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Original Research Article

PREVALENCE OF GALL BLADDER SQUAMOUS CELL CARCINOMA IN NORTH WEST RAJASTHAN: A FIVE YEAR RETROSPECTIVE STUDY AT OUR INSTITUTE.

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Abstract
Background: Gallbladder cancer is the most common malignant tumor of the biliary tract. The majority of cases are adenocarcinoma (AC). Pure squamous cell carcinoma (SCC) of gallbladder accounts only 3% of the malignant neoplasm of this organ.
Methods: The medical records of all the patients who underwent cholecystectomy and specimen sent to the Pathology Department of Sardar Patel Medical College, Bikaner, in last five years were retrospectively analysed.
Results: Out of total 1375 patients, 40 patients had gall bladder tumors and 1 (2.5%) patient had histological evidence of squamous cell carcinoma of gall bladder. The patient was 43 year old female. cholecystectomy was performed.
Conclusion: Squamous cell carcinoma (SCC) is rare tumour of gall bladder.
Keywords: Squamous cell carcinoma, Adenocarcinoma, Gall Bladder

Introduction:

Gallbladder carcinomas (GBC) are uncommon malignancies, being the fifth most common cancer of the digestive tract. It accounts for only 2% to 4% of all gastrointestinal malignancies.[1] The most common histopathological type of carcinoma of the gallbladder is Adenocarcinoma.[2] Squamous cell carcinoma (SCC) of the gallbladder is a rare and aggressive affection and is responsible for up to 12.7% of the malignant neoplasms of this organ.[3,4,5] Pure squamous cell carcinoma of gall bladder is even less common with a reported incidence of 3.3%. It characteristically presents invasive growth, a low tendency towards lymph node metastases and a high incidence of local infiltration and hepatic metastases, presenting a worse prognosis than adenocarcinoma of the gallbladder.[3,4] The clinical onset is insidious and the signs and symptoms mimic those of chronic cholecystitis with cholelithiasis. The most common clinical findings are the upper abdominal pain, jaundice, anorexia, nausea and vomiting.

METHODS

Study design: Retrospective Study.

Study duration: Five years from April 2016 to March 2021.

Study place: Department of Pathology, Sardar Patel Medical College, Bikaner.

Study Material: All specimens of cholecystectomy received at Department of Pathology during the study period were taken for study. The clinical and relevant data were recorded from requisition form and patient's clinical records.

The specimens received, were fixed in 10% buffered formalin. Gross examination was done and findings were recorded. After fixation of the tissue, sections were taken as per protocol and processed by wax block method and stained by haematoxylin and eosin stain and observed under light microscope.

Results

We received a total of 1375 specimens of cholecystectomy at Department of Pathology during the study period. Out of which 40 were of gall bladder tumour and 1 case (2.5%) was squamous cell carcinoma of gallbladder. Patient of squamous cell carcinoma gall bladder was 43 year old female patient presented with complaints of pain in right hypochondrium for one month. There was no history of fever, loss of appetite, loss of weight or jaundice. She was non alcoholic and had no history of smoking. Physical examination revealed a palpable gallbladder. Abdominal ultrasonography [Image 1] showed over distended gall bladder. Multiple hyperechoic foci with DAS seen in gall bladder sign of cholelithiasis, largest (31mm) is seen near neck region. The patient had undergone cholecystectomy. On gross examination [Image 2], wall of gall bladder was thickened, mucosa was lost all over, and stones were found in lumen as well as in neck of gall bladder. A growth was identified in neck of gall bladder. Cut surface of growth was grey tan in colour; areas of haemorrhage and necrosis were also seen. Histopathology section [Image 3] from deepest invasion shows infiltration of tumor cells up to lamina propria, muscularis and perimuscular area free from disease (Stage T1a). Native gall bladder tissue with mucosa lined by columnar epithelium with an abrupt transition to tumor. Tumor was arranged in diffuse sheets, solid aggregates, keratin pearls seen. Individual neoplastic cells

were large round to polygonal having distinct cell borders, abundant eosinophilic cytoplasm, and pleomorphic hyperchromatic nucleus. Some of the cells showed prominent nucleoli. Occasional mitotic activity per high power field was noted along with chronic inflammatory cell infiltrate. Normal surrounding gall bladder mucosa showed features of chronic cholecystitis.

Table 1: Summary of Present Study

Study duration	Total cases	Neoplastic lesions of gall bladder	SCC of gall bladder	Prevalence of scc [of gall bladder tumors]
2016 to 2021	1375	40	1	2.5%

Discussion

Gallbladder malignant tumors are rare. They are more common in females than males.[6] Incidence of gallbladder cancer in United States is 2/100,000 women and 1/100,000 men.[7] It is more common in lower socioeconomic group. The incidence is greater in South American countries and in Asian countries, especially India and Japan.[8] North India is one of the regions having highest incidence of gall bladder carcinoma. Delhi has the highest gallbladder cancer incidence rates for women.[9] Age, gender, obesity predisposes to the development of carcinoma gallbladder. Chronic cholecystitis and cholelithiasis are the most important risk factors for the development of gallbladder carcinoma.[6] In the present study we observed results similar to the other parts of India, with female predominance for SCC of gall bladder.

Histologically the most common variant is adenocarcinoma (90%). Other rare variants included are adenosquamous carcinoma (4%), squamous cell carcinoma (1.4%), adenosarcoma (1.6%), neuroendocrine tumors (3%) and melanoma (<1%).[10] In the present study we observed the prevalence of SCC of gall bladder to be 2.5%, which is higher than the documented global prevalence and almost comparable with study done by Xiao-ping Zou, et al.[13] , the slightly higher prevalence is mainly due to the variation in ethnicity and socioeconomic status of the population and also the accessibility and time to take the medical care by the patients in our area. The etiology of the SCC subtype of gallbladder cancer is unknown. Several theories have been proposed. According to one theory adenocarcinoma undergoes squamous metaplasia and squamous cells over grow, eventually replace all of the adenocarcinoma elements and forms pure SCC.[11] There is another theory describes a formation of squamous cell carcinoma from progression of metaplasia dysplasia-carcinoma sequence.[12]

We compared the finding of present study with other studies conducted in the past. The comparative analysis is shown in Table 2.

Table 2: Comparative analysis

Serial no.	Study	Study period	Total cases of GBC	No. of SCC gall bladder	Prevalence
1	Xiao-ping Zou, et al.[13]	January 2008 to October 2017	93	2	2.1%
2	Present study	April 2016 to March 2021	40	1	2.5%

Conclusion

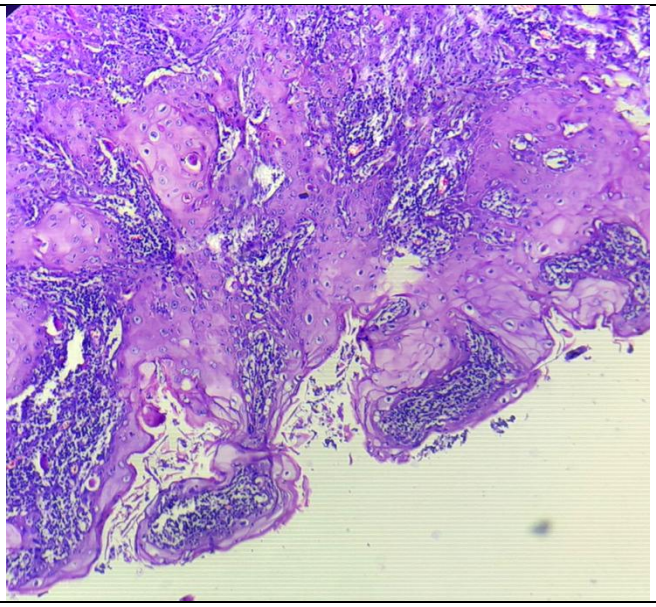
Squamous cell carcinoma of the gallbladder is a rare variety. This variant has high incidence of rapid growth and involvement of local organs. Well differentiated variety of squamous cell carcinoma has slow growth and may not have distant metastases. Surgical excision is the main line of treatment.

Image 1: Abdominal Utltasonography showing distended gall bladder

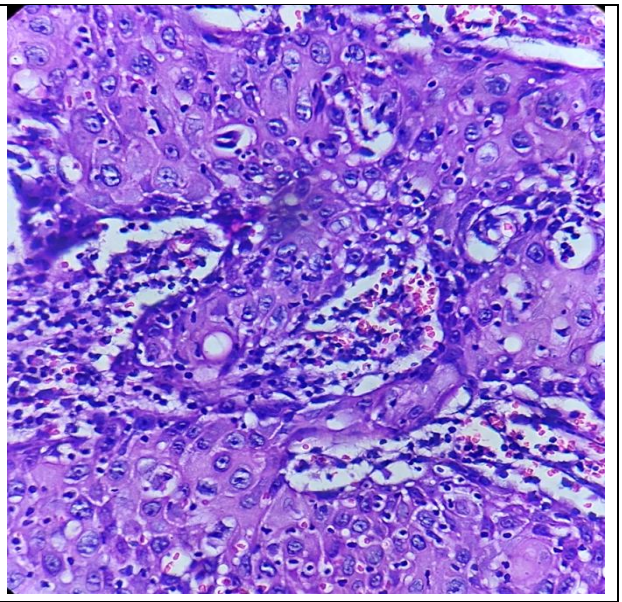
A – Gross appearance of gall bladder showing thickened wall and growth inside the lumen.

B – Stone found in the lumen of the gall bladder.

Image 2 (A, B) – Gross features of Gall Bladder Squamous cell carcinoma.



A – Showing malignant squamous cells in diffuse sheets and solid aggregates, keratin pearls seen (10x, H&E)



B – Malignant squamous cells with pleiomorphic nuclei and prominent nucleoli. (40x, H&E)

Image 3 (A, B) – Showing histopathological features of Gall Bladder Squamous cell carcinoma.

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