CLINICAL STUDY OF INCIDENTAL GALL BLADDER MALIGNANCY AFTER ELECTIVE CHOLECYSTECTOMY- A RETROSPECTIVE STUDY

Muddasar Hassan Rather[1], Nazir Ahmad Malik[2], Ishfaq Ahmad Gilkar[3], Shaukat Jeelani[4], Umer Mushtaq[5], Javid Ahmed Peer[6], Younis Bashir[7], Shivani Thakur[8]

[1]Consultant, Department of General Surgery, Government Medical College, Srinagar, University of Kashmir, Jammu and Kashmir.
[2]Consultant, Department of General Surgery, Government Medical College, Srinagar, University of Kashmir, Jammu and Kashmir.
[3]Senior Resident, Department of General Surgery, Government Medical College, Srinagar, University of Kashmir, Jammu and Kashmir.
[4]Head of the Department, Department of General Surgery, Government Medical College, Srinagar, University of Kashmir, Jammu and Kashmir.
[5]Senior Resident, Department of General Surgery, Government Medical College, Srinagar, University of Kashmir, Jammu and Kashmir.
[6]Senior Resident, Department of General Surgery, Government Medical College, Srinagar, University of Kashmir, Jammu and Kashmir.
[7]Junior Resident, Department of General Surgery, Government Medical College, Srinagar, University of Kashmir, Jammu and Kashmir.
[8]Junior Resident, Department of General Surgery, Government Medical College, Srinagar, University of Kashmir, Jammu and Kashmir.

ABSTRACT

BACKGROUND

Carcinoma of gall bladder is not a common entity among the malignancies of gastro intestinal tract, with an overall incidence of 0.3-1.5. Definition of Incidental Gallbladder Cancer (IGBC) is defined as a malignancy detected only on histopathological examination without prior pre-operative or intra-operative suspicion of malignancy.

MATERIALS AND METHODS

This is retrospective study conducted in the department of general surgery of government medical college, Srinagar, where the most commonly performed operation is cholecystectomy mostly laparoscopically. Data of this study was collected from December 2014 to December 2018. Number of patients enrolled in this study was 869 (all electively operated no emergency cholecystectomy was included).

RESULTS

In our study of 869 patients of cholecystectomies, 14 patients were diagnosed with incidental gall bladder cancer on histopathological examination. Mean age of the patients in our study is 60.07 with male to female ratio of 1:2.5. More than 90% of patients in our study presented with abdominal pain followed by weight loss, jaundice and vomiting, mean BMI of 30.14, intraoperative findings of patients with incidental gall bladder malignancy suggests that about half of the patients were having shrunken fibrosed gall bladder and rest gross findings were polypoid mass, difficulty in dissection due to adhesions and thickened gall bladder wall.

CONCLUSION

Performing cholecystectomy should never be the only treatment of gall stones or any other pathology which demands cholecystectomy unless and until the histopathological examination of the specimen is ensured so as to diagnose incidental gall bladder malignancy which is usually missed during peri-operative period.

HOW TO CITE THIS ARTICLE: Rather MH, Malik NA, Gilkar IA, et al. Clinical study of incidental Gall bladder malignancy after elective cholecystectomy. A retrospective study. J. Evid. Based Med. Healthc. 2019; 6(14), 1145-1149. DOI: 10.18410/jebmh/2019/239

Financial or Other, Competing Interest: None.
Submission 10-03-2019, Peer Review 15-03-2019,
Acceptance 01-04-2019, Published 05-04-2019.
Corresponding Author:
Dr. Ishfaq Ahmad Gilkar,
Senior Resident, Department of General Surgery,
Government Medical College, Srinagar,
University of Kashmir, Jammu and Kashmir.
E-mail: drishfaqahmedgilkar@rediffmail.com
DOI: 10.18410/jebmh/2019/239

BACKGROUND

Carcinoma of the Gall bladder is not a common entity among the malignancies of gastro intestinal tract, with an overall incidence of 0.3-1.5.[1-2] Definition of Incidental gallbladder cancer (IGBC) is defined as a malignancy detected only on histopathological examination without prior pre-operative or intra-operative suspicion of malignancy.[3] Incidental diagnosis of gallbladder carcinoma is also becoming more frequent which is due to increasing numbers of laparoscopic cholecystectomies being performed worldwide.[4] The

absence of a serosal layer between gall bladder and the liver, permits the relative early invasion of Gall bladder malignancy into the liver.[5] Gall bladder malignancy also tends to spread both to lymph nodes and blood to the peritoneal surfaces.[6]

Because of its nonspecific presentation of symptoms and signs, gall bladder malignancy tends to go undiagnosed until relatively later stages.[6] One approach for the prevention and treatment of this malignancy is to provide insight regarding various risk factors linked with this disease.[7] One of the most common risk factor associated with this malignancy is Cholelithiasis and is found in approximately 85% of people.[7] The aim of the study was to seek and analyse features and characteristics on preoperative clinical, imaging and intraoperative findings in patients diagnosed as having Incidental gallbladder cancer (IGBC).

MATERIALS AND METHODS

This is retrospective study conducted in the department of general surgery of government medical college Srinagar where the most commonly performed operation is cholecystectomy mostly laparoscopically. Data of this study was collected from December 2014 to December 2018. Number of patients enrolled in this study was 869(all electively operated no emergency cholecystectomy was included). Among these 14 (1.6%) patients were diagnosed with gall bladder malignancy on histopathology their preoperative clinical details, radiological findings and operative notes were reviewed to ascertain any suspicion of malignancy in retrospect. For staging we used the Sixth Edition of AJCC TNM Manual.

RESULTS

Age Distribution

In our study of 869 patients of cholecystectomies 14 patients were diagnosed with incidental gall bladder cancer on histopathological examination. We divided the patients into two groups, and we find out that most of the patients were above the age of 50 years of age. Mean age of the patients in our study is 60.07.

Age Group	Number of Patients
≤ 50 Years	2
> 50 Years	12
Table 1. Showing Age Distribution	

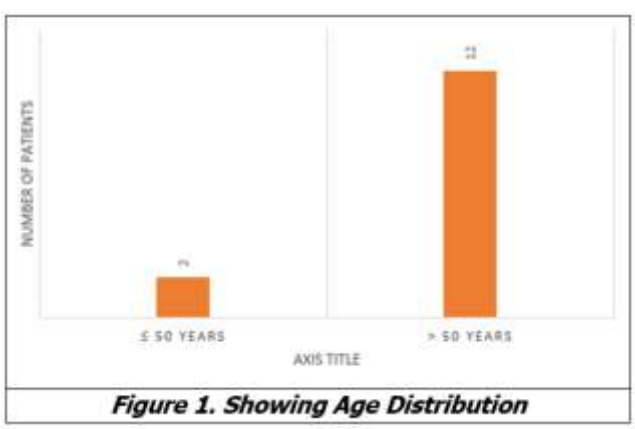

Figure 1. Showing Age Distribution

Sex Distribution

In our study the incidental gall bladder malignancy was encountered in females with male- female ratio of 1:2.5 as shown in table and figure 2.

Category	Number of Males	Number of Females
Sex Distribution	4	10
Table 2. Showing Sex Distribution		

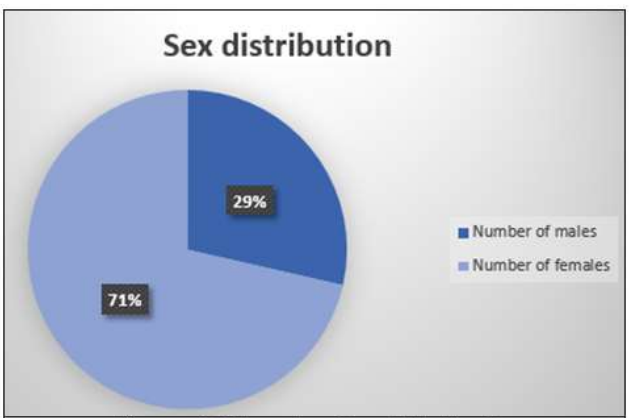

Figure 2. Showing Sex Distribution

Duration of Symptoms

In our study the maximum time period of symptoms attributed to pathology up to surgical procedure is 56 weeks and minimum is 3 weeks. As shown in table and figure 3.

Duration of Symptoms	Number of Patients
0-10 Weeks	1
11-20 Weeks	3
21-30 Weeks	3
31-40 Weeks	2
> 40 Weeks	5
Table 3. Showing Duration of Symptoms	

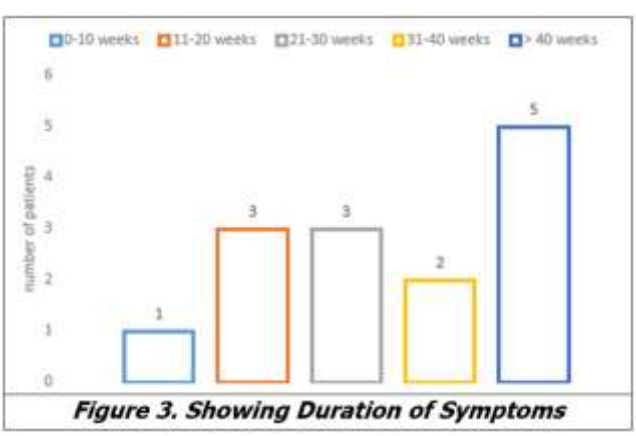

Figure 3. Showing Duration of Symptoms

Chief Complaints

More than 90% of patients in our study presented with abdominal pain followed by weight loss, jaundice and vomiting as shown in table and figure 4.

Chief Complaints	Number of Patients
Abdominal Pain	13
Weight Loss	4
Jaundice	1
Vomiting	1

Table 4. Showing Chief Complaints

Figure 4. Showing Chief Complaints

Socioeconomic Status

Socio-economic status of an individual in our study was evaluated by using Kuppuswamy scale and patients were divided as shown in table and figure-5.

Socio-Economic Status	Number of Patients
Upper Class	1
Upper Middle Class	1
Lower Middle Class	6
Upper Lower Class	5
Lower Class	1

Table 5. Showing Socio-Economic Status

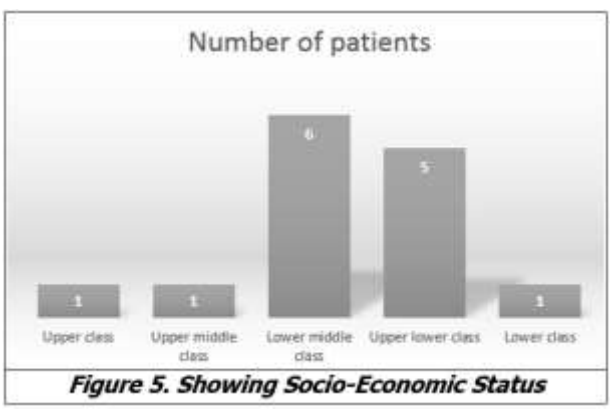

Figure 5. Showing Socio-Economic Status

Body Mass Index

Among the 14 patients of incidental gall bladder malignancy the lowest BMI was 17 and highest was 42 with mean BMI of 30.14. As shown in table and figure-6.

Body Mass Index	Number of Patients
< 18.5	3
18.5-24.9	1
25-29.9	1
30-34.9	3
35-39.9	4
≥40	2

Table 6. Showing Body Mass Index of Patients with Incidental Gall Bladder Malignancy

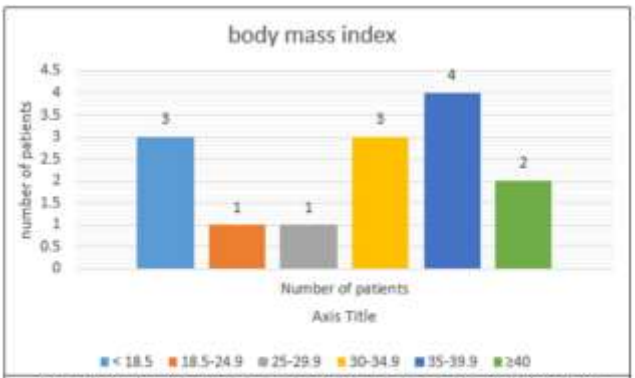

Figure 6. Showing Body Mass Index of Patients with Incidental Gall Bladder Malignancy

History of Smoking

In our study the history of cigarette smoking was significant especially in males among four patients three were smokers and in female only one was having history of smoking with significant P-Value of 0.015. As shown in figure and table-7.

History of Smoking	Present	Absent
Males	3	1
Females	1	9

Table 7. Showing History of Smoking

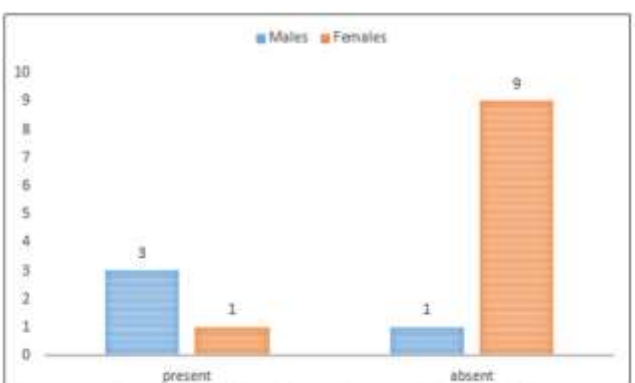

Figure 7. Showing History of Smoking

Pre-Operative USG Findings

In our study those patients with incidental gall bladder malignancy the pre-operative USG was not showing any evidence or suspicious of malignancy. Most of these were reported as polyposis or stones with thickened wall or features of inflammation as shown in table and figure-8.

USG Features	Number of Patients
Single Stone	6
Adenomyomatosis	4
Wall Thickening, Stones	2
Multiple Stones	1
Wall Thickening, Single Stone	1

Table 8. Showing USG Findings of Incidental Gall Bladder Malignancies

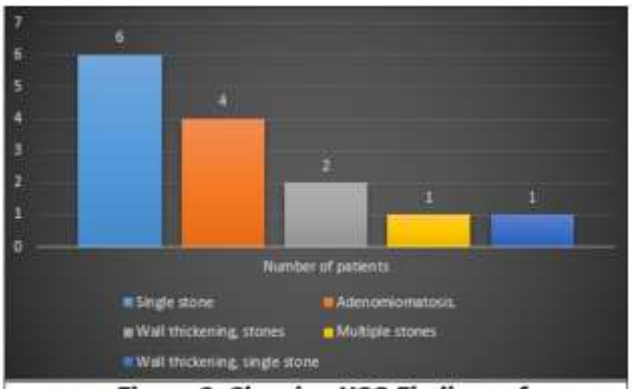

Figure 8. Showing USG Findings of Incidental Gall Bladder Malignancies

Intra-Operative Findings

in this study the intraoperative findings of patients with incidental gall bladder malignancy suggests that about half of the patients were having shrunken fibrosed gall bladder and rest gross findings were polypoid mass, difficulty in dissection due to adhesions and thickened gall bladder wall as shown in table and figure-9.

Intra-operative Findings	Number of Patients
Shrunken Fibrosed Gall Bladder with Stones (Chronic Cholecystitis)	7
Polyploid Mass	4
Difficult Cholecystectomy	2
Thickened Wall	1

Table 9. Showing Intra-Operative Findings

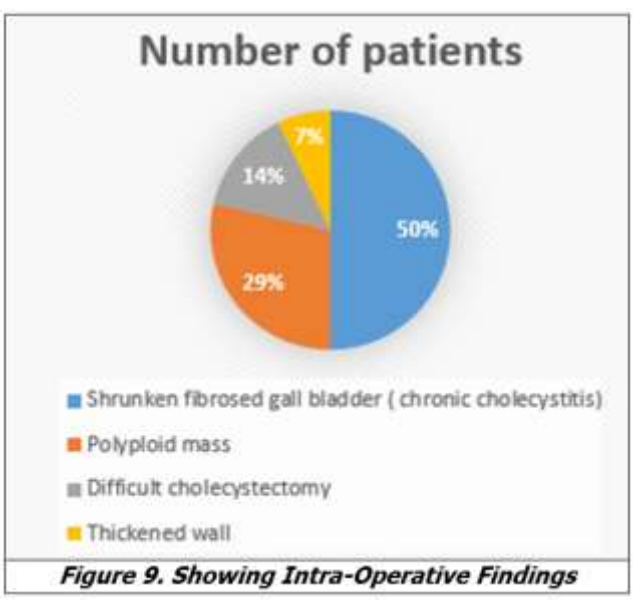

Figure 9. Showing Intra-Operative Findings

Staging of Tumour (T-Stage)

On histopathological examination of these incidental gall bladder malignancies the majority of these were not showing any feature of advanced disease and were limited with gall bladder wall as shown in table and figure-10 as per AJCC 8th classification.

T-Stage of Tumour	Number of Patients
Tis(Carcinoma in situ)	5
T1a	4
T1b	1
T2a	2
T2b	2

Table 10. Showing T-Stage of Tumour of Incidental Gall Bladder Malignancies

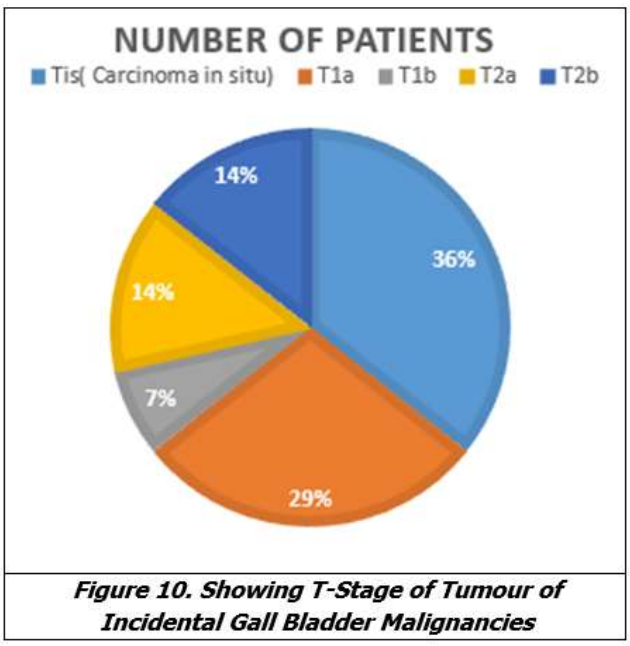

Figure 10. Showing T-Stage of Tumour of Incidental Gall Bladder Malignancies

Type of Tumour

In this study the histopathological examination revealed that all of the incidental gall malignancies showed features of adenocarcinoma.

DISCUSSION

Worldwide Gall bladder cancer is the most common malignant and aggressive tumour of the biliary tract.[8] This poor prognosis is due to its aggressive biologic behaviour and a lack of sensitive screening tests for early detection resulting in delayed diagnosis.[9] In our study the incidence of gall bladder malignancy was 1.6% which is similar to that of study conducted by Ferrarese et al.[10] where they found incidence of incidental gall bladder malignancy of 1.3%. in our study the mean age of patients with incidental gall bladder malignancy was 60.07 with male- female ratio of 1:1.25, similar results were seen by Ghimire P et al.[11] with mean age of patients as 63 years and male-female ratio of 1:2.33 (table 1, 2 and figure 1,2 respectively). In our study the maximum time period of symptoms attributed to pathology up to surgical procedure is 56 weeks and minimum is 3 weeks (table and figure 3) with More than 90% of patients in our study presented with abdominal pain followed by weight loss, jaundice and vomiting as shown in table and figure 4. Similar observations were encountered by Rani Kanthan et al.[12] and proposed that Right upper quadrant or epigastric pain is the most common symptom (54–83%), followed by jaundice (10-46%), nausea and vomiting (15-43%), anorexia (4-41%), and weight loss (10-

39%) and the development of gallbladder cancer is proposed to occur over a span of 5-15 years, with tissue alterations including metaplasia, dysplasia, carcinoma in situ and invasive cancer.

Socio-economic status of an individual in our study (Table and Figure 5) most of the patients were belongs to lower socio-economic status similar observations were encountered by Lazcano-Ponce EC[13] and explained that socioeconomic issues can delay access to cholecystectomy thus increasing gallbladder cancer rates. In our study the patients with incidental gallbladder malignancy the mean body mass index was 30.14 which suggest a strong correlation between increased BMI and gall bladder malignancy similar observations were made by Hariharan D[13] and proposed that For every 5-point increase in body mass index, the relative risk of developing gallbladder cancer increases by 1.09 for men and 1.59 for women. In our study the history of cigarette smoking was significant especially in males and various studies have proved smoking to be a risk factor for gall bladder malignancy Jain k.[14] In our study those patients with incidental gall bladder malignancy the pre-operative USG was not showing any evidence or suspicious of malignancy (table and figure-8). In this study most of patients' ultrasonography revealed either stones or Adenomiomatosis similar observations were encountered by Ferrarese et al. In this study the intraoperative findings of patients with incidental gall bladder malignancy suggests that about half of the patients were having shrunken fibrosed gall bladder with stones and rest gross findings were polypoid mass, difficulty in dissection due to adhesions and thickened gall bladder wall as shown in table and figure-9. Similar results were reported by Ghimire P[11] Eight patients had associated stone whereas 2 cases had GB polyp but no stones. On histopathological examination of these incidental gall bladder malignancies the majority of these were not showing any feature of advanced disease and were limited with gall bladder wall as shown in table and figure-10 similar observations were encountered by Ghimire P[11] were they reported that out of ten cases eight cases were pathologically staged as T1 whereas two were staged as T2. In this study the histopathological examination revealed that all of the incidental gall malignancies showed features of adenocarcinoma, Ghimire P[11] also had same findings.

CONCLUSIONS

Incidental gall bladder malignancy is among those malignancies which are usually missed because of nonspecific clinical and sonographic features. Chronic inflammation, cholelithiasis and adenomyomatosis were the major risk factors associated. Performing cholecystectomy should never be the only treatment of gall stones or any other pathology which demands cholecystectomy unless and until the histopathological examination of the specimen is ensured so as to diagnose and treat life threatening incidental gall bladder malignancy which is usually missed during peri-operative period.

REFERENCES

[1] Clemente G, Nuzzo G, De Rose AM, et al. Unexpected gallbladder cancer after laparoscopic cholecystectomy for acute cholecystitis: a worrisome picture. J Gastrointest Surg 2012;16(8):1462-1468.

[2] Benoist S, Panis Y, Fagniez PL. Long-term results of the curative resection for carcinoma of the gallbladder. French University Association for Surgical Research. Am J Surg 1998;175(2):118-122.

[3] Isambert M, Leux C, Métairie S, et al. Incidentally-discovered gallbladder cancer: when, why and which reoperation? J Visc Surg 2011;148(2):e77-e84.

[4] Yamamoto H, Hayakawa N, Kitagawa Y, et al. Unsuspected gallbladder carcinoma after laparoscopic cholecystectomy. J Hepatobiliary Pancreat Surg 2005;12(5):391-398.

[5] Levy AD, Murakata LA, Rohrmann CA. Gallbladder carcinoma: radiologic-pathologic correlation. Radiographics 2001;21(2):295-314.

[6] Rodriguez-Fernandez A, Gomez-Rio M, Medina-Benitez A, et al. Application of modern imaging methods in diagnosis of gallbladder cancer. J Surg Oncol 2006;93(8):650-664.

[7] Randi G, Franceschi S, La Vecchia C. Gallbladder cancer worldwide: geographical distribution and risk factors. Int J Cancer 2006;118(7):1591-1602.

[8] Lai CH, Lau WY. Gall bladder cancer--a comprehensive review. Surgeon 2008;6(2):101-110.

[9] Dutta U. Gallbladder cancer: can newer insights improve the outcome? J Gastroenterol Hepatol 2012;27(4):642-653.

[10] Ferrarese AG, Solej M, Enrico S, et al. Diagnosis of incidental gallbladder cancer after laparoscopic cholecystectomy: our experience. BMC Surg 2013;13 Suppl 2:S20.

[11] Ghimire P, Yogi N, Shrestha BB. Incidence of incidental carcinoma gall bladder in cases of routine cholecystectomy. Kathmandu Univ Med J 2011;9(34):3-6.

[12] Kanthan R, Senger JL, Ahmed S, et al. Gallbladder cancer in the 21st century. Journal of Oncology 2015;2015:1-26.

[13] Hariharan D, Saied A, Kocher HM. Analysis of mortality rates for gallbladder cancer across the world. HPB (Oxford) 2008;10(5):327-331.

[14] Jain K, Sreenivas V, Velpandian T, et al. Risk factors for gallbladder cancer: a case-control study. Int J Cancer 2013;132(7):1660-1666.