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Pathology

FINE NEEDLE ASPITATION CYTOLOGY OF GALL BLADDER CYTOLOGICALLY DIAGNOSED AS SMALL CELL NEUROENDOCRINE TUMOR: A RARE CASE SERIES

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ABSTRACT Neuroendocrine carcinoma present very rarely in Gall Bladder as primary tumor, comprising of only 0.5% of neuroendocrine tumors from all sites. These tumors are aggressive tumors with poor survival outcome. Here we reported 2 cases of gall bladder neuroendocrine carcinoma in two patients. Both of the patients underwent Ultrasound guided Aspiration Cytology and the diagnosis of small cell NET was made. We presented the case series due to its rare occucrence and FNAC proved to be valuable in making the diagnosis of Small Cell Neuroendocrine tumor due to characterstic microscopic appearance.

KEYWORDS : Gall Bladder, Neuroendocrine carcinoma, Tumor.

INTRODUCTION-

Neuroendocrine tumors (NETs) arise commonly in gastrointestinal tracts and lungs. NETs occur rarely in Gall Bladder. NETs in GB comprise approximately 0.2% (1,2)of all neuroendocrine neoplasms and ~2% of all GB cancers. NETs are broadly classified as well-differentiated NETs (carcinoid tumors) and poorly differentiated large cell or high-grade neuroendocrine carcinomas(3,4). Here, we report two cases of small cell carcinoma in GB.

CASE REPORT-

CASE 1- First case is a case of 40 year old male patient who presented with recurrent right upper quadrant pain from 2 months. Abdominal ultrasonography revealed multiple nodular lesions in the gall bladder.

CASE 2- Second case is a case of 60 year old male patient who presented with nonspecific symptoms like nausea and vomiting. However the patient had history of weight loss and mild abdominal pain. Abdominal ultrasonography revealed a solid mass in gall bladder also infiltrating liver.

Ultrasound guided Fine needle aspiration was performed using 22Guage Lumber Puncture needle. On aspiration blood mixed material was obtained from both cases. Prepared smears were fixed in methanol and stained with Hematoxylin and Eosin stain.

MICROSCOPIC FINDINGS-

Smears from both cases revealed similar picture.Fine needle aspiration cytology smears revealed mainly dispersed population of small tumor cells(Figure 1). These cells were having dark nuclei with finely granular **(salt and pepper chromatin)** chromatin texture, inconspicuous nucleoli and scant amount of cytoplasm (Figure 2). These tumor cells were also showing frequent nuclear moulding within cell aggregates in a necrotic background. These findings suggested the diagnosis of small cell neuroendocrine carcinoma of gall bladder.

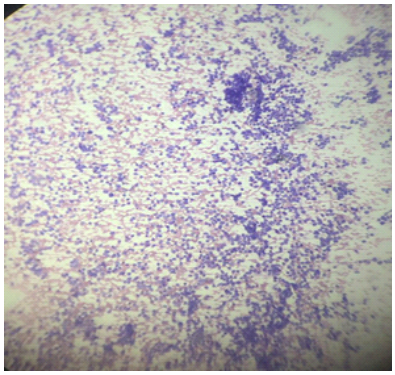


Figure 1-This 10x magnification shows the dispersed population of small tumor cells.

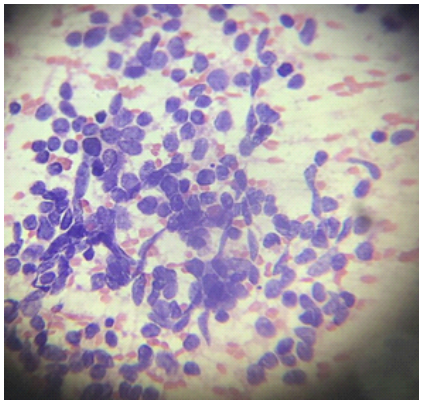


Figure-2:This 40x magnification shows cells with 'salt and pepper chromatin'and scant cytoplasm.

DISCUSSION-

Majority of these tumors arise in the gastrointestinal tract(the appendix, jejunum, and rectum) and the second most prevalent site is the bronchopulmonary system . GB is exceptionally infrequent site for carcinoid (5). **Nishihara et al** reported in their study on GB NETs that the average age of presentation of these tumors is 65 years (6) ,however in our study average age is 55 years. GB-NETs probably derive from either a multipotent stem cell or neuroendocrine cells in intestinal or gastric metaplasia of the gallbladder epithelium, which occurs consequent upon cholelithiasis/chronic inflammation. Clinically and at surgery, GB-NETs are indistinguishable from gallbladder cancer. We found these two cases within the time period of 6 months despite being very uncommon. Studies by various authors have also reported the rarity of GB-NETs Sanders reported only 7 tumors in the gallbladder among 3633 digestive tract carcinoids. Godwin also reported only one case in the gallbladder among 2837 carcinoids. We presented this case series due to rarity of these Gall bladder Neuroendocrine tumors and to show the role of FNAC In the rapid diagnosis of these tumors. Other studies have also reported that Cytology plays an important role in the diagnosis of GB-NETs for appropriate subtype characterization, which is necessary for the prognostication of these tumors(9).

CONCLUSION-

Gallbladder carcinoid is an uncommon neoplasm with a poor outcome and needs to be treated aggressively. The diagnosis is often made postoperatively on histopathological results however Fine Needle Aspiration Cytology, being quicker and easy to perform, can efficiently play a role in the rapid diagnosis of these tumors due to its characterstic cytological appearance.

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