

**Incidental gallbladder carcinoma – A retrospective study.**

<sup>1</sup>Dr. Papu Sakachep, Senior Resident, Assam Medical College and Hospital, Dibrugarh, Assam.

<sup>2</sup>Dr. Zara Latif, Assistant Professor, Saveetha Medical College, Chennai, Tamil Nadu.

<sup>3</sup>Dr. Basob Jyoti Hazarika, Assistant Professor, Nalbari Medical College, Nalbari, Assam.

<sup>4</sup>Dr. Diganta Borgohain, Associate Professor, Assam Medical College and Hospital, Dibrugarh, Assam.

**Corresponding Author:** Dr. Papu Sakachep, Senior Resident, Assam Medical College and Hospital, Dibrugarh, Assam.

**How to citation this article:** Dr. Papu Sakachep, Dr. Zara Latif, Dr. Basob Jyoti Hazarika, Dr. Diganta Borgohain, “Incidental gallbladder carcinoma – A retrospective study”, IJMACR- March - 2023, Volume – 6, Issue - 2, P. No. 542 – 546.

**Open Access Article:** © 2023, Dr. Papu Sakachep, et al. This is an open access journal and article distributed under the terms of the creative commons attribution license (<http://creativecommons.org/licenses/by/4.0>). Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**Type of Publication:** Original Research Article

**Conflicts of Interest:** Nil

**Abstract**

**Background:** Gallstone disease is a common surgical problem in all over the world. It is likely for finding gallbladder tumours incidentally during surgery done for stones or biliary tract diseases.

Our study aim is to find out the frequency of incidental primary carcinoma, detected during routine histological examination of gall bladder specimen as well as to assess the need of his to patho logical examination of chole cystectomy specimens.

**Method:** We retrospectively reviewed histopathological records of total 1300 patients who underwent cholecystectomy for hepatobiliary disease conducted in General Surgery department of Assam Medical College & Hospital, Dibrugarh, Assam during a period of 3 years from June 2019 to May 2022.

**Result:** Out of the 1300 cholecystectomy specimens retrieved, diagnosis of IGBC was rendered in sixteen

cases (1. 23%). Mean age of the patient was 54.6 years with a female preponderance with male to female ratio of 1: 3.

All primary malignant lesions were adenocarcinoma (14/16, 87.5%) except two which was squamous cell carcinoma. Most adeno carcinoma were well differentiated (13/14, 93.3%).

**Conclusion:** Our study emphasizes routine his to patho logical examination for all cholecystectomy performed for a common condition like gallstone disease, with special attention to T staging, is critical in diagnosing the incidental malignancies as well as for further managing the cases.

**Keywords:** Gallstone disease, incidental gall bladder carcinoma, malignancy, cholecystectomy.

**Introduction**

Incidental carcinoma of the gall bladder includes an incidental finding of carcinoma in his to patho logical

examination of the gallbladder specimen sent after cholecystectomy performed for benign gallbladder disease or removed during other abdominal surgeries.<sup>1</sup>

Gall bladder malignancy is a lethal disease and is the fifth commonest malignancy in the gastro intestinal tract.<sup>2</sup>

Clinical presentation of gallbladder malignancy and benign gallbladder disease is almost similar and most of the times it is masked by chronic cholecystitis.<sup>3</sup>

GBC is notable for its marked ethnic and geographical variation and has a very high incidence in Chile, India, and Japan. In India, Gallbladder carcinoma is most prevalent in the northern and north-eastern states of Uttar Pradesh, Bihar, Orissa, West Bengal and Assam. It is twice more common in women than in men and is the commonest digestive cancer in women in northern India.<sup>4</sup>

It is likely for finding gallbladder tumours incidentally during surgery done for stones or biliary tract diseases.<sup>5</sup> Patients with IGBC have a better prognosis than patients with GBC already known preoperatively.<sup>6,7</sup>

If IGBC is detected postoperatively by the pathologist after simple cholecystectomy, radical re-resection in cases of T2 tumours and more advanced stages is recommended.<sup>8</sup>

This study aims to establish the frequency of incidental carcinoma in routine cholecystectomy specimens. Further, we would like to assess whether routine histological examination of every cholecystectomy specimen is justifiable or not.

**Materials and methods**

We retrospectively reviewed histopathological records of total 1300 patients who underwent cholecystectomy for hepatobiliary disease conducted in General Surgery department Assam Medical College & Hospital, Dibru

garh, Assam during a period of 3 years from June 2019 to May 2022. Gross findings and histological diagnosis, based on routine examination of H and E-stained slides, were noted from the histopathology record book of the Pathology department.

Clinical records regarding clinical presentation, investigation mainly USG finding, pre operative diagnosis and intra operative findings were retrieved from MRD records (Tickets and OT notes). The AJCC tumour staging system based on TNM (tumour, node, metastasis) classification was used for the staging of gallbladder carcinoma.

The AJCC Cancer Staging Manual, 8th edition: TNM staging.

T Category	T Criteria
------------	------------

TX	Primary tumour cannot be assessed
T0	No evidence of primary tumor
Tis	Carcinoma in situ
T1	Tumor invades the lamina propria or muscular layer
T1a	Tumor invades the lamina propria
T1b	Tumor invades the muscular layer
T2	Tumor invades the perimuscular connective tissue on the peritoneal side, without involvement of the serosa (visceral peritoneum) Or tumor invades the perimuscular connective tissue on the hepatic side, with no extension into the liver
T2a	Tumor invades the perimuscular connective tissue on the peritoneal side, without involvement of the serosa (visceral peritoneum)
T2b	Tumor invades the perimuscular connective tissue on the hepatic side, with no extension into the liver
T3	Tumor perforates the serosa (visceral peritoneum) and/ or directly invades the liver and/or one other adjacent organ or structure, such as the stomach, duodenum, colon, pancreas, omentum, or extrahepatic bile ducts
T4	Tumor invades the main portal vein or hepatic artery or invades two or more extrahepatic organs or structures

N category	N criteria
NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastasis
N1	Metastases to one to three regional lymph nodes
N2	Metastases to four or more regional lymph nodes

M category	M criteria
M0	No distant metastasis
M1	Distant metastasis

**Results**

Total 1300 Cholecystectomies were performed during the period of 3 years (June 2019 to May 2022. Out of the 1300 chole cystectomy specimens retrieved, diagnosis of IGBC was rendered in sixteen cases (1. 23 %). Mean patient age was 54.6 years with a female pre ponderance with male to female ratio of 1:3.

In majority of cases of IGBC, it was found to be associated with chronic calculus chole cystitis, frequently in association with adeno myosis.

Others in minority included chronic cholecystitis with acute exacerbation, porcelain gallbladder, empyema gangrene ous cholecystitis, acute cholecystitis and gall bladder polyp.

According to the clinical records, cholecystectomies were performed for symptomatic benign gallbladder disease. Pain in the right upper quadrant with or without nausea and vomiting, fever, jaundice or palpable gall bladder mass was the common signs and symptoms shown in figure 1. Of 16 proven malignant cases, pre operative diagnosis of malignancy was not suspected in any of the cases. Intra operatively, obvious growth was observed in 4 cases, raising high index of clinical suspicion of malignancy.

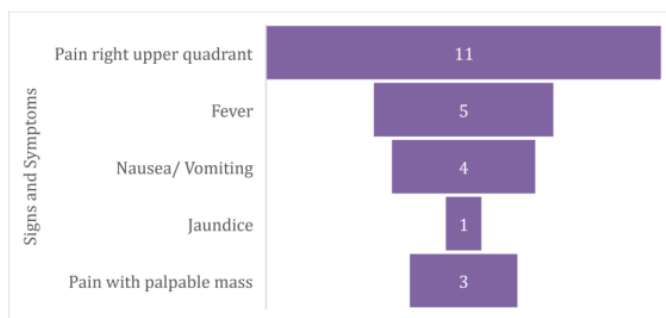


Figure 1: Showing signs and symptoms of IGBC

All primary malignant lesions were adenocarcinoma (14/ 16, 87. 5 %) except two which was squamous cell carcinoma. Most adeno carcinoma were well differentiated (13/14, 93.3%). At the time of diagnosis primary

carcinoma of gallbladder out of 16, 4 were at TNM stage Tis, 7 were at T1, 2 were at T2 and 3 were at T3 stage as shown in figure 2.

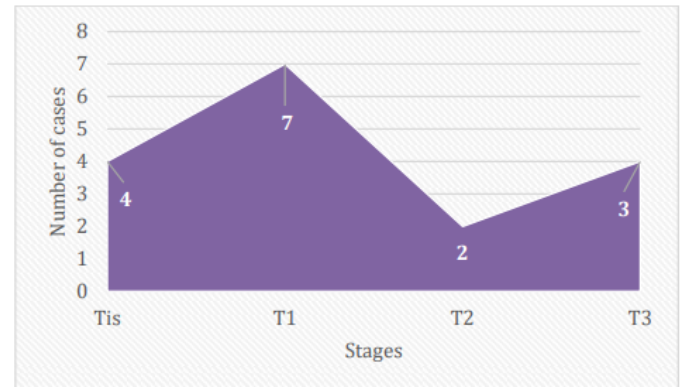


Figure 2: Showing T stages of IGBC

Since 11 out of 16 cases were Tis or T1 lesion, standard cholecystectomy was adequate. Whereas 5 out of 16 cases needed re - exploration, T2 cases underwent wide local excision of the liver and T3 underwent Segment V and IVb segmentectomy followed by Adjuvant Chemotherapy combination of Gemcitabine and Cisplatin for 6 cycles post-operatively. Out of 16, 4 cases who underwent laparoscopic chole cystectomy for benign gall bladder diseases after diagnosis of IGBC have to undergo epigastric port track excision.

**Discussion**

Gallbladder malignancy is a rare entity, however, is common in the gastrointestinal tract. Most are diagnosed at advanced stage with poor prognosis having 5 years survival rate of less than 5.0%.<sup>9</sup> Our study revealed the incidence of IGBC to be 1.3%. Different studies<sup>3,10,11</sup> have reported incidences ranging from 0.17% to 1.6%. Yadav et al<sup>11</sup> showed incidence rate of 1.26% were diagnosed as cases of IGBC with female predominance with a male to female ratio of 1:7. Difference in incidence rate among various studies might be due to exclusion of inoperable GB malignancy in some and

variation in prevalence of gallstone disease in different ethnic group, race and regions.

Gallbladder malignancies were commonly seen in 7th decade of life with mean age at presentation being 56.25yrs and more commonly encountered in females (79.2%). Similar findings were encountered in studies by Aatur et al<sup>3</sup>, Hsieh et al<sup>11</sup> and Tantia et al.<sup>13</sup> Gallstones were associated in 81.25% of GB malignancies. Chronic calculus cholecystitis is a well-known risk factor for the development of gallbladder carcinoma. According to Daphna et al<sup>14</sup>, gallstones are present in 70.0- 92.0% of affected patients.

Studies	No. of cholecystectomy	No. of IGBC	Incidence rate
R Shrestha et al <sup>1</sup>	570	9	1.4 %
Morera et al <sup>15</sup>	372	4	1.1%
Amanullah et al <sup>16</sup>	428	8	1.9%
Mittal et al <sup>17</sup>	1305	13	0.9%
Shimizu T et al <sup>18</sup>	1195	10	0.83%
Ferrarese A et al <sup>19</sup>	508	7	1.38%

Table 1: Sowing the incidence of IGBC in different studies.

Gallstones cause chronic irritation and inflammation of the gallbladder, which leads to mucosal dysplasia and subsequent carcinoma that takes a long duration for promotion of tumour proliferation and hence the occurrence of malignancy in the elderly age group.

### Conclusion

Gallbladder carcinoma are known for its aggressive behaviour and poor prognosis. Although the incidence of IGBC is low, the 5 years survival is better than that of GBC. Therefore, it is highly recommended to subject each and every cholecystectomy specimen for HPE. We conclude that the histopathological examination of the specimens, with special attention to T staging, is critical in diagnosing the incidental malignancies as well as for further managing the cases.

### Reference

1. Shrestha, R., M. Tiwari, S. K. Ranabhat, G. Aryal, S. K. Rauniyar, and H. G. Shrestha. "Incidental gallbladder carcinoma: value of routine histological examination of cholecystectomy specimens." *Nepal Med Coll J* 12, no. 2 (2010): 90-4.
2. Scott HS. The gallbladder and extrahepatic biliary tree. In: Stacey EM, Darryl C, Joel KG, Harold AB, Victor ER, Mark HS. *Sternberg's Diagnostic surgical pathology*. 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2004. p. 1783.
3. Aatur R, Syed MA, Nadeem K, Attaullah AA, Muzaffar US. Frequency of Carcinoma Gallbladder in patients undergoing surgery for chronic Cholecystitis with Cholelithiasis. *J Med Sci Jan* 2006; 14: 26-9.
4. Dr Kaur T, V S. Indian Council of Medical Research Consensus Document for Management. 2014.
5. Murshid KR. Asymptomatic gallstones: Should we operate? *Saudi J Gastroenterol* 2007; 13: 57-69.
6. Goetze T, Paolucci V (2006) Does laparoscopy worsen the prognosis for incidental gallbladder cancer? *Surg Endosc* 20:286–293
7. Steinert R, Nestler G, Sagynaliev E et al (2006) Laparoscopic cholecystectomy and gall bladder cancer. *J Surg Oncol* 93:682–689.
8. Lammert F, Neu brand MW, Bittner R, Feussner H, Greiner L, Hagen muller F, Kiehne KH, Ludwig K, Neuhaus H, Paumgartner G, Riemann JF, Sauer Bruch T; Deutschen Gesellschaft für Verdauungs- und Stoffwech selkran kheiten; Deutschen Gesellschaft für Viszeral chirurgie zur Diagnostik und Behan lung von Gal- lensteinen (2007) [S3 guidelines for diagnosis and treatment of gallstones. German Society for Digestive and Metabolic Diseases and German Society for Surgery

of the Alimentary Tract]. *Z Gastro enterol* 45 (9): 971 - 1001.

9. Eric CH, Lau WY. Gall bladder cancer, a comprehensive review. *The Surgeon* 2008; 10-19.

10. Bazoua G, Hamza N, Lazim T. Do we need his tology for a normal-looking gall bladder? *Surgeon* 2003; 1: 233-5.

11. Hsieh JP, Tsao WL, Tang HS, Hsu CT, Su KL. Primary carcinoma of the gallbladder: a review of 10 years of experience at Tri-Service General Hospital. *Zhonghua Yi Sue Za Zhi (Taipei)* 1993; 51: 193-9

12. Yadav R, Sagar M, Kumar S, Maurya SK. Incidental Gallbladder Carcinoma in North Indian Population: Importance of Routine Histopathological Examination of All Benign Gallbladder Specimens. *Cureus*. 2021 Jul 4;13 (7): e16 156. doi: 10. 7759/ Cureus. 16156. PMID: 34367768; PMCID: PMC 832 98 93.

13. Tantia O, Jain M, Khanna S, Sen B. Incidental carcinoma gall bladder during laparoscopic cholecystectomy for symptomatic gallstone disease. *Surg Endosc* 2008; [Epub ahead of print].

14. Daphna W, Mehrdad H, Noa BJ, Sandban and AH. Incidental finding of gallbladder carcinoma. *Israel Med Assoc J* 2002; 4: 334-6.

15. Morera Ocon FJ, Ballestín Vicente J, Ripoll Orts F et al. Gall blader cancer in a regional hospital. *Cir Esp* 2009; 86: 219-23.

16. Amanullah MK, Rizwn AK, Shahid S, Veena M. Occult carcinoma of gallbladder: Incidence and role of simple cholecystectomy. *JK- Practitioner* 2007; 14: 22-3.

17. Mittal R, Jesudason MR, Nayak S. Selective his to patho logy in chole cystectomy for gallstone disease. *Indian J Gastroenterol* 2010; 29: 26-30.

18. Shimizu T, Arima Y, Yokomuro S, Yoshida H, Mamada Y, Nomura T, et al. Incidental Gall bladder Cancer Diagnosed during and after Laparoscopic Cholecystectomy. *J Nippon Med Sch.* 2006;73(3):136–40.

19. Ferrarese AG, Solej M, Enrico S, Falcone A, Catalano S, Pozzi G, et al. Diagnosis of incidental gall bladder cancer after laparoscopic cholecystectomy: our experience