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Case Report

Neuroendocrine Tumor Presentation in Rectum as an Ulceroproliferative Growth- Rare Case with Conservative Management

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Abstract

A 49-year-old male without any co-morbidity presented with history of constipation for last two months. Patient was found to have a rectal growth. Because of the suspicion of carcinoma, Computed Tomography CT Abdomen was ordered which revealed multiple metastases in liver. The final Histopathology of biopsy came out to be neuro endocrine tumor based on immunohistochemistry IHC staining. The treatment planned was conservative and not opted for surgical intervention.

Keywords: Rectal Neuroendocrine Tumor; Ulcer Proliferative Growth; Abdomen; Metastasis; Liver Mets

Introduction

Neuroendocrine tumors (NETs) in rectal region, formerly known as "carcinoid tumors" because of their peculiar characteristics, are rare. They present with an incidence of 0.17% during screening colonoscopy [1]. Neuroendocrine tumor in rectum, represent 12-27% of all NETs and 20% of gastrointestinal NETs [2].

Due to contrasting opinions on the management and diagnostic path that follows the incidental feedback of a neuroendocrine neoplasm of the rectum the precise protocol is not followed globally. Here we present the rare case report of rectum NET treated with Injection octreotide Depot 30 mg.

Case Report

A 49 years old male without any co-morbidity presented with history of constipation for last two months. Patient was evaluated for chronic constipation with colonoscopy and found to have a rectal growth. Biopsy was taken from the rectal growth. Because of the suspicion of carcinoma; Computed Tomography CT Abdomen was ordered which revealed multiple metastases in liver. The final Histopathology of biopsy came out to be neuro endocrine tumor based on immunohistochemistry IHC staining. Staging workup patient underwent combined gallium 68 Dota and F-18 FDG PET CT.

Colonoscopy of rectum- In rectum large ulcer proliferative growth was observed with large solid fecal matter. Biopsy from large ulcer proliferative growth in rectum was taken. Also, colonoscopy revealed large solid fecal matter in sigmoid. Impression from findings of colonoscopy of rectal ulcer proliferative growth was made and biopsy was taken.

Imaging

CECT abdomen reports revealed large hemi circumferential well enhancing lower rectal tumor with focal calcifications. Also, few enlarged mesorectal lymph nodes (9.6mm s.a.d) and superior rectal nodes (12mmin s.a.d) were noted. Multiple liver lesions seen in both lobes of liver (larger 7.7x6.4cm) showing peripheral nodular hyperenhancement. Few of the liver lesions show fluid level within indicating metastasis. (Figure1and 2).

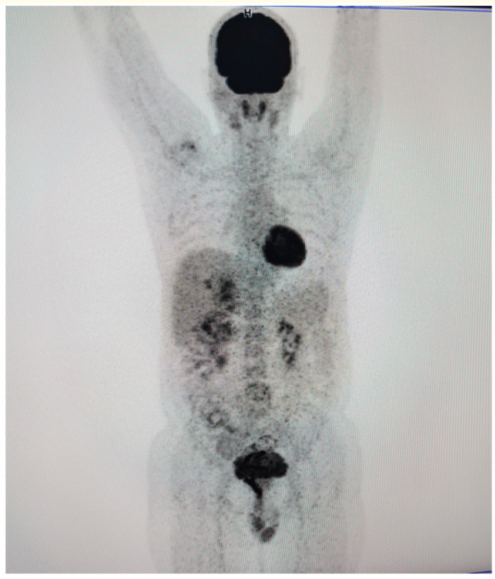

Figure 1: FDG pet CT liver lesion.

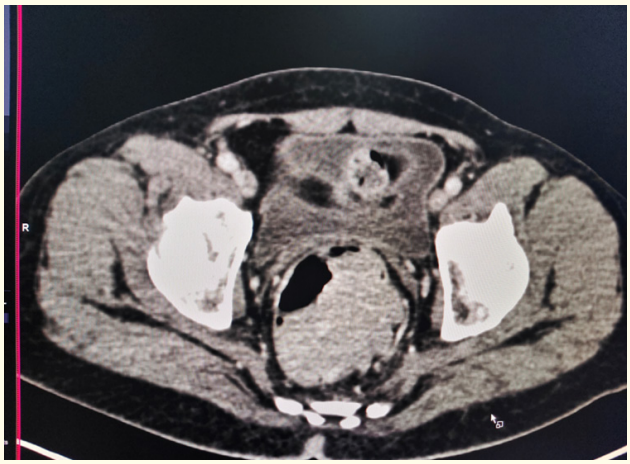

Figure 2: CT RECTAL MASS.

In a given clinical scenario, the combined study with Ga-68 DOTA-TATE and F-18 FDG PET-CT scan revealed are heterogeneously enhancing polypoidal soft tissue mass in the middle and lower 3rd rectum with intense Ga-68 DOTA-TATE tracer uptake and no significant FDG uptake was describes was indicative of well differentiated neuroendocrine tumor NET. Multiple Ga-68 DOTA-TATE tracer avid heterogeneous arterial enhancing lesion in both lobes of liver was suggestive of Metastasis. Focal Ga-68 DOTA-TATE tracer uptake in coccyx bone on right side was indicating the metastasis. Multiple Ga-68 DOTA-TATE tracer avid heterogeneous enhancing perirectal, presacral, left common iliac, external iliac lymph nodes was describing metastasis.

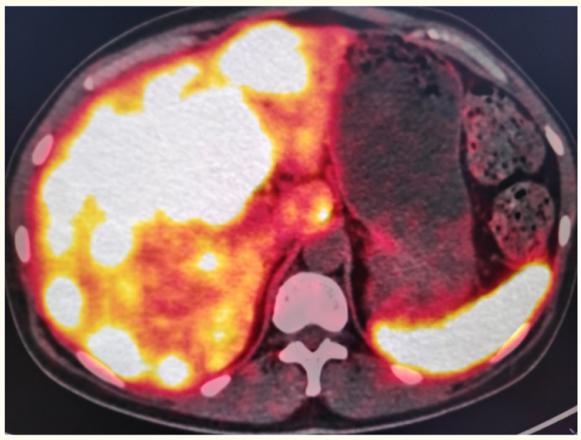

Figure 3: Ga-68 DOTA-TATE- DOTA liver mets.

BIOPSY TAKEN FROM RECTAL ULCEROPROLIFERATIVE GROWTH: Colonoscopy biopsy [histopathology report]- rectum biopsy was received in 2 bottles. Gross specimen for biopsy received was comprised in toto of 6 grey, white tissue bits, together measuring 0.8x0.4x0.2cm (all embedded).

Microscopic description of the sections submitted for histopathology revealed tumor tissue comprised of tumor cells in cords clusters and single dispersed patter. Individual cells have irregular large vesicular to hyperchromatic nucleus; few with a nucleolus and moderate to abundant eosinophilic cytoplasm. Cells are expanded lamina propria and infiltrated in between muscle fibers. Intervening tissue shows mild inflammation with focal lymphoid aggregates. Also, the focal areas of congestion were noticeable.

Special stain PAS/AB were negative

Based on microscopic picture in H and E staining impression of poorly differentiated malignancy given with following enlisted differentials

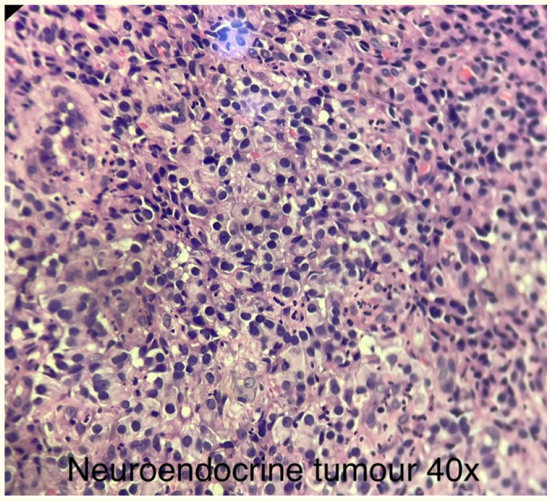

Figure 4: biopsy- Hand E stain 40 x.

- Neuroendocrine tumor
- Poorly differentiated adenocarcinoma

To give final diagnosis IHC was suggested

- IHC markers CD45, CDH17, Pan CK, CDX2, Synaptophysin, chromogranin, S-100, HMB45 and Ki 67 were done for definitive evaluation.

Result for immunohistochemical IHC staining

- Chromogranin: diffuse cytoplasmic positive stain in tumor cells figure 5
- Synaptophysin: diffuse cytoplasmic positive in tumor cells figure 6
- HMB 45 negative figure 7
- CD45 negative in tumor cells
- CDH17 diffuse cytoplasmic positive in tumor cells
- CDX2 negative
- Pan CK negative
- S100 negative in tumor cells
- Ki 67 2% figure 8

Morphology in correlation with IHC shows features are of Neuroendocrine Tumor- Well Differentiated Grade I

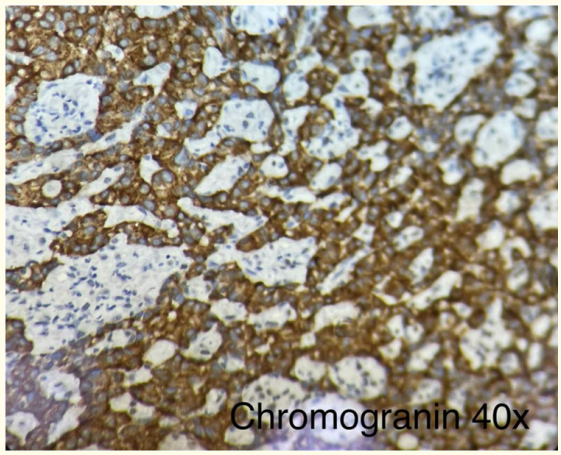

Figure 5: Chromogranin IHC STAIN 40x.

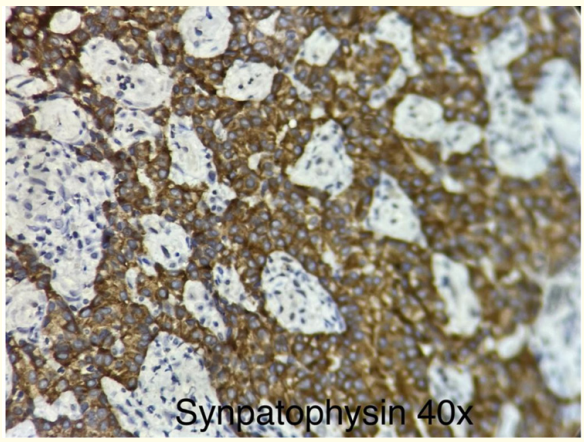

Figure 6: Synaptophysin IHC STAIN 40 x.

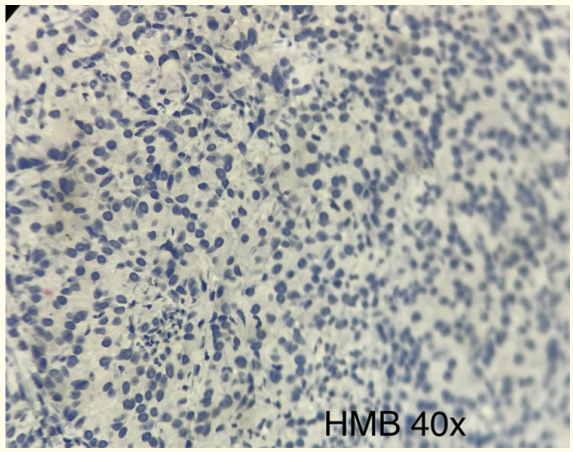

Figure 7: HMB 45 IHC STAIN 40 x.

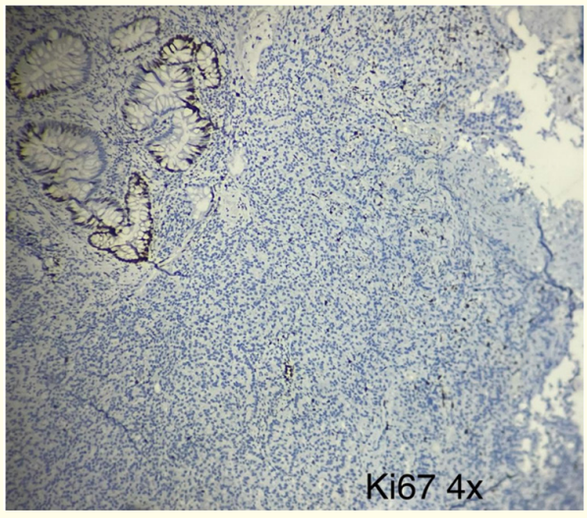

Figure 8: Ki 67 IHC STAIN 4 x.

Treatment regimen: Injection octreotide Depot 30 mg has been initiated on every 28-day basis till progression. At the time of submission of this manuscript two dosages were completed and patient is managing a active lifestyle with appropriate laxatives.

This treatment was chosen because patient symptoms were relieved by the Laxatives. Since any surgical intervention would have resulted in colostomy stoma creation which is an irreversible step and harmful for self-image of the patient. Considering that patient maintain an active sexual and physical lifestyle, stoma creation would have definitely affected him adversely. In this situation, since the symptoms were relieved by laxatives, a trial of achieving delay in surgical intervention is attempted. Since the Proliferation index of the tumor is low, a morphological reduction in size is not expected but delay in growth rate is expected.

Discussion

Most rectal NETs are asymptomatic and they are found incidentally during colonoscopy performed for colorectal cancer screening. The choice of therapeutic intervention for rectal NETs depends on their features, especially on their size.[2] NETs are well-differentiated neuroendocrine neoplasms, with low cellular atypia and proliferative activity and comprises grade G1 or G2 tumors. In rectal NETs, the role of computed tomography (CT) is not to detect the primary tumor nor to appreciate its invasion of the rectal wall, but to detect regional and distant metastases. CT has a reported mean detection rate for liver metastasis in neuroendocrine tumors of 81%. And this was exploited well in present case for diagnostic evaluation. We opted for combined Gallium-68 DOTA octreotide PET, and FDG (18F 6-fluorodeoxyglucose) PET also as this is helpful for differentiating high grade/poorly differentiated tumors that do not express somatostatin receptors [3].

Rectal NETs are mostly localized and non-functioning tumors but in advanced disease the therapy option depends on the local expertise, extension and location of liver involvement and these methods can be used as sole therapies or in combination with surgery or medical treatment. In present case the injection of octreotide Depot 30 mg is used as it is a synthetic compound derived from somatostatin, a substance normally found in the human body and inhibits the effects of certain hormones such as growth hormone [4]. These growth hormones are overproduced in NET that can lead to symptoms collectively known as "carcinoid syndrome". In the absence of secretion or symptoms of these hormones it may be termed as non-functioning or non-secretory neuro endocrine tumors. This may help in shrinking the tumor and currently patient is on follow up.

Conclusion

The clinical management of neuroendocrine tumors with long-acting repeatable (LAR) octreotide is opted strategy as conservational treatment in present rare case entity of ulcer proliferative growth of rectum. Functionally active tumors produce a variety of peptides or serotonin, responsible for symptoms. Sometimes these substances can lead to the death of the patient independently from tumor proliferation. To this, an important compound that can control symptoms in these patients are somatostatin analogs and the same are exploited in this rare reported case by us.

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