



## A Study of Incidental Gall Bladder Carcinoma in Patients Undergoing Cholecystectomy at A Tertiary Care Hospital

Authors

Rawi Agrawal<sup>1</sup>, Amitesh Kumar<sup>2</sup>, Madhur Chaudhary<sup>2</sup>, Ajeet Kumar<sup>1</sup>, Anju Singh<sup>3</sup>,  
Widhi Agrawal<sup>4</sup>, Guddi Rani Singh<sup>1</sup>

<sup>1</sup>Senior Resident, Department of Pathology, I.G.I.M.S., Patna

<sup>2</sup>Senior Resident, Department of Gastroenterology, I.G.I.M.S., Patna

<sup>3</sup>Associate Professor, Department of Pathology, I.G.I.M.S., Patna

<sup>4</sup>Intern, B.S.M.C., Bankura

### Abstract

**Background:** Gallbladder Carcinoma (GBC) is the most common malignancy of the biliary tract. It's indolent and nonspecific clinical presentation and paucity of pathognomonic radiological features, often preclude diagnosis at an early stage. Most of the cases are diagnosed incidentally among patients undergoing cholecystectomy. GBC is a highly lethal disease, with only 10% patients presenting at a stage amenable to surgical resection. In this study we report incidental carcinoma of gallbladder in patients undergoing cholecystectomy at a tertiary care hospital in Bihar.

**Methods:** An observational study was carried out. The hospital records and histopathology reports of 782 patients who had undergone cholecystectomy were studied.

**Results:** Out of 782 cases of cholecystectomy, gallbladder cancer was detected in 9 (1.15%) cases and was more common in females (M:F ratio = 1:3.5). The age of occurrence ranged from 29 to 80 years. Most of the cases were at early stages and only two of them were in pT3 pathological stage. Adenocarcinoma was the most common histological type.

**Conclusion:** The rate of incidental carcinoma of gallbladder is 1.15% in our region. Routine postoperative histopathological examination of gall bladder is mandatory.

**Keywords:** Gallbladder, Carcinoma, Cholecystectomy, Incidental.

### Introduction

Gallbladder cancer (GBC) is the fifth most common cancer of the gastrointestinal tract and the most common cancer of the biliary tract.<sup>(1)</sup> It is also the most aggressive cancer of the biliary tract with short median survival.<sup>(2)</sup> It has poor prognosis which is due to an aggressive biologic behavior and lack of sensitive screening tests for early detection.<sup>(3)</sup> This results in delayed diagnosis

at an advanced stage. The risk factors are advanced age, female gender, cholelithiasis, porcelain gallbladder, gallbladder polyps, congenital biliary cysts, chronic infection, and smoking. According data from the national registry program of India, Northern India especially the gangetic belt has a high incidence of GBC.<sup>(4)</sup> The incidence of gall stone disease is high in Asian countries due to their food habits, rich in calories and fat.<sup>(5)</sup>

Approximately 90% of Gall Bladder cancer have accompanying cholelithiasis,<sup>(6)</sup> but only 5 to 3% of patients with cholelithiasis eventually develop GBC.<sup>(7)</sup> Women are more commonly affected than men. In India, GBC is the fourth commonest cancer in females.<sup>(8)</sup> Peak age of incidence are 6th and 7th decades.<sup>(9)</sup> Only 30% of gallbladder carcinomas are suspected preoperatively. The majority are discovered incidentally during surgery or by pathological examination.<sup>(10)</sup> Incidental gall bladder carcinoma (IGBC) is an incidental finding of carcinoma diagnosed during cholecystectomy or on histopathological examination of gall bladder specimen removed for benign gall bladder diseases. The incidence of IGBC is around 0.19 to 3.3% in literature.<sup>(11)</sup>

### Aims and Objectives

The aim of the present study was to report incidence and demographic profile of gall bladder cancers which were incidentally diagnosed during histopathological examination of cholecystectomy specimens done for benign gall bladder disease.

### Material and Methods

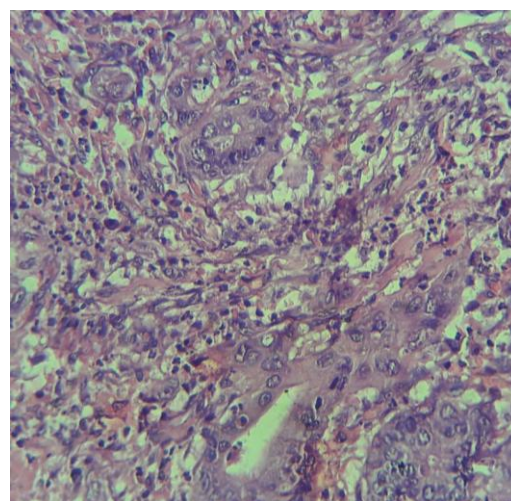
A retrospective study was done from January 2015 to December 2016 in the department of pathology of IGIMS, Patna. All specimens of cholecystectomy received during the study period were included in the study. A total number of 782 cases of cholecystectomy were retrieved. Patient's personal data, clinical information and histopathological findings were recorded. All the sections were reviewed and further sectioning was done wherever needed. Exclusion criteria included preoperative suspicion of malignancy before cholecystectomy.

### Results

A total of 782 cholecystectomies were done for symptomatic gall bladder disease during the study period. Of these 9 were positive for carcinoma on histopathological examination. Incidence of incidental carcinoma among all the routine cholecystectomies coming for histopathological

examination was 1.15%. The age of patients at diagnosis ranged from 29 to 80 years. 2 cases were males and 7 were females with male:female ratio of 1:3.5. Of these 9 carcinoma cases 6 were associated with gall stones. The most common clinical complaints were pain in right hypochondrium, nausea and vomiting. On ultrasonography 3 cases showed thickened wall of gall bladder. 2 cases were suspected intraoperatively and extended cholecystectomy was performed for these with removal of wedge of liver and enlarged lymph nodes. Gross features included thickened wall, ulcerated mucosa, small polypoidal elevation and nodular formation in different Gall Bladder specimens. Microscopically 8 were diagnosed as adenocarcinoma, two of which showed papillary pattern. There was one case of adenosquamous carcinoma. 5 cases were stage pT1bNxMx, 2 cases were stage pT2NxMx and 2 cases were stage pT3NxMx. None of the cases had distant metastasis or involvement of the regional lymph nodes histologically.

Of the remaining 773 specimens, distribution of cases was as follows: Chronic cholecystitis with Cholelithiasis – 590 (75.4%), Chronic cholecystitis – 99 (12.7%), Chronic cholecystitis with cholesterosis- 36 (4.6%), Acute on chronic cholecystitis - 20 (2.5%), Xanthogranulomatous cholecystitis – 27(3.5%), Adenoma – 1 (0.1%).



**Figure 1:** Microsection showing adenocarcinoma of gall bladder. (H&E stain, × 400)

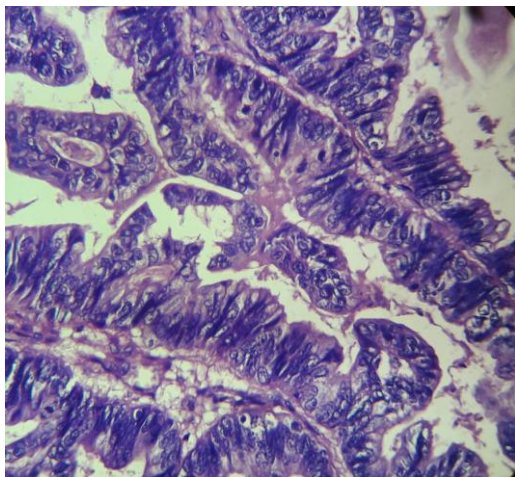


Figure 2: Microsection showing papillary adenocarcinoma of gall bladder. (H&E stain,  $\times 400$ )

### Discussion

GBC is the most frequent carcinoma of the extra hepatic biliary tract. Symptoms are non-specific and the diagnosis is often made at an advanced stage. In our study 782 patients underwent cholecystectomy and incidental GBC was diagnosed histopathologically in 9 cases. The incidence of IGBC was 1.15. In published literature, incidence of IGBC varies from 0.35% to 2%.<sup>(12)</sup> The most important risk factor for GBC is gallstones, with an 8.3 times higher risk than general population.<sup>(13)</sup> Associated cholelithiasis was found in 75% to 98% of incidental GBC.<sup>(14)</sup> Larger stones predispose a greater risk, with stones  $>3$  cm having 9.2–10.1 times higher risk than stones  $<1$  cm.<sup>(1)</sup> This is attributable to greater local epithelial irritation. In literature right upper quadrant pain is reported as the most common symptom (54–83%), followed by jaundice (10–46%), nausea and vomiting (15–43%), anorexia (4–41%), and weight loss (10–39%).<sup>(1)</sup> All our cases presented with pain in the right upper quadrant, nausea and vomiting. In our study 8 cases were adenocarcinoma and one was adenosquamous carcinoma. Adenocarcinoma is the most common histologic type, accounting for 98% of all gallbladder tumours. Other variants include papillary, mucinous, squamous, and adenosquamous carcinoma.<sup>(15)</sup> Rare types include carcinosarcoma, small cell carcinoma, lymphoma,

signet ring cell-type tumours, and metastases.<sup>(16)</sup> Histological subtype of GBC is an important prognostic factor. Papillary carcinoma has the best prognosis, whereas squamous and adenosquamous carcinomas have poorer prognosis. Small cell carcinoma, though very rare, metastasizes early and death often occurs shortly after diagnosis.<sup>(17)</sup> In our study, 5 cases were stage pT1bNxMx, 2 cases were stage pT2NxMx and 2 cases were stage pT3NxMx. The treatment to GBC depends on the stages of tumor. The extent of surgery is depends on depth of invasion (T Stage). Cholecystectomy is done for pT1a tumors, whereas for pT1b tumors cholecystectomy with lymph node dissection is performed. For pT2 and more advanced tumors, liver resection with GB bed resection and lymph node dissection are recommended. Most GBC are diagnosed at an advanced stages and show poor prognosis with a five year survival rate of less than 5%.<sup>(18)</sup> Incidental GBC are usually detected at an early stage and shows best prognosis.<sup>(19)</sup>

### Conclusion

Routine histopathological examination of all cholecystectomy specimens is recommended to rule out IGBC. IGBC are mostly detected at an early stage and thus has better prognosis. Eradication of gallstones remains the ideal target for the prevention of gallbladder cancer as they have a well-described association are easily detectable by ultrasound. In this context, the role of prophylactic cholecystectomy in asymptomatic patients is debatable.

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