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A case of rectal neuroendocrine tumor presenting as polyp

Halil RAKICI [a,*], Remzi Adnan AKDOGAN [a], Cüneyt YURDAKUL [b], Neşe CANTURK [c]

[a] Recep Tayyip Erdoğan University, Faculty of Medicine, Gastroenterology, Rize, Turkey
[b] Recep Tayyip Erdoğan University, Training and Research Hospital, Pathology Clinic, Rize, Turkey
[c] Recep Tayyip Erdoğan University, Faculty of Medicine, Internal Diseases, Rize, Turkey

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ABSTRACT

Neuroendocrine tumor (NET) is detected in the examination of polypectomy material, presenting as rectal polyp. Since this is a rare case, we aimed to summarize the approach to rectal NET's.

Introduction

Neuroendocrine tumors originate from neuroendocrine cells of endodermal origin, spreading along the gastrointestinal tract. Prevalence of neuroendocrine tumor is around 35/100,000, including all types. They are most frequently observed in gastrointestinal system (GIS) [67%]. In GIS, they are most frequently observed at ileum [34%] and secondly at rectum [27.4%] [1–2]. Neuroendocrine tumors excrete various peptide hormones such as chromogranin A, pancreatic polypeptide, calcitonin and substance P, which may be biologically active and biological amines like neuron specific enolase, serotonin,5- hydroxytryptamine are under the control of autonomic nervous system. Most of the NET's express chromogranin A and synaptophysin.

Rectal NETs compose 1–2% of all rectal tumors, and generally demonstrate benign clinical profile. The annual incidence in United States of America is 0.93/100,000. Prevalence of rectal NETs is around 5.1/100,000. Tumors with size less than one centimeter have a low risk for metastasis. This risk increases to 60–80% at tumors with size greater than 2 cm. According to the classification by World Health Organization (W.H.O) in 2010, all NET's were considered as if they had malign potential. Proliferation index (ki-67) and mitotic count were taken as basis. Accordingly, Grade was specified as G1 ≤ 2%, G2 3–20%, and G3 > 20%. Mitotic count was indicated as G1 < 2, G2 2–20, G3 > 20 at each 10 high power fields (/10HPF). TNM classification was indicated as T1a < 1 cm–, T1b 1–2 cm–, and T2 > 2 cm + according to muscularis propria invasion. 5-year survival is 87% in localized disease, and 25% in presence of distant metastasis [1–5].

Presentation of case

A 82-year old female patient applied to our hospital with the complaint of rectal bleeding. General condition of the patient defined well and her vital signs were within the normal range (Arterial tension: 120/80 mmHg, pulse: 86/min). Her hemogram values (WBC: 7.63 K/uL, Hb:11.6 g/dL, plt:217 K/uL.) and biochemical tests were normal. In colonoscopy, sessile polyp with diameter of 1.3 cm and internal hemorrhoid were detected at rectum at 15th cm (Illustration 1). There was no other pathology in the entire parts of the colon. In pathological examination of polypectomy material, Ki-67 index was detected as 3%, mitotic count was detected as <2, and NET, invading muscularis propria, was detected (Illustrations 2 and 3). It was determined as Grade G2, T2. In whole-abdomen and thoracic computerized tomography (CT), no distant metastasis was detected. Patient was referred to surgery for resection. Low anterior resection was performed to the patient. Surgical margins were tumor free. Patient was controlled in the outpatient clinic in the postoperative first month and scheduled for monitoring with annual colonoscopy and appropriate imaging methods.

Discussion

Rate of rectal NET detection increases in the recent years. Increased awareness of both clinicians and pathologists may play

* Corresponding author. Tel.: +90 5326869760.

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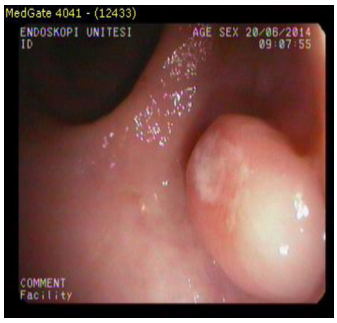

Illustration 1. Endoscopic appearence.

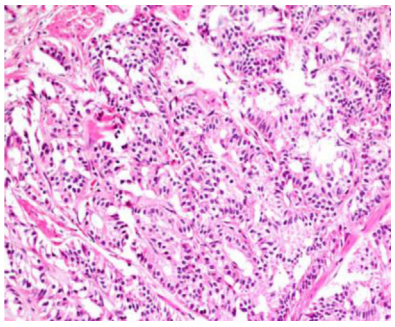

Illustration 2. Hematoxylin& eosin appearance.

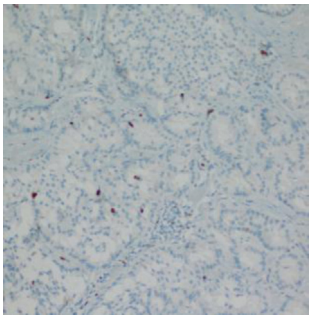

Illustration 3. Ki-67 appearance.

a role in this increase. These tumors are mostly asymptomatic and present as polyps in colonoscopies**.** A retrospective cohort study that evaluated 85 patients with rectal nets revealed that at the time of diagnosis 60–90% of this lesions are detected as small as 1 cm instantly. 46 [54%] of these patients are treated with endoscopic resection, 31 [36%] of them are treated with surgical resection and 8 [9%] are treated medically. Thirty-one patients [36%] underwent surgical resection; of these, 23 [74%] underwent transanal excision or transanal endoscopic microsurgery (TEM), 6 [19%] underwent low anterior resection, and 2 [6%] underwent abdominoperineal resection [3] . Although the ones with size less than one centimeter generally have a benign clinical course, metastasis may also be observed rarely. Endoscopic resection or disection are sufficient for treatment of tumors. Transanal excision should be considered when margins of endoscopic resection are positive. Treatment of NETs between 1 and 1.9 cm in diameter are controversial. It is difficult to predict the behavior of these tumors. Metastasis rate is between 4 and 30%. While some authors suggests rectal resection, the others advocate transanal excision or transanal endoscopic microsurgery in selected cases. Also, invasion of the tumor is another factor that determines the treatment decision. Distance between tumor and anal canal and tumor's potential to cause obstruction are also very important factors while deciding the treatment. Tumors, not invading muscularis propria, are treated by endoscopic resection or endoscopic dissection, and tumors invading are treated by surgical resection, if no distant metastasis is present. Tumors with size greater than two centimeters may have an aggressive course and poor prognosis. Metastasis can be detected 70–80% during follow-up or at the time of diagnosis. Abdominoperineal resection or low anterior resection are the necessary treatments for these tumors. Somatostatin receptor analogs are used in immunotherapy at patients with distant metastasis. However, presence of 5 distinct subtypes of somatostatin receptors creates problems in treatment. IFN (interferon) is considered to be a cost-effective treatment. PRRT (peptide receptor radio-nucleotide therapy) appears to be a key strategy in terms of treatment and imaging. In addition to these classical agents, new agents, targeting incretin (GLP-1R; GIPR) and G-protein coupled receptors, are used in treatment [3–6]. During follow-up it was suggested that rectosigmoidoscopy should be performed once in 6 months for 2 years and colonoscopy with imaging techniques once in a year. Imaging methods include abdominopelvic computed tomography, endoscopic ultrasonography, rectal MRI, and octreotide imaging (somatostatin receptor scintigraphy).

Conclusion

Rectal neuroendocrine tumors are usually seen as one subepithelial nodules as well as polyps and lesions can be seen in the form of ulcers. WHO staging should be performed to determine an appropriate treatment approach according to the 2010 guidelines.

Conflicts of interest

No conflicts of interest.

Sources of funding

No sources of funding.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Remzi Adnan Akdoğan, Cüneyt Yurdakul, Neşe Cantürk.

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