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An Incidental Case of Neuroendocrine Tumor Case Report

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Abstract

Rectal neuroendocrine tumors (NETs), which have a 0.17% incidence, are rare. Despite the fact that improved detection rates are to blame for the current increase in NET incidence. Furthermore, it has been determined that the following elements significantly influence the tumor's capacity to spread: Proliferative index, depth of infiltration at diagnosis, and tumor size [(1)]. When the tumor is detected at a low-grade proliferation stage, rectal NET offers the best prognosis of any NET type. Modern knowledge of the lesion's morphology, along with the additional use of ancillary studies, help diagnose NET as soon as possible so that the necessary management may be tailored.

Keywords: *Neuroendocrine tumor, Rectum, Proliferation index, Grading*

1. Introduction

Rectal neuroendocrine tumors (NET) are uncommon with an incidence of 0.17%. Although the recent rising incidence of NETs are due to advanced detection rates(1). Mostly NETs are asymptomatic, occasionally it can manifest with diarrhea, vomiting, bleeding per rectum and leading to anemia. The biological behavior of this tumor remained unpredictable for decades. Finally, factors that play a major role in metastatic ability of the tumor have been established – Tumor size; Proliferative index; Depth of invasion at diagnosis (2).

Case Details

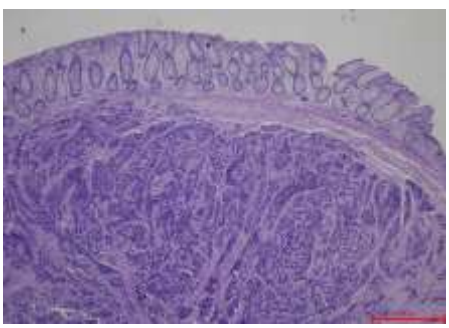
A 54-year-old male came with a complaint of difficulty in passing stools for past 3 months. No complaints of bleeding PR. Per rectal examination – Rectal polyps+; No mass felt. Procedure done – Excision biopsy of 2 pedunculated polyps

Gross

Received 2 tissue bits largest measuring 1 x 0.5 cm, smallest measuring 0.5 x 0.5 cm. External surface largest bit [I] – Grey black to grey brown in color; Cut section – Grey white in color. External surface smallest bit [II] – Grey white to grey black in color; Cut section – Yellowish white in color.

Microscopy

Microscopically, the sub-mucosal region shows a well differentiated poorly encapsulated tumor(a) resembling a neuroendocrine tumor consisting of nest, trabeculae, and ribbons like clusters of atypical cells. Atypical cells(b) are monomorphic, uniform, mildly hyperchromatic cells with salt and pepper type of chromatin(C), interspersed with delicate fibrovascular stroma. No evidence of increased mitotic activity (<2/hpf) in routine H&E. The specimen was further subjected Immunohistochemical staining with Ki-67(d) proliferation marker (<2%) for confirmation and diagnosed as Low grade (G1) NET.



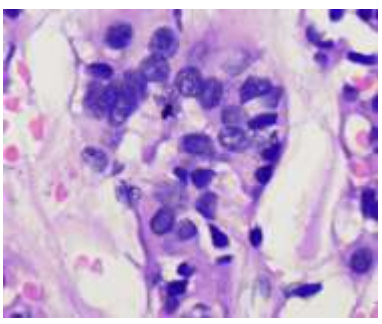
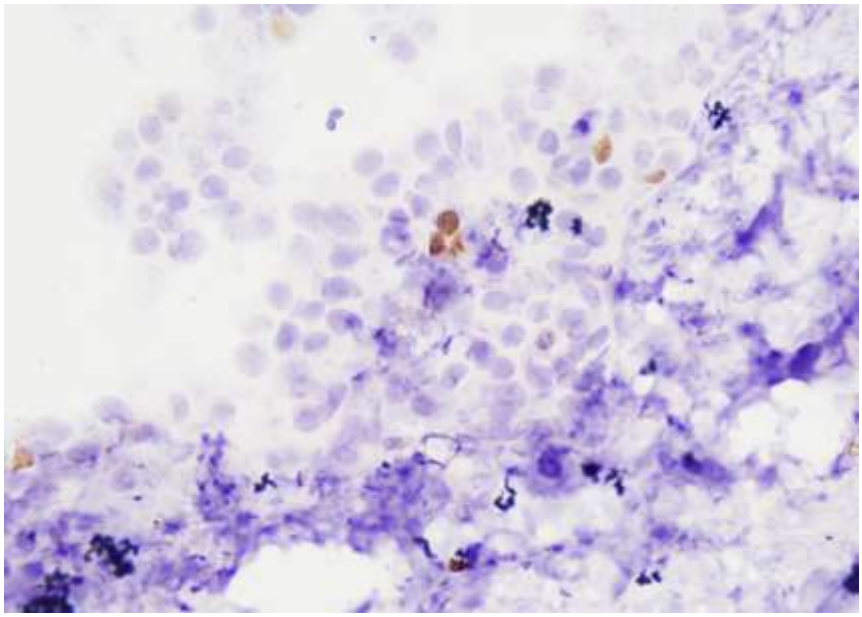


Figure 1: Well circumscribed sub-mucosal lesion

Figure 2: Atypical cells showing salt & Pepper chromatin pattern



2. Results and Discussion

Among all the NETs rectal NET has excellent prognosis provided when the tumor is diagnosed at the low-grade proliferation. Since most cases are asymptomatic, there is a possibility of missing the tumor at the lowest grade [(3)]. It is uncommon for a tumor of size less than 1 cm to metastasize, but the risk increases substantially for rectal NETs more than 2 cms[(4)]. The grading is based on mitotic index per 10 high-power fields (HPFs) and the expression of Ki67, a tumor proliferation marker [(5)] -

- Low Grade (G1): 2 mitoses/10 HPFs and <2% Ki67 index.
- Intermediate Grade (G2): 2–20 mitoses/10 HPFs and 3–20% Ki67 index.
- High grade (G3): 20 mitoses/10 HPFs and >20% Ki67 index.

With the present day understanding of the morphology of the lesion and with adjunct use of ancillary studies aid in diagnosing NET at the earliest to tailor the management required[(6)].

3. Conclusion

A complete excision for gastrointestinal tract polyps is necessary as neuroendocrine tumor holds a significant place in terms of differential diagnosis of submucosal GIT lesions. The size of the lesion is very significant for prognosis. Early and complete excision of the tumor is neccesary for the treatment.

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