pathologies;<sup>11</sup> routine CT Scan is not performed in patients of cholelithiasis and may be the reason why gall bladder carcinoma is not detected pre-operatively in these patients, especially if they have stage I and II GBC. It is therefore usually an incidental finding.

The present study was carried out to determine the clinical and morphological features of incidental gall bladder carcinoma in patients undergoing laparoscopic cholecystectomy for gall stones at a tertiary care hospital of Peshawar, Khyber Pakhtunkhwa, Pakistan.

**MATERIALS & METHODS**

This cross sectional descriptive study based on retrospective data of the years 2017-2018 was carried out at the Department of Surgery, Rehman Medical Institute (RMI), Peshawar; data were obtained from the RMI computerized database after approval from the RMI-REC (RMI Research Ethics Committee).

All patients in whom laparoscopic cholecystectomy for gall stones was performed during the selected years were included; patients having dual pathologies, gynecological problems and renal abnormalities were excluded so that the study was confined to clinical features of patients with gall bladder malignancy.

Data were collected on a structured Performa. The Performa consisted of demographic data, clinical features, and pathologic findings (macroscopic and microscopic). All gall bladder specimens were sent to the Pathology laboratory for gross and microscopic examination and reporting.

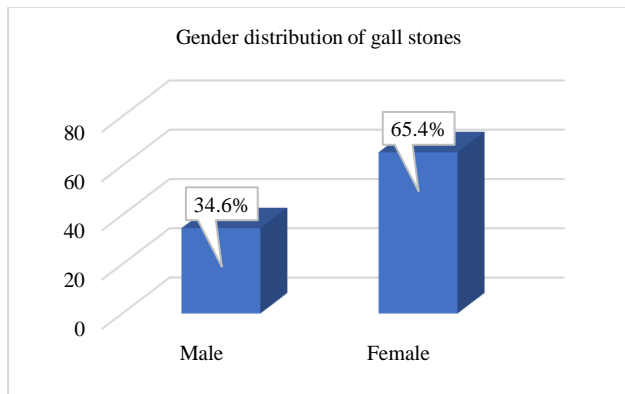
Data were analyzed using SPSS 25 for descriptive statistics; data of clinical features and pathological examination were included in the analysis.

**RESULTS**

A total of 130 cases in which laparoscopic cholecystectomy was performed for gall stones in Rehman Medical Institute, Peshawar during 2017-2018 were retrieved.

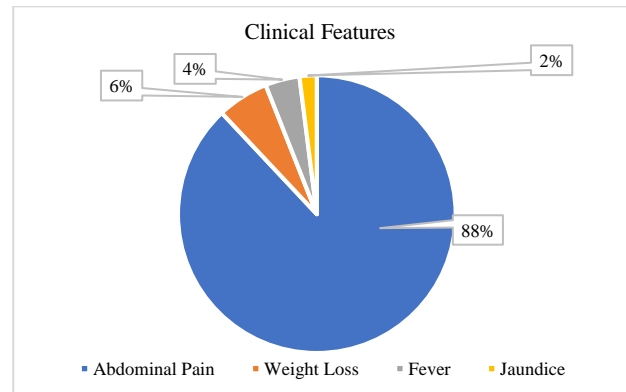
Results are displayed in figures 1-5.

Figure 1 shows that gallstones were much more common in females as compared to males (almost 2:1).



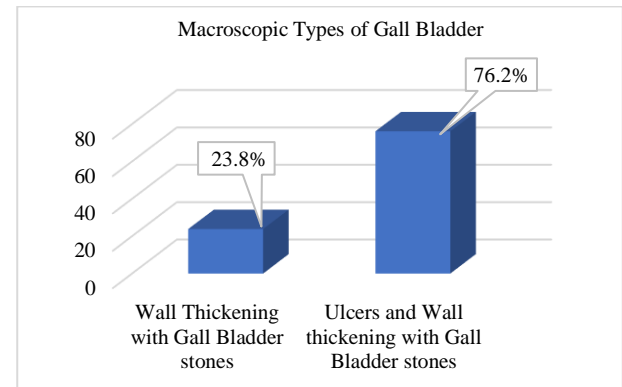
**Figure 1: Gender distribution of gall stones (n=130)**

Regarding the clinical features found in gall stone patients, the majority (88%) had abdominal pain, followed by weight loss (6%), Fever (4%), and Jaundice (2%), as shown in Figure 2.



**Figure 2: Clinical features in gall stone patients (n=130).**

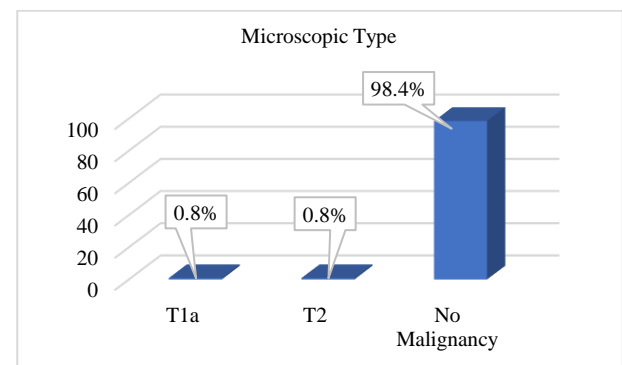
Figure 3 shows the macroscopic findings of pathology. Most cases (99, 76.2%) had gall bladder wall thickening with ulcerations, while the remaining cases (31, 23.8%) had wall thickening without ulcerations.



**Figure 3: Gross pathological descriptions of gall bladders removed for gall stones (n=130).**

The microscopic features of gall bladders removed for gall stones are shown in Figure 4.

Most of the gall bladders showed benign inflammatory changes, but 1.6% showed the presence of well-differentiated adenocarcinoma of the gall bladder, equally (0.8% each) divided between T1a and T2.



**Figure 4: Microscopic findings in gall bladders removed for gall stones (n=130).**

## DISCUSSION

In the present study, gall stones cases in females (65.4%) were almost double than males (34.6%); this finding matches the study of World Journal of Clinical Cases<sup>2</sup> and another study<sup>12</sup> which state that women are almost two-times likely to form gall stones compared to men; however, after menopause this gap narrows as the men begin to catch up.

The most common presenting complaint of patients in the present study was abdominal pain (88%), followed by weight loss (6%), fever (4%), and jaundice (2%). A study done in Liaquat University Hospital, Hyderabad, Jamshoro, Pakistan showed almost similar results with 92% of patients in whom malignancy was confirmed presenting with abdominal discomfort.<sup>13</sup>

Incidence of malignancy in this study was 1.6% (T1a 0.8% and T2 0.8%) similar to another study<sup>1</sup> where gall bladder carcinoma constituted 0.3-1.5% of all cholecystectomies. The malignant

cases found were in the early stages i.e. T1a and T2, a finding supported by a study on gall bladder carcinoma found incidentally during laparoscopic cholecystectomy for symptomatic gall stone disease<sup>14</sup> and another study on gall bladder cancer<sup>15</sup> discovered as an unsuspected finding during or after laparoscopic cholecystectomy.

The two confirmed malignant cases in the present study were adenocarcinoma; macroscopically gall stones were mostly associated with ulcers and wall thickening.

## CONCLUSION

Spectrum of malignant change in patients presenting with cholelithiasis is rare and discovered as an incidental finding because stage 1 and stage 2 are asymptomatic and cannot be detected by routine ultrasound.

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