

Incidence of Incidental Gall Bladder Carcinoma in Cases of Routine Cholecystectomy – A One Year Prospective Study in a Tertiary Care Hospital.

Rajesh Kumar Dora¹, Nitya Nutan Misra², Manoj Ku. Barik²

¹Assistant Professor, Department of Surgery, S.C.B. Medical College, Cuttack.

²Junior Resident, Department of Surgery, S.C.B. Medical College, Cuttack.

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ABSTRACT

Background: Gall stones, gall bladder polyps, porcelain gall bladder leads to carcinoma. Malignancy is detected with a history of gall stone disease and patient presents with non-specific symptoms such as abdominal discomfort, right upper quadrant pain, nausea, vomiting, weight loss, anorexia and jaundice at a later stage. The aim of the study is to find the incidence of gall bladder carcinoma in cases of routine cholecystectomy. **Methods:** 100 cases were selected for this study. Open cholecystectomy / laparoscopy were done as routine cases and sent for histo-pathological study. The patients were clinically examined. Clinically symptoms, USG findings were corroborated. The follow up period was one year. The age of presentation, clinical examination, USG findings, was documented. **Results:** Gall bladder carcinoma is a rare disease and 7 times more common in patients with gall stones. **Conclusion:** Predisposing conditions like gall bladder polyps more than 2 cms, porcelain gall bladder may tend to develop malignancy. Morbidity and mortality is associated with this disease due to early spread to liver, lymph node spread and jaundice.

Keywords: Cholecystectomy, gall bladder carcinoma.

INTRODUCTION

Carcinoma gall bladder, the most common biliary malignancy and the 5th most common GI malignancy in the west is seen predominantly in the 7th and 8th decades of life. It's an aggressive tumour with poor prognosis except when incidentally diagnosed at an early stage after cholecystectomy for cholelithiasis.

Review of literature suggests only 10% cases are confined to the gall bladder wall, 5% have direct invasion into hepatic parenchyma, 45% have lymph node metastases and 20% have distant extrahepatic metastases at the time of diagnosis.^[1]

Clinical manifestations of gall bladder carcinomas are generally indistinguishable from those of benign gall bladder diseases such as cholecystitis or cholelithiasis. Therefore, gall bladder carcinomas are diagnosed during or after surgery performed for gall bladder stones or benign gall bladder diseases.

It's occurrence in random autopsy series is around 0.4% but approximately 1% of the patients undergoing cholecystectomy for gall stone diseases

are found incidentally to have gall bladder cancer.^[2] This study is done to find the incidence of incidental gall bladder cancer in routine open/laparoscopic cholecystectomy done for benign indications at S.C.B. Medical College and Hospital, Cuttack, Odisha.

Routine cholecystectomy is usually undertaken for cholelithiasis, trauma, torsion of the gall bladder, empyema gall bladder, diverticulosis, typhoid gall bladder and biliary dyskinesia.

Gall bladder carcinoma is a rare disease with women preponderance. The aetiology appears to be associated with pre-existing gall stone disease suggesting that chronic inflammation plays a role in a manner similar to tumours of the common bile duct. Risk factors include porcelain gall bladder, chronic infection like typhoid and gall bladder polyps.

Cholelithiasis, the most important risk factor for gall bladder carcinoma is 7 times more common in patients with gall stone disease than in those without it.^[3]

69% to 86% of the patients with gall bladder cancer have a personal history of gall stone disease. Larger stones (>3cm) are associated with 10-fold increase risk of developing cancer of the gall bladder with chances being higher in symptomatic cases than in asymptomatic ones.^[4]

Name & Address of Corresponding Author

Dr. Rajesh Kumar Dora,
Assistant Professor,
Department of Surgery
S.C.B. Medical College,
Cuttack, Odisha.

Gall bladder polyps are found in 5% of patients who undergo USG. True adenomatous polyps are found in 0.3% to 0.5% of the population.^[5]

In a series of patients with gall bladder polyps, none were malignant if < 1cm diameter, but 23% of polyps > 1cm diameter were malignant. Polyps > 1.8cm diameter were more likely to contain an advanced stage of cancer.^[6] Cholecystectomy should be performed in these cases through an open approach because laparoscopic perforation in these setting may convert a potentially curable disease into an incurable one.

The incidence of gall bladder cancer is between 7% and 25% in calcified “porcelain” gall bladder.^[7] Hence cholecystectomy should be performed in such cases even if the patient is asymptomatic. Cholecystectomy is also indicated when USG is done for other abdominal conditions and accidentally discovers gall stones.

The presence of abnormal pancreatobiliary duct junction with chronic biliary inflammation has been associated with both choledochal cyst and gall bladder cancer. Patients with choledochal cysts have an increased risk of developing cancer anywhere in the biliary tract, but the incidence is highest in the gall bladder.

Carcinoma of the gall bladder involves the fundus in 60%, body in 30% and neck in 10% of the cases. Because 90% of the cancers originate in the fundus and body of the gall bladder most do not produce symptoms until the disease is advanced. Those that involve the neck of the gall bladder portends a better prognosis because of earlier presentation.^[8]

Non-specific symptoms such as abdominal discomfort, right upper quadrant pain, nausea and vomiting are the common presenting complaints. Weight loss, anorexia, jaundice and abdominal mass appear after the disease has taken a fatal course.

A review of Memorial Sloan Kettering cancer centre experience highlighted the observation that 95% patients suspected of carcinoma gall bladder presenting with jaundice were ultimately noted to harbour unresectable disease.^[9]

Macroscopically, they have been divided into infiltrative (most common), nodular, nodulo-infiltrative, papillary (best prognosis), and papillary-infiltrative. Microscopically adenocarcinoma (98%) are the most common histologic subtypes.^[10] Others include adenosquamous, oat cell carcinoma, sarcoma, carcinoid, lymphoma and melanoma.

Histologic grading is categorised from G1 to G4 with G3 being the most common grade at presentation.

In cases of incidental gall bladder carcinomas, cholecystectomy is performed. For benign diseases, surgeons most commonly come across a Stage 1 carcinoma (cancer within the muscular layer of the gall bladder). In T1a tumors with less likelihood of N1 disease, simple cholecystectomy is curative. In cases of cystic duct margin positivity re-resection to

negative margins is imperative. If necessary common bile duct resection with establishment of biliary enteric continuity should be done. 66% of those presenting after incidental discovery of gall bladder cancer were eligible for re-exploration and of those 17% had no evidence of residual disease.^[11] Extended cholecystectomy consists of cholecystectomy with en bloc resection of a rim of segments of IVB and V, lymphadenectomy of the cystic pericholedochal, periportal and posterior pancreaticoduodenal lymph nodes residing in hepatoduodenal ligament and local aortocaval lymph nodes.

MATERIALS AND METHODS

A prospective observational study conducted with 100 cases was done in the Department of General Surgery, S.C.B Medical College and Hospital, Cuttack from June 2018 to May 2019 with an aim to evaluate the incidence of incidental gall bladder carcinoma in cases of routine cholecystectomy.

Inclusion Criteria

All patients undergoing routine cholecystectomy for cholelithiasis and benign gall bladder diseases were included in this study.

Exclusion Criteria

All patients with pre diagnosed gall bladder carcinomas, gall bladder mass, empyema gall bladder and gall stone associated with obstructive jaundice were excluded from this study. Patients presenting with right upper quadrant pain, jaundice and dyspepsia were subjected to thorough history taking, clinical examination and relevant haematological, radiological and biochemical tests. Patients diagnosed with gall stone disease and other benign biliary diseases that required simple cholecystectomy were subjected to open or laparoscopic cholecystectomy and the excised gall bladder specimen was sent for histopathological study.

Patients with positive histology were called up and managed depending upon the stage of the disease and followed up for a period of one year.

The data was collected and analysed through Statistical data analysis (SPSS 16).

RESULTS

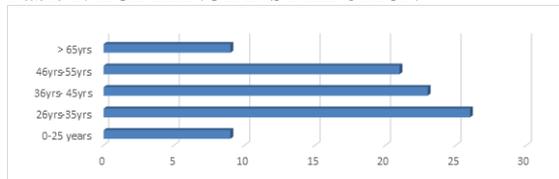
Socio Demographic Characteristics of the Study Population.

Table 1: Age of Presentation

	Minimum age	Maximum age	Mean	SD
Total 100	18	84	43.73	14.548
Male 22	30	84	54.82	12.633
Female 78	18	70	40.60	13.548

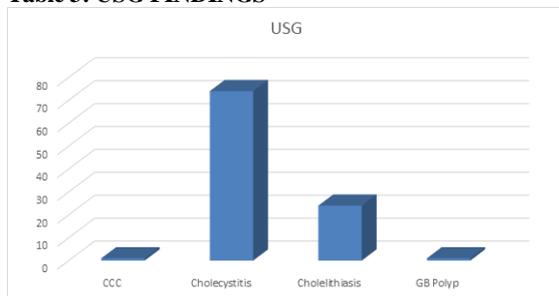
The study shows a female preponderance with 78 females undergoing cholecystectomy in a sample of 100 patients. The minimum age is 18 years and maximum age of presentation is 70 years with a mean of 40.60 and SD 13.548.

Table 2: AGE RANGE DISTRIBUTION



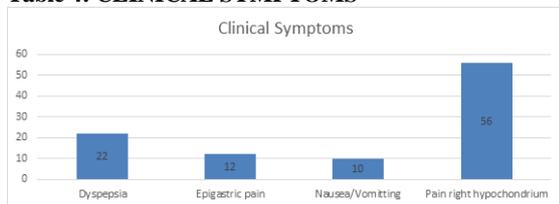
The age group most commonly affected with gall bladder diseases range between 26yrs to 35yrs.

Table 3: USG FINDINGS



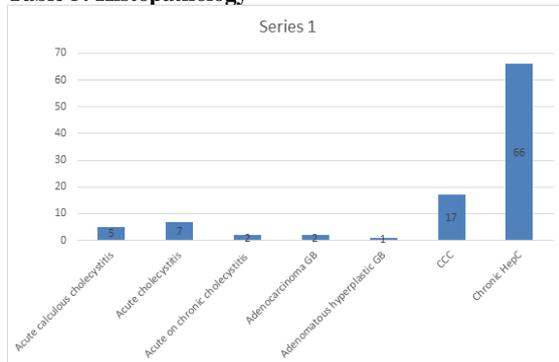
The most common radiological diagnosis is that of cholecystitis among all patients presenting with clinical symptoms of gall bladder diseases.

Table 4: CLINICAL SYMPTOMS



Right hypochondrium pain is the most common presenting symptom among all other symptoms of Gall stonedisease.

Table 5: Histopathology



In this series 100 patients who underwent routine cholecystectomies, 2 patients were found to have adenocarcinomas in the specimens sent for histopathology.

Literature review shows incidence of malignancy (1.87%) in a study (2006) of 428 patients, 8 patients had adenocarcinoma Gall bladder on histopathological study undergoing routine cholecystectomy in J N MedicalCollege, Aligarh, India.^[12]

Another study (2010) was conducted in Safdarjung Hospital and VM Medical College. Among 6414 patients of routine cholecystectomy 83 patients had carcinoma Gall bladder,an incidence of 1.29%.^[13]

A study conducted in 2011 in Manipal Teaching Hospital, Pokhara, Nepal out of 783 patients who under went routine cholecystectomy, 10 patients had gall bladder carcinoma on histopathology hence the incidence is 1.28%.^[14]

In a study (2012), out of 622 patients who underwent routine cholecystectomy 6 patients had neoplastic changes.^[15]

In a similar study in Bangalore (2013) out of 371 patients, 8 patients had carcinomatous changes i.e. an incidence of 2.15%.^[16]

A case series was published in 2014, in which 206 patients were chosen for the study out of whom 6 cases had carcinoma i.e. incidence of 2.91%.^[17]

A study conducted in Uttarakhand, India (2016), 12 patients had carcinoma gall bladder out of 502 cases considered for study,^[18] an incidence of 2.39% .

In a recent study (2017), 7 patients out of 822 patients taken for routine cholecystectomy had developed carcinoma of the gall bladder,^[19] an incidence of 0.85%.

All the outcomes in the studies done in the above centres are quite similar comparable to our study.

DISCUSSION

Gall bladder carcinoma is a very aggressive malignant disease with late symptoms. Hence patients often present in late stage and the disease is associated with poor prognosis with 5-year survival rates reported to be less than 5%.^[20]

A pseudo tumoral condition of the gall bladder called as xanthogranulomatous cholecystitis is also known radiologically to simulate malignancy.

A difficult gall bladder at surgery usually raises the suspicion of cancer. Unusual findings at surgery like a gall bladder mass, dense adhesions of the organs adjacent to the gall bladder and a difficult dissection of the gall bladder from the liver bed are all pointers to the presence of possible malignancy.

After cholecystectomy the entire gall bladder should be submitted for microscopic examination and at least 3 levels are to be obtained from each paraffin block which demonstrated a carcinoma, so as to be certain that the muscularis propria was not involved.

CONCLUSION

Incidence of incidental gall bladder carcinoma in our study is 2%. Gall bladder cancers are said to be the main source of disease progression. However, this may be decreasing due to use of ultrasound scanning for upper abdominal symptoms suggestive of gall bladder disease. Early diagnosis and cholecystectomy may prevent gall bladder malignancy.

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