INCIDENTAL GALLBLADDER CARCINOMA: MANAGEMENT AND OUTCOME AT A TERTIARY CARE CENTRE OF NORTH-EAST INDIA

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Abstract

Introduction: Gallbladder carcinoma is highly malignant tumor with a poor prognosis. Incidental gallbladder carcinoma (IGBC) is an incidental finding of carcinoma diagnosed on histopathological examination of gallbladder specimen removed for benign gallbladder disease. **Aims and objectives:** To see the management and outcome of surgery on survival of the patients of incidental carcinoma gallbladder in a period of 2yrs in Assam Medical College and Hospital. **Materials and method**: A retrospective study was conducted in the department of General Surgery, Assam Medical College and Hospital, Dibrugarh. Both open and laparoscopic cholecystectomy specimen with a clinical diagnosis of benign gallbladder disease were included in the study from July 2022 to June 2024. Gallbladder wall more than 3mm is considered to be thickened. Gallbladder carcinoma diagnosed intra-operatively are excluded. **Results**: Total 26 cases of incidental carcinoma gallbladder were found in the department over a period of 2 yrs. For T1b and above patients, re-resection improved disease specific survival. **Discussion**: Nonspecific clinical presentation and diagnostic challenge in early stage for radiologists encompasses difficulty in preoperative diagnosis. We found incidence of IGBC in our study to be 1.6%. The prognosis of gallbladder cancer is largely affected by tumor stage and treatment.

Keywords: Incidental gallbladder carcinoma, Extended cholecystectomy

Introduction

- Gall bladder cancer is the 5th most common cancer of GI tract and the most common cancer of the biliary tract.
- According to GLOBOCAN 2018 data, being the most common biliary tract malignancy, it accounts for almost 1.7% of all cancer mortalities reflecting the poor prognosis associated with this diagnosis.

- Incidental gall bladder carcinoma (IGBC) is an incidental finding of carcinoma diagnosed on histopathological examination of gall bladder specimen removed for benign gall bladder disease.
- IGBC found in (0.2- 2.9) % of all cholecystectomies done.[1]
- IGBC represents (27-41) % of all GB carcinoma.[1]
- Gallstones represent the most important risk factor for GB carcinoma development. Individual with GB stones will develop cancer in >0.5%.
- Almost (50-70) % GB cancers are found incidentally on pathologic examination.[2,3,4,5]

Aim

To see the management and outcome of surgery on survival of the patients of incidental carcinoma of gall bladder

Materials and Methods

A prospective observational study was conducted in the department of general surgery, Assam Medical College and Hospital, Assam from July 2022 to June 2024.

Inclusion criteria

Both open and laparoscopic cholecystectomy specimen with a clinical diagnosis of benign gall bladder disease was included, in any age group.

Exclusion criteria

a) Patient unwilling to give consent for the study.

b) Patient diagnosed as a case of carcinoma gall bladder intra-operatively.

Methodology

- Detailed history and informed consent taken.
- Thorough general and systemic examination done.
- Investigations: Complete metastatic work up done.
- HRCT thorax, abdomen and pelvis routinely done to determine resectability, extent of the disease, distant metastasis, lymph node involvement etc.

- MRI is better than CT scan for detecting metastatic lymph nodes
- Tumor markers CEA and CA-19-9: usually not available from pre-operative assessment.
- Review of histopathology: The histopathology report should mention the depth of GB wall invasion, lymph nodes, tumor size, grade of differentiation, resected margins, lympho-vascular invasion and perineural infiltration. These factors are found to have impact on oncological outcome.[6,7]
- After proper pre-operative staging, further management is planned. Stage 1,2 & selected stage 3A cases taken for revision surgery; extended cholecystectomy.

Stage 3, stage 4A & 4B: Peri-operative treatment

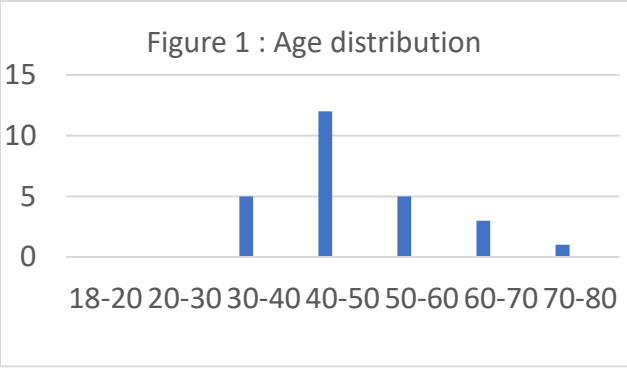
- Adjuvant chemotherapy given according to stage
- Data obtained was analyzed. Patients were followed up after surgery.

Observation and results

Total 26 cases of incidental carcinoma gall bladder were found from the 1625 patients who underwent cholecystectomy during the study period in AMCH Surgery department. Incidence of incidental carcinoma of gall bladder in our study is 1.6%.

Demographic profile:

In our study, majority of the cases are seen among females (60%). Most common age group involved was between (40-50) years.



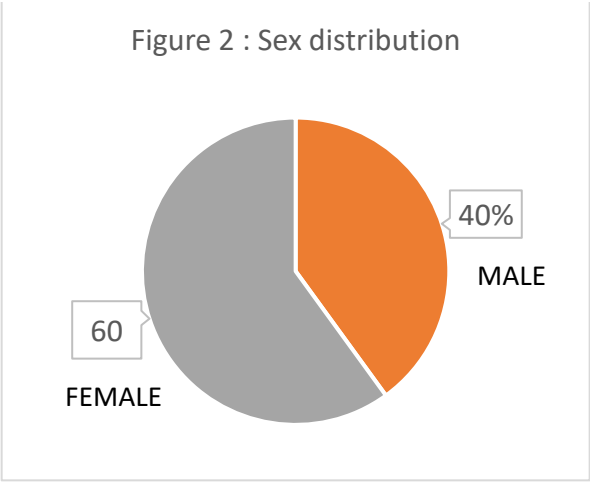


TABLE 1: Histopathological examination of gallbladder specimen

EXTENT OF TUMOR INVASION ON HPE OF SPECIMEN	NO. OF CASES (n=26)	PERCENTAGE (%)
pT1a	4	15.38
pT1b	9	34.61
pT2	11	42.30
pT3	2	7.69

In this study, 4 cases were pathologically T1a stage i.e. only lamina propria was involved, whereas maximum cases had involvement of peri-muscular connective tissue (pT2).

On HRCT and MRI report, 42% cases were limited to serosa. 23% patients had crossed serosa but without any lymph node involvement. In 34% cases tumor invaded serosa and had lymph node metastases along cystic duct and common bile duct.

TABLE 2: Extent of invasion on imaging

EXTENT OF TUMOR INVASION ON HRCT AND MRI	NO. OF CASES (n=26)	PERCENTAGE (%)
No extension beyond serosa to liver, no lymph node involvement	11	42.30
Tumor perforates serosa but no lymph node metastasis	6	23.07
Tumor perforates serosa with metastasis to nodes along cystic duct and common bile duct	9	34.61

The outcome of curative re-resection depends on several factors like:

a) Time of surgery
b) Extent of liver involvement
c) Bile duct involvement
d) Lymphadenopathy
e) Port site excision
f) Minimally invasive techniques

In our study, 3 cases didn't have re-resection surgery as the disease was confined to lamina propria only. Simple cholecystectomy is enough in these cases. Extended cholecystectomy with lymphadenectomy was done in 53% cases. No bile duct or port site excision done in this study. Palliative procedure performed in 7% cases. In 26% cases, surgical intervention was not possible.

TABLE 3: Surgical management

SURGICAL PROCEDURES PERFORMED	NO. OF CASES (n=26)	PERCENTAGE (%)

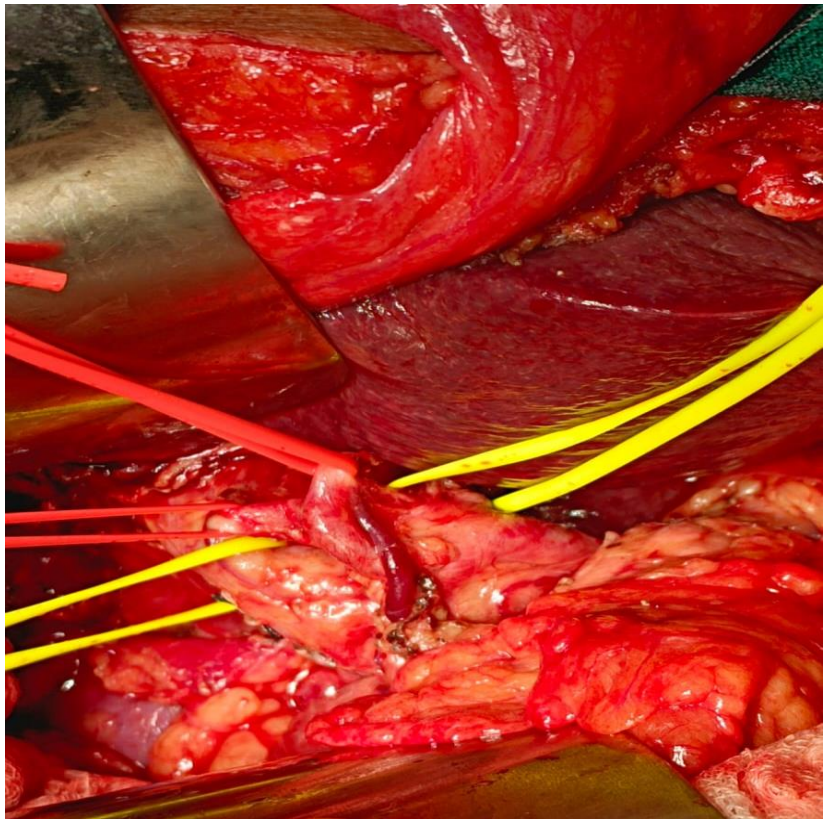
Simple cholecystectomy	3	11.53
Extended cholecystectomy with lymphadenectomy	14	53.84
Bile duct excision	None	-
Port site excision	None	-
Palliative procedure: Roux-en-Y hepaticojejunostomy	2	7.69
Surgery not possible due to metastases/ general condition of the patient	7	26.92

Survival was significantly improved after curative resection in cases of T2 and T3 incidental GB carcinoma. Upfront surgery with non-anatomical resection with 2cm liver margin with lymphadnectomy was done.

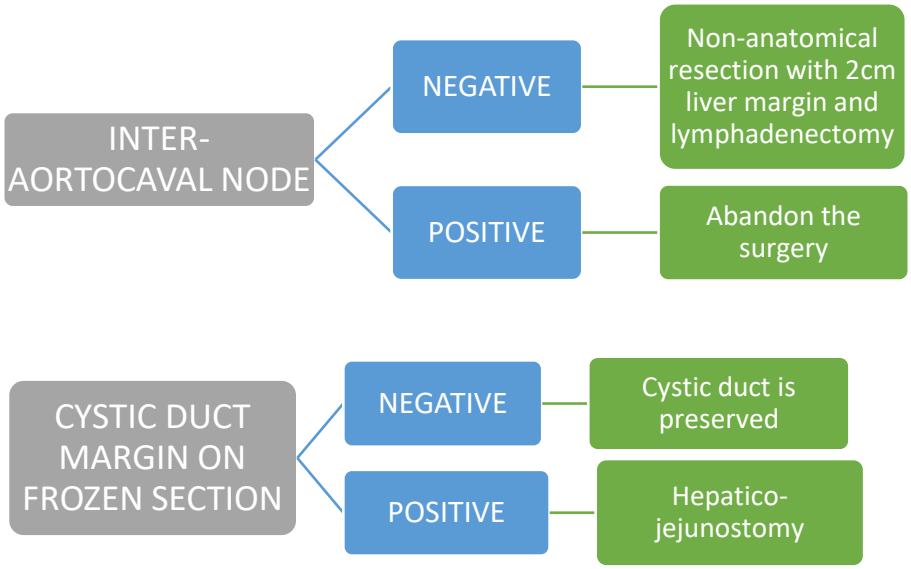
It is shown in several studies that a minimum of 6 lymph nodes are required for correct staging of a case of IGBC. Extended lymphadenectomy involving periaortic, pericaval, celiac lymph nodes doesn't provide additional benefit.[8,9]

Port site excision not done in our study as it is not routinely recommended and studies have shown similar overall survival and disease-free recurrence rates.[10,11]

Fig: Intra-operative image of extended cholecystectomy.



- Diagnostic laparoscopy is not routinely performed.
- Laparotomy was done with right sub-costal incision. Inter-aortocaval fossa is reached which is limited by inferior vena cava and inferior border of renal vein. Routinely we do frozen section for inter-aortocaval node(16b1) and cystic duct.



Discussion

- In our study, the maximum peak is between (40-50) yrs. with median age being 47yrs.
- Females are more common. Male-female ratio is 1: 1.5
- Proper pre-operative staging is done to plan for surgery.
- Routinely we perform inter-aortocaval node, cystic node frozen section biopsy, based on which we proceed.
- Extended cholecystectomy with lymphadenectomy was done for tumor T1b or above.
- For GB carcinoma with T1a on pathology, no further surgery is required as the initial cholecystectomy is frequently curative.
- The excision of port sites from the original laparoscopic cholecystectomy is not indicated routinely, though previous groups have argued for the routine excision of port sites during re-resection[12]. Several studies have shown that there is no overall survival benefit and it does not lower distant disease recurrence.
- Adjuvant chemotherapy regimen Nab-Paclitaxel plus carboplatin is given to all patients undergoing extended cholecystectomy. Role of adjuvant chemotherapy needs to be studied further. The BILCAP (Biliary CAPecitabine) randomized controlled trial in 447 patients with resected biliary tract malignancies reported that 6 months of adjuvant Capecitabine improved overall survival compared to placebo.

Neo-adjuvant chemotherapy:

- Patients with pre-operatively determined locally advanced disease (T3-4, N2) should be enrolled for neo-adjuvant chemotherapy. But, in our study we have not given neoadjuvant chemotherapy, as patients come with advanced disease and there is poor response to neo-adjuvant chemotherapy.

TMH criteria (for Locally advanced/Borderline Resectable GBC used as an indication for Neoadjuvant Chemotherapy)

Tumour (T3–T4 tumours)	▪ Contiguous liver involvement > 2 cm ▪ Involvement of bile duct causing obstructive jaundice (Type I/II block on MRCP/ERCP/PTBD) ▪ Radiological/Endoscopic involvement of antropyloric region of stomach, duodenum, hepatic flexure of colon or small intestine
Node (N1 station)	Radiological suspicion of lymph node involvement N1 ▪ Hepatic artery (Station 8), ▪ Hepatoduodenal ligament (Station12), ▪ Retro pancreatic/retroduodenal (Station 13) Size > 1 cm in short axis, round in shape, and heterogenous enhancement on CT/PET scan.
Vascular (T4 tumours)	Impingement/involvement (<180-degree angle) of one or more of the following blood vessels: ▪ Common Hepatic Artery and Right & Left Hepatic artery ▪ Main Portal vein and Right & Left Portal vein
For incidental GBC	▪ Residual/Recurrent mass in GB fossa/liver bed ▪ N1 nodes as per nodal criteria. ▪ Involvement of bile duct causing OJ (Type I/II Block)

Conclusion

- GB carcinoma is a rare but fatal disease.
- Surgical intervention is the mainstay of treatment.
- The most pivotal and important step is accurate staging of incidental carcinoma GB before re-resection surgery.
- Controversies exist regarding the timing of re-surgery and port site excision. Overall, the time interval from index cholecystectomy to resection is reported with considerable variation across studies, with a median usually at (2-3) months and range between 1 to 11 months.[13,14,15]
- For T1b lesions, a wedge resection of (2-3) cm margins had superior survival compared to radical re-resection.
- A multimodality approach with revision surgery and adjuvant chemotherapy yields better outcome.

Conflict of interest: There is no conflict to disclose

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