

## ASSESSMENT OF SURGICAL TREATMENT FOR INCIDENTAL GALLBLADDER CARCINOMA DIAGNOSED AFTER LAPAROSCOPIC CHOLECYSTECTOMY

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### Abstract

**Background:** The aim is to assess surgical treatment for incidental gallbladder carcinoma diagnosed after laparoscopic cholecystectomy. **Materials and Methods:** One hundred fifty- eight adult patients who underwent laparoscopic cholecystectomy were enrolled in this prospective, observational study. Among these, 12 patients were diagnosed with incidental gall bladder carcinoma (IGBC). Parameters such as clinical findings, ultrasonography findings, preoperative diagnosis, intraoperative findings, histopathological records and surgical outcomes were recorded. **Result:** Out of 12 patients, males were 5 and females were 7. Maximum patients had clinical findings of right hypochondralgia. USG findings were segmental GB wall thickening, multiple GB stones and multiple GB polyps. Pre- operative diagnosis was GB stones, GB polyps and adenomyomatosis. Removal of cystic duct node in 1st operation was seen in 4 and none in 8. The mean hospital stay was 6.2 days. The mean size was 4.5 cm. Postoperative complication found to be SSI in 3 patients. Tumor location of gallbladder was seen in fundus in 4, body in 6 and neck in 2 cases. Pathology was well differentiated adenocarcinoma in 8, moderately differentiated adenocarcinoma in 3 and poorly differentiated adenocarcinoma in 1 case. 2nd surgical procedure performed was radicalization in 5 and refused in 2 cases. Margin R0 was seen in 7, R1 in 3 and R2 in 2 cases. Recurrence was none in 9, liver in 2 and peritoneum in 1 case. The difference was significant ( $P < 0.05$ ). **Conclusion:** Incidence of gall bladder carcinoma in patient undergoing laparoscopic cholecystectomy found seen in 12 patients.

## INTRODUCTION

The 5-years survival of all gallbladder carcinomas is 5%. The prognosis for gallbladder cancer depends on the stage of the tumor, but generally speaking, the prognosis is extremely bad, because it is a highly malignant tumor, with fast clinically recognizable disease indications. Only a third of gallbladder carcinomas are already known pre-surgically. In the majority of cases the tumor is diagnosed after a routine cholecystectomy for a benign disease within the scope of the histologic investigation of the gallbladder carried out by the pathologist.<sup>[1,2]</sup>

Laparoscopic cholecystectomy (LC) has become the accepted gold standard management for gallbladder disease. This procedure has now become routine in the treatment of benign gallbladder disease because of a shorter hospital stay, decreased post-operative

pain and earlier resumption of normal activities as compared to open cholecystectomy. These are biggest advantages. LC that is performed for benign gallbladder disease rarely results in a diagnosis of unexpected gallbladder carcinoma. Incidental gallbladder carcinoma (IGBC) is defined as carcinoma of the gallbladder suspected for the first-time during cholecystectomy, or accidentally found on histological examination of gallbladder.<sup>[3,4]</sup>

In the majority of cases the diagnosis is made only after a cholecystectomy, within the scope of the histologic examination of the gallbladder carried out by the pathologist. The primary operation of a gallbladder carcinoma should not affect the prognosis negatively. However, most incidental gallbladder carcinomas are resected laparoscopically. The crucial question is whether the primary laparoscopic surgery leads to a worsening

of the prognosis. We performed present study to assess surgical treatment for incidental gallbladder carcinoma diagnosed after laparoscopic cholecystectomy.<sup>[5,6]</sup>

## MATERIALS AND METHODS

One hundred fifty- eight adult patients who underwent laparoscopic cholecystectomy were enrolled in this prospective, observational study. Among these, 12 patients were diagnosed with incidental gall bladder carcinoma (IGBC). All gave their written consent for the participation in the study. Ethical clearance certificate was also obtained before starting the study.

Demographic data of each patient was recorded. Parameters such as clinical findings, ultrasonography findings, preoperative diagnosis, intraoperative findings, histopathological records and surgical outcomes were recorded. All LCs were executed using the standard 4 trocar technique, and end- bag protected gallbladder (GB) extraction.

Staging of patients were done according to the American Joint Committee on Cancer 7th edition tumor node metastasis clinical staging system for GBC. Patients with pT2 or pT3 tumors underwent additional radical surgery. Hepatic S4a + S5 resection with hepatic peduncle

Lymphadenectomy was performed. The completeness of the resection was classified as

follows: R0, no residuals in the hepatic margins; R1, a microscopically positive margin; and R2 macroscopic residuals in the hepatic margin. The results were compiled and subjected for statistical analysis using Mann Whitney U test. P value less than 0.05 was set significant.

## RESULTS

Out of 12 patients, males were 5 and females were 7 [Table 1].

Maximum patients had clinical findings of right hypochondralgia. USG findings were segmental GB wall thickening, multiple GB stones and multiple GB polyps. Pre- operative diagnosis was GB stones, GB polyps and adenomyomatosis [Table 2].

Removal of cystic duct node in 1st operation was seen in 4 and none in 8. The mean hospital stay was 6.2 days. The mean size was 4.5 cm. Postoperative complication found to be SSI in 3 patients. Tumor location of gallbladder was seen in fundus in 4, body in 6 and neck in 2 cases. Pathology was well differentiated adenocarcinoma in 8, moderately differentiated adenocarcinoma in 3 and poorly differentiated adenocarcinoma in 1 case. 2nd surgical procedure performed was radicalization in 5 and refused in 2 cases. Margin R0 was seen in 7, R1 in 3 and R2 in 2 cases. Recurrence was none in 9, liver in 2 and peritoneum in 1 case. The difference was significant (P< 0.05) [Table 3].

**Table 1: Patients distribution**

Total- 12		
Gender	Male	Female
Number	5	7

**Table 2: Clinical characteristics of patients with incidental gallbladder carcinoma**

Patient	Clinical findings	Pre-ALP (units/L)	USG findings	Preoperative diagnosis
1	Right hypochondral	310	Segmental GB wall thickening, multiple GB stones	GB stone, cholecystitis
2	None	210	Multiple GB stones	GB stones
3	Right hypochondral	352	Segmental GB wall thickening, multiple GB stones	GB stones
4	None	174	Multiple GB polyps	GB polyps
5	Right hypochondral	284	GB wall thickening, GB stones	GB stones
6	Right hypochondral	220	Multiple GB polyps	GB polyps
7	None	196	Segmental GB wall thickening, multiple GB stones	Adenomyomatosis
8	Right hypochondral	265	GB wall thickening, GB stones	Adenomyomatosis
9	Right hypochondral	318	Multiple GB polyps	GB stone, cholecystitis
10	None	152	Multiple GB stones	GB stones
11	Right hypochondral	274	Multiple GB polyps	GB stone, cholecystitis
12	None	176	Multiple GB stones	GB stones

**Table 3: Assessment of parameters**

Parameters	Variables	Number	P value
Removal of cystic duct node in 1st operation	Yes	4	0.05
	None	8	
Hospital stay (days)		6.2	-
Mean size (cm)		4.5	-
Postoperative complication	SSI	3	-
Tumor location of gallbladder	Fundus	4	0.16
	Body	6	
	Neck	2	
Pathology	Well differentiated adenocarcinoma	8	0.01
	Moderately differentiated adenocarcinoma	3	

	Poorly differentiated adenocarcinoma	1	
2nd surgical procedure	Radical Cholecystectomy	5	0.05
	Refused	2	
Margin	R0	7	0.02
	R1	3	
	R2	2	
Recurrence	None	9	0.01
	Liver	2	
	Peritoneum	1	

## DISCUSSION

Laparoscopic Cholecystectomy (LC) is the accepted gold standard management for symptomatic gallstone disease since the past 2 decades.<sup>[2]</sup> With the advantages of a shorter hospital stay, decreased post-operative pain and an early resumption of normal activities, this procedure has now become routine in the treatment of benign gallbladder disease in the general surgical units all over the world. A LC which is performed for benign gall bladder disease rarely results in a diagnosis of unexpected gallbladder cancer.<sup>[8]</sup> The incidence of gallbladder cancer which is diagnosed during or after a LC has been reported to be between 0.19% to 3.3% at various centres.<sup>[9]</sup> We performed present study to assess surgical treatment for incidental gallbladder carcinoma diagnosed after laparoscopic cholecystectomy.

Our results showed that out of 12 patients, males were 5 and females were 7. Sujata et al,<sup>[10]</sup> recorded incidence of incidental gall bladder carcinoma which is diagnosed during or after a laparoscopic cholecystectomy is reported to be around 0.19-3.3% in the literature. They analyzed the medical records of patients with symptomatic gallstone disease and acute or chronic cholecystitis, who underwent laparoscopic cholecystectomies. A total of 622 laparoscopic cholecystectomies were performed at our institute during the study period of five and a half years. In 6 (0.96%) cases, incidental carcinomas of the gallbladder were discovered.

Maximum patients had clinical findings of right hypochondralgia. USG findings were segmental GB wall thickening, multiple GB stones and multiple GB polyps. Pre-operative diagnosis was GB stones, GB polyps and adenomyomatosis. Tania et al,<sup>[11]</sup> in their study a total of 3205 LC done for symptomatic gall stone disease were retrospectively searched for incidental CaGB (detected on histopathology). Nineteen patients (14 female and 5 male) with incidental CaGB (incidence 0.59%) were detected. Mean age of the patients was 56 years. Only two of these patients had clinical jaundice and both had common bile duct (CBD) stones. The majority of the patients were in early pathological stages (pT) and none was in pT3 and pT4 stage. Seventeen patients could be followed up telephonically in November 2007 and of those 14 patients were alive at a mean follow-up duration of 21.2 months, with one of them having evidence of metastatic disease.

We observed that removal of cystic duct node in 1st operation was seen in 4 and none in 8. The mean hospital stay was 6.2 days. The mean size was 4.5 cm. Postoperative complication found to be SSI in 3 patients. Tumor location of gallbladder was seen in fundus in 4, body in 6 and neck in 2 cases. Pathology was well differentiated adenocarcinoma in 8, moderately differentiated adenocarcinoma in 3 and poorly differentiated adenocarcinoma in 1 case. 2nd surgical procedure performed was radicalization in 5 and refused in 2 cases. Margin R0 was seen in 7, R1 in 3 and R2 in 2 cases. Recurrence was none in 9, liver in 2 and peritoneum in 1 case. Utsumi et al,<sup>[12]</sup> evaluated characteristics, surgical related variables, histopathological findings and surgical outcomes in patient underwent LC. Patient median age was 71 (range 49–88) years, and 3 out of 8 were female. All patients with IGBC were Japanese. The grade of cancer was as follows: pT1a (3 cases), pT2 (4 cases) and pT3 (1 case). Two patients with pT2 disease underwent radical surgery. The median follow-up time of these patients was 24 (range 11–80) months. All patients are still alive and two of three patients who refused radical surgery have developed recurrence (liver metastases and recurrence in the peritoneum).

Kwon et al,<sup>[13]</sup> found that diagnosis using frozen sections did not reliably detect the carcinoma in situ and the depth of invasion of GBC; thus, it should not be considered a definitive diagnostic procedure.

## CONCLUSION

Incidence of gall bladder carcinoma in patient undergoing laparoscopic cholecystectomy found seen in 12 patients.

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