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Neuroendocrin Tumor of the Gallbladder: A Case Report

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Abstract **Case Report**

Background: Neuroendocrine tumors (NETs) of the gallbladder are rare and account for less than 1% of all gallbladder tumors. These tumors are typically asymptomatic and are often discovered incidentally during imaging for other reasons. The majority of NETs of the gallbladder are non-functioning, meaning that they do not produce hormones or cause hormonal symptoms. ***Case Presentation***: A 32-years old woman presented with a six-month history of non-specific abdominal pain without a remarkable prior history. Ultrasonographic examination of the abdomen revealed the gallbladder containing multiple stones, with wall thickening. A laparoscopic cholecystectomy was performed, and histopathological examination of the resected gallbladder confirmed the presence of a neuroendocrine tumor. ***Conclusion***: This case report highlights the importance of considering neuroendocrine tumors as a differential diagnosis for gallbladder masses. The patient underwent a successful laparoscopic cholecystectomy and had a good outcome. Close follow-up is necessary to detect any recurrence as these tumors have a tendency to recur locally.

Keywords: Neuroendocrine tumor, gallbladder, laparoscopic cholecystectomy.

INTRODUCTION

NETs are histologically varied entities and can range from indolent, unrecognized neoplasms to highly active, metastatic secretory tumors [1]. Prognostic factors include primary tumor site, histological differentiation, tumor size, angioinvasion, infiltrative growth, and production of hormones [2]. Although the incidence of NETs has increased over the past 30 years, survival has also improved [3].

In this presentation, we report a case of neuroendocrine tumor of the gallbladder with a review of the literature in order to shed light on the clinical, therapeutic and prognosis for this type of neoplasia.

CASE PRESENTATION

A 32 years old woman presented a six months history of non specific abdominal pain without a remarkable prior history. On examination, there was no pertinent medical or surgical history, and the patient was asymptomatic and showed no evidence of jaundice. An abdominal examination revealed no tenderness or abnormal mass.

Ultrasonographic examination of the abdomen revealed the gallbladder containing multiple stones, with wall thickening,no evidence of biliary dilatation was noted and there was no ascites. A decision was taken to proceed with surgical intervention, and laparoscopic cholecystectomy was performed.

On gross inspection, the gallbladder measured 7/2cm countaining 4 stones measuring between 0,2cm and 0,3cm of diameter.

Microscopic evaluation revealed the presence of an atypical glandular measuring 4 mm composed of some glands with a basophilic border made up of cells with a dense and slightly irregular nucleus without mitoses and with a scanty cytoplasm. The muscularis is dissociated by a discrete fibrosis. The serosa contains nerve filaments, the excision section of the neck is located at a distance of 2 mm.

Immunohistochemical analysis revealed that his cells were negative for -CDX-2 antibody but positive for tumor cell granules of synaptophysin and chromogranin A, CD56, CK7, CK20, Ki67 (2%). Histologically, the GB lesion presented as an NET, classified into low grade subtype G1 (Figure 1).

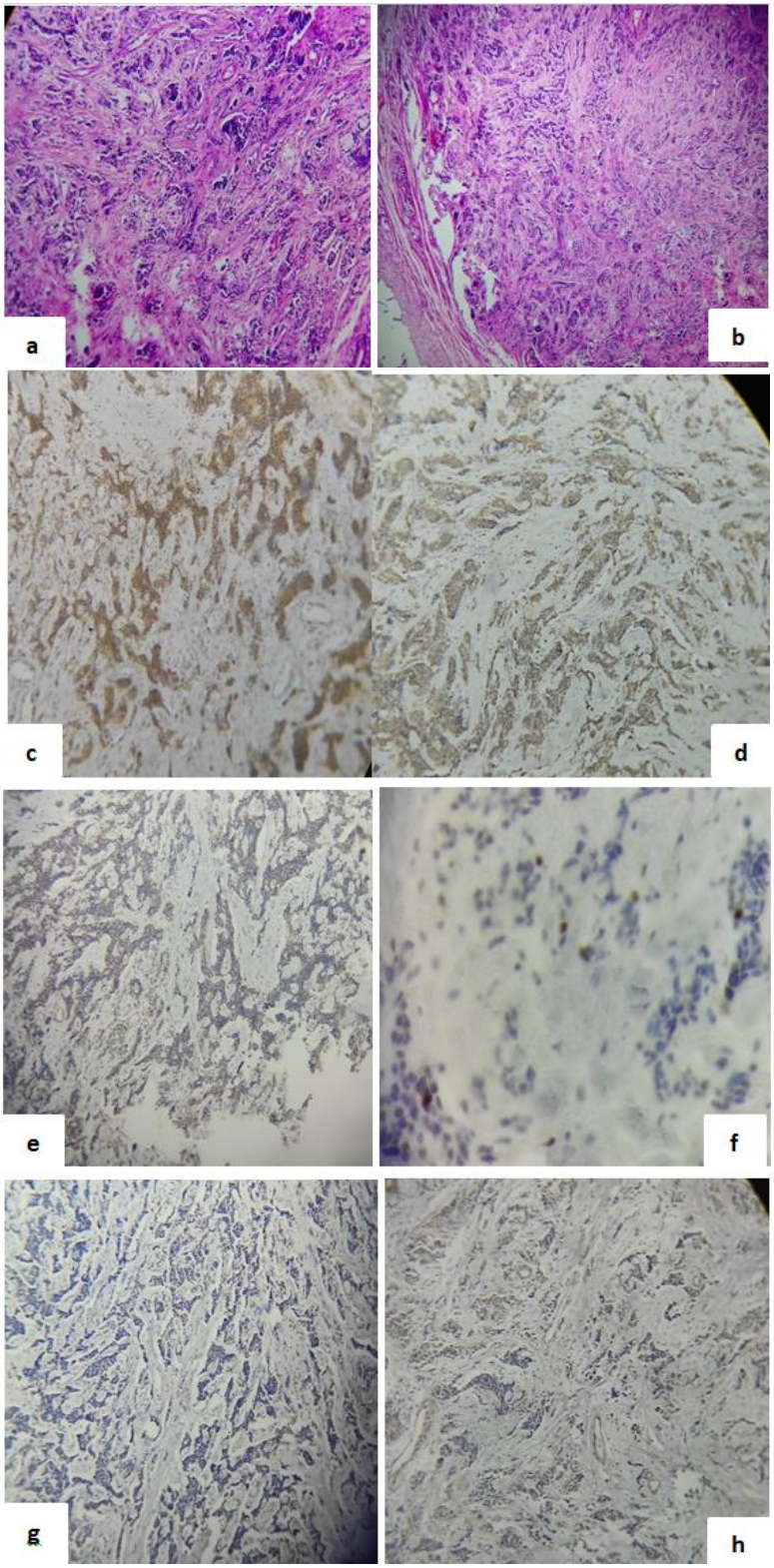

Figure 1: Definitive diagnosis of a neuroendocrine tumor of the gallbladder relies on the pathological results. a, b Hematoxylin and eosin staining of the gallbladder tumor; c,d,e,f,g,h: Immunohistochemical staining showed positivity for cytokeratin 7, cytokeratin 20, chromogranin A, synaptophysin, CD56,. The Ki-67 index was 2%

DISCUSSION

Neuroendocrine tumors (NETs) of the gallbladder are rare, accounting for less than 1% of all gallbladder tumors [4]. These tumors are typically asymptomatic, and are often discovered incidentally during imaging for other reasons [5]. The majority of NETs of the gallbladder are non-functioning, meaning that they do not produce hormones or cause hormonal symptoms [5].

Treatment of NETs of the gallbladder typically involves surgical resection, with laparoscopic cholecystectomy being the preferred approach [5]. Adjuvant therapy, such as radiation or chemotherapy, is not typically recommended for these tumors as they tend to be slow-growing and indolent in nature [5].

Prognosis for NETs of the gallbladder is generally good, with 5-year survival rates reported to be between 70-80%. However, close surveillance is necessary to detect any recurrence, as these tumors have a tendency to recur locally [5].

It is important to note that the classification of neuroendocrine tumors (NETs) is based on their histological features, site of origin, and functional characteristics. Therefore, they can be grouped into well-differentiated (G1), moderately differentiated (G2) or poorly differentiated (G3) tumors, this classification is critical as it impacts the management and prognosis of the disease [6].

NETs of the gallbladder are considered low-grade tumors (G1) and have a good prognosis, however, if the tumor is high-grade (G3) or has a high mitotic rate (greater than 20 mitoses/10 high-power fields), the prognosis worsens and adjuvant therapy should be considered [6].

In addition, the biological behavior of NETs can be influenced by their hormonal activity. Therefore, it is essential to evaluate the expression of specific markers such as chromogranin A and synaptophysin, which are present in most NETs. These markers can also be used to monitor the response to therapy and to detect recurrences [7].

CONCLUSION

In summary, NETs of the gallbladder are rare but should be considered in the differential diagnosis of gallbladder masses. The management of these tumors typically involves surgical resection, specifically laparoscopic cholecystectomy, and close follow-up is necessary to detect any recurrence. The classification of the tumor, including its histological grade and hormonal activity, is an important factor in determining the prognosis and management of the disease.

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