SAR Journal of Medical Case Reports

Abbreviated Key Title: *SAR J Med Case Rep*
Home page: https://sarpublication.com/journal/sarjmcr/home
DOI: https://doi.org/10.36346/sarjmcr.2026.v07i05.002

OPEN ACCESS

ISSN 2707-7780 (P)
ISSN 2709-6947 (O)

Case Report

Rectal Neuroendocrine Neoplasia- A Case Report

Dr Senthilnathan Vasan[1], Dr. Somanathan Menon[1*], Dr. Gerald Henry[2], Dr. Venugopalan K. Balan[3]
[1]Department of Surgery, Taylors University Selangor, Malaysia
[2]Department of Surgery, Sunway University, Selangor, Malaysia
[3]Department of Community Medicine, Taylors University, Selangor, Malaysia

***Corresponding Author:** Dr. Somanathan Menon
Department of Surgery, Taylors University Selangor, Malaysia

Article History: | Received: 20.07.2026 | Accepted: 14.09.2026 | Published: 17.09.2026 |

Abstract: ***Background****:* The detection rectal neuroendocrine tumors (RNETs) is increasing due to prevalence of routine colorectal cancer screenings. Although many of these tumors are considered less aggressive, their behavior can be unpredictable, presenting significant therapeutic challenges. Smaller, well-differentiated tumors that don't invade deeply can often be removed safely through local excision without affecting long-term outcomes. ***Case Report****:* In this case report, a 59-year-old patient presented with rectal bleeding after bowel movements. A colonoscopy revealed a 10 mm nodule located 7 cm from the anal verge. Subsequent biopsy confirmed it was an RNET. The tumor was completely removed through transanal excision, and further testing showed favorable markers such as low Ki-67 and negative margins. ***Conclusion****:* This case highlights that transanal excision can be an effective, organ-preserving option for carefully selected patients. However, precise staging, detailed pathology, and consistent follow-up are essential, since even small tumors may rarely spread.

Keywords: Rectal Neuroendocrine Tumors, Carcinoids, Transanal Excision, Rectal Bleeding, Endoscopic Mucosal Resection, Immunohistochemistry.

INTRODUCTION

Neuroendocrine tumors (NETs) are a complex group of growths originating from specialized Neuroendocrine cells, found throughout the body. The digestive system is the most prevalent primary site, with the rectum appearing as the most common location in recent years. Due to advancements in endoscopic tools, rectal NETs (R-NETS) are being diagnosed more often, which now account for an increasing proportion of gastrointestinal cases [1]. Though R-NETS are widely recognized as quiescent and benign "carcinoids", R-NETs are increasingly being recognized for their malignant potential, which is closely tied to tumor size, depth of invasion, and histological grade [2].

Analyses of the United States Surveillance, Epidemiology and End Results (SEER) database show that rectal NET incidence rose ten-fold since 1973, driven by awareness and screening. Research comparing endoscopic treatments for rectal NETs is still limited and often conflicting. Excision is the mainstay of treatment and depends on size of lesion. Traditional polypectomy has clear drawbacks, which has led to the rise of minimally invasive options. Endoscopic ultrasound (EUS) is valuable for assessing tumor size, features, and lymph nodes, and should guide management once NETs are diagnosed. Endoscopic mucosal resection (EMR) has inconsistent success and is best reserved for very small lesions. Endoscopic submucosal dissection (ESD) and modified EMR achieve higher complete resection rates, though ESD requires advanced skill and carries more risk. Well-designed prospective studies are needed to clarify which approach offers the best outcomes for patients [3].

This is a the case of a 59-year-old man with a history of prostate cancer treated with radiation, who was found to have a Grade 1 rectal NET. The tumor was successfully managed through transanal excision, underscoring how even small lesions can be treated

effectively when identified early and handled with precision.

CLINICAL PRESENTATION

A 59-year-old Chinese man presented with two weeks history of painless fresh PR bleeding after defecation. He occasionally experienced constipation relieved by laxatives but denied changes in bowel habits, tenesmus, appetite or weight loss. His history included prostate carcinoma treated with radical radiotherapy two years earlier, with no other significant comorbidities.

Clinical Examination

The patient was hemodynamically stable with normal vital signs and no pallor. Abdominal examination was unremarkable, and there was no inguinal lymphadenopathy. Digital rectal exam revealed no palpable masses. Proctoscopy showed Grade 2 hemorrhoids at 3, 7, and 11 O'clock without active bleeding or other lesions. Colonoscopy was arranged to exclude proximal pathology in view of the patient's age and neoplasm history.

Laboratory Investigations: Hemoglobin levels/ Renal/ Liver Profile and bleeding profile were within normal limits.

Colonoscopy Findings:

The colonoscopy revealed a solitary, small, yellowish submucosal lesion measuring approximately 0.8 cm in diameter, located 7 cm from the anal verge (Figure 1). The overlying mucosa was intact. The rest of the colon was normal.

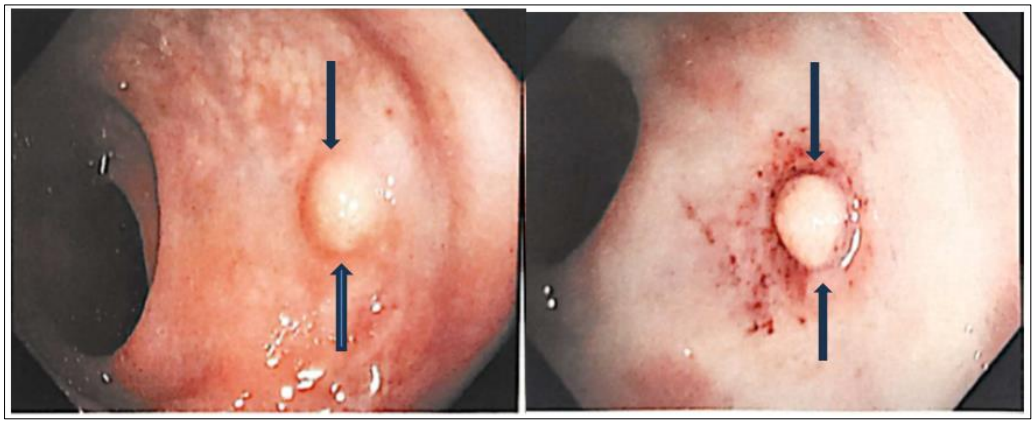


Figure 1: Colonoscopy*: Endoscopic view of the rectal lesion showing characteristic yellowish hue and submucosal elevation*

The lesion was biopsied and sent for histopathological examination (HPE) and it was reported as compatible with World Health Organization (WHO) Grade 1 Neuroendocrine Tumor.

Magnetic Resonance Imaging (MRI) of the rectum was performed to assess local invasion and lymph node status. The MRI scan (Figure 2) showed no evidence of mesorectal lymphadenopathy or invasion into the muscularis propria.

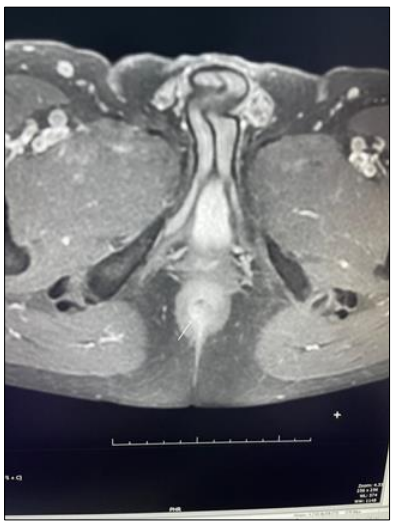
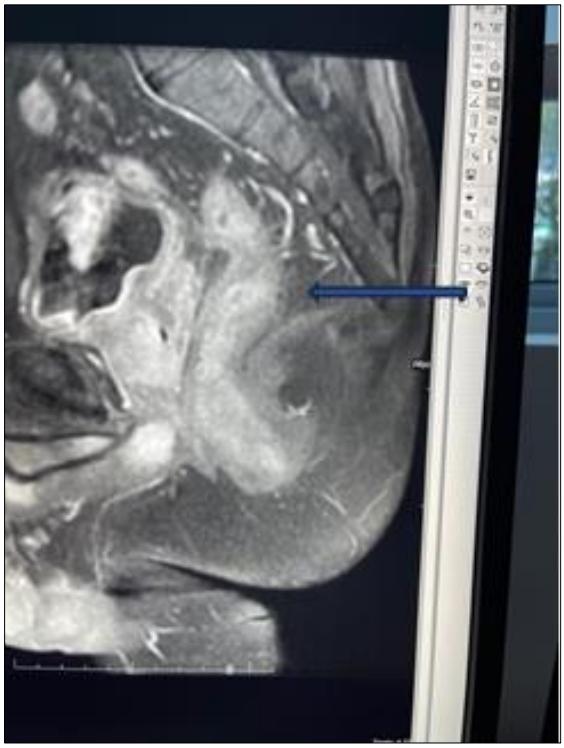


Figure 2

Further MRI scan (Figure 3) revealed normal caliber of rectum was seen with no rectal wall thickening. No enhancing lesions in the rectal region were noted. There was a clear fat plane between the prostate and rectum. The mesorectal fascia was intact with minimal perirectal fat stranding seen. A clear fat plane was seen between rectum and prostate gland /seminal vesicle anteriorly. No abnormal dilatation of vessels seen in the mesorectum.



MRI (FIG 3)

Management

All baseline laboratory investigations were normal. Given the lesion size (<1 cm), absence of nodal involvement and Grade 1 histology, the patient was counseled for local excision. A trans anal excision was performed for a <1 cm rectal NET located 7 cm from the anal verge, with clear margins achieved. Recovery was uneventful. Final HPE confirmed a WHO Grade 1 NET <1 cm with clear peripheral and deep margins.

Histopathological Report:

The final histopathological examination (HPE) confirmed the diagnosis of a WHO Grade 1 Neuroendocrine Tumor (NET) which was less than 1 cm in size with clear peripheral and deep margins. Sections of the rectal lesion was subjected to an immunohistochemistry (IHC) panel comprising of Chromogranin, CD56, Synaptophysin and Ki67. The tests showed that dual positivity for CD56 and Synaptophysin with a low proliferative index of less 2%, which was confirmatory for Grade 1 NET (Figures 4-8)

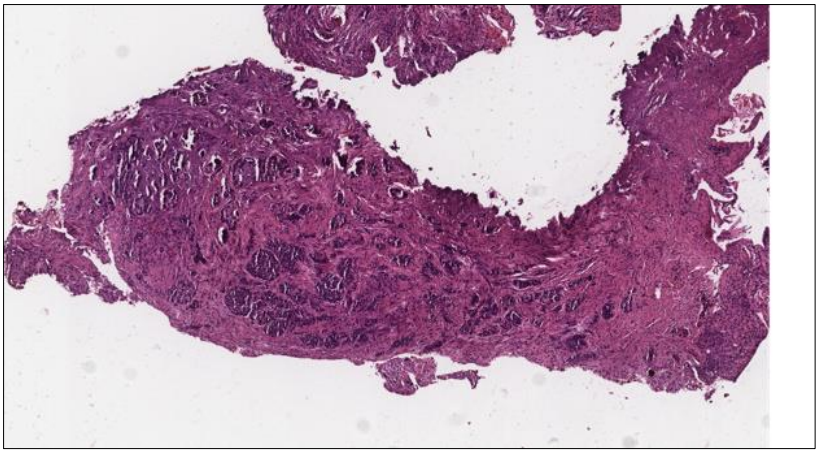


Figure 4

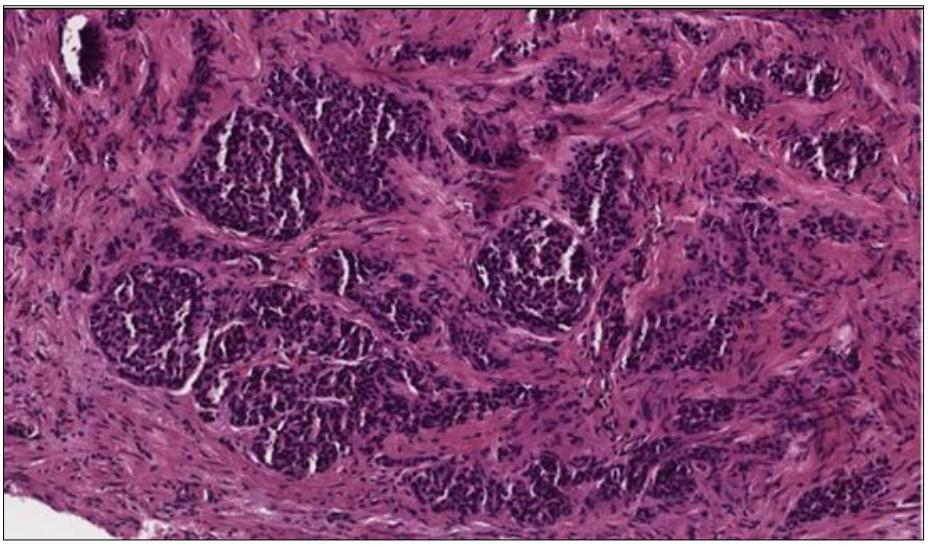


Figure 5

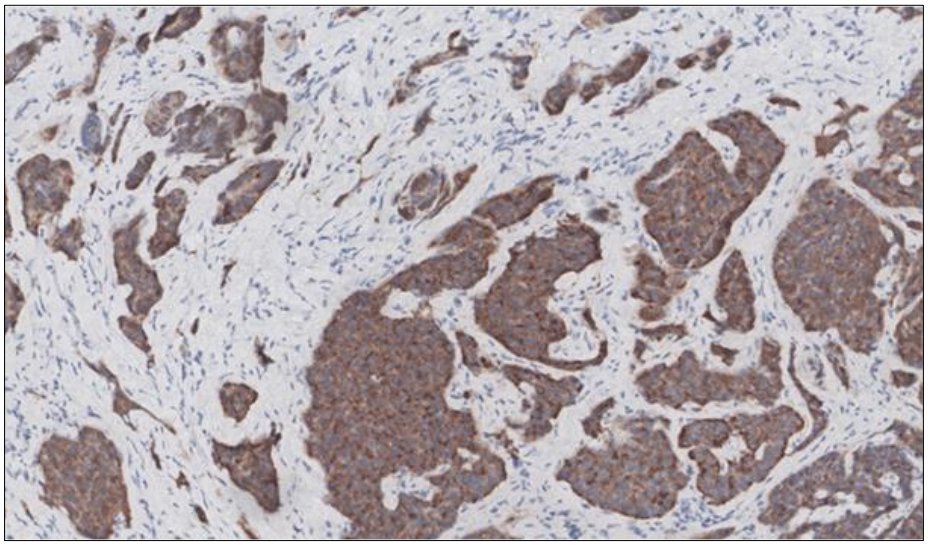


Figure 6: Synaptophysin Positive

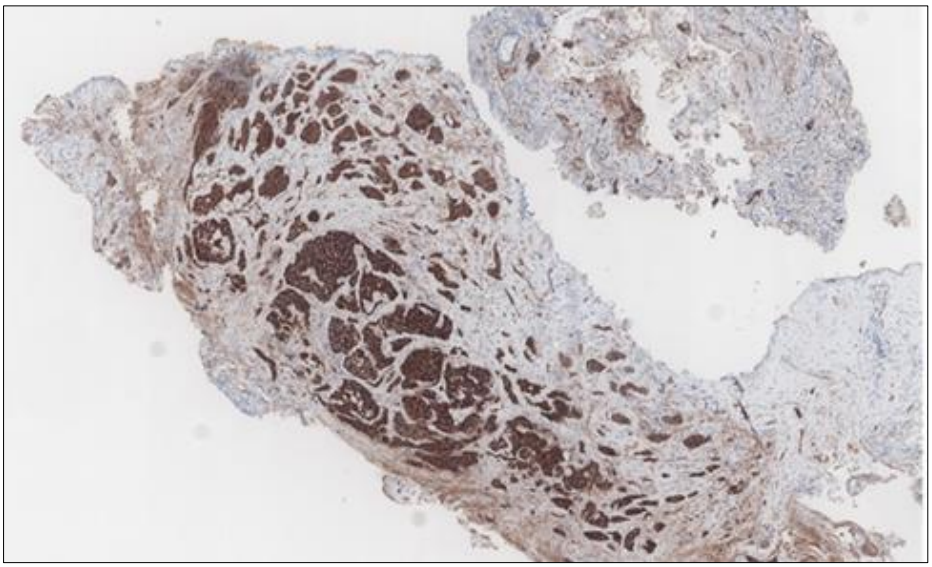


Figure 7: CD56 Positive

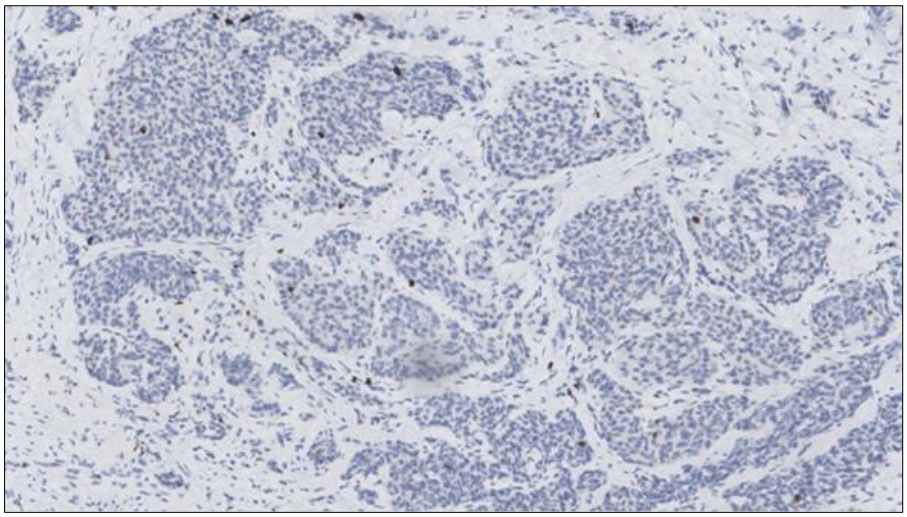


Figure 8: Ki 67 Pl less 2%

The patient remains under surveillance with planned endoscopic follow-up in 12 months.

DISCUSSION

Rectal neuroendocrine tumors (RNETs), a type of gastroenteropancreatic neuroendocrine neoplasms are increasingly detected due to widespread colorectal cancer screening and high-definition colonoscopy. Endoanal ultrasound helps assess depth of invasion and vascular involvement, which influences prognosis. Although often small and well-differentiated, RNETs can behave unpredictably, with even tiny lesions metastasizing occasionally. Management depends on tumor size, grade, invasion depth, and high-risk features such as lymphovascular involvement [4]

Epidemiology

Previously called carcinoids, gastrointestinal NETs arise from neuroendocrine cells in the gastrointestinal lining. Rectal NETs are relatively common, making up ~10% of gastrointestinal NETs and 1–2% of rectal tumours. They are usually found incidentally during colonoscopy as small (~1 cm), smooth, mobile submucosal nodules. Prognosis is generally good, with low metastatic risk unless the tumour exceeds 2 cm or invades deeper layers. Immunocytochemistry typically shows positivity for glucagon, glicentin, and pancreatic polypeptide (PP) [5].

Diagnostic Considerations

Rectal NETs are often picked up by chance during screening. They usually appear as small, round, yellowish lumps within the rectum, 4-8cm from anal verge. It is distinguished from harmless lipomas by endoscopy, scans, and tissue tests. Guidelines recommend an ultrasound scan (EUS) as the next step, where these tumors show up as dark spots in the rectal wall. Larger tumors (over 1 cm), those invading muscle, or ones with unusual features like ulcers or depressions, need CT or MRI to assess for metastasis [2].

Histopathology is central to diagnosis, and under the WHO 2019 classification tumors are grouped as neuroendocrine tumors (NET), neuroendocrine carcinomas (NEC), and mixed neuroendocrine–non neuroendocrine neoplasms (MiNEN). Rectal NETs can be further subclassified into L-cell tumors, which produce PP/PYY (pancreatic polypeptide/peptide YY) and are more common, and EC-cell tumors, which produce serotonin [6]. Immunohistochemistry helps assess how aggressive these tumors are. The most reliable markers for neuroendocrine neoplasms are chromogranin A (CgA) and synaptophysin. Ki-67, accepted by WHO and ENETS, measures tumor cell proliferation and is the strongest predictor of survival in gastroenteropancreatic non endocrine neoplasms (GEP-NENs). CgA, however, is less sensitive in certain malignancies like hindgut carcinoids, where staining is seen in only 20–50% of cases. Synaptophysin, a membrane glycoprotein, is considered a robust marker of neuroendocrine cells, showing strong and diffuse cytoplasmic staining [7].

Treatment of Rectal NETS

Rectal neuroendocrine tumors (NETs) are increasingly detected, often at earlier stages. Given their malignant potential, thorough evaluation—particularly with endoscopic ultrasound—is essential for treatment planning. Current guidelines recommend endoscopic mucosal resection (EMR) for lesions under 10 mm, as it is generally safe with low complication risk. The optimal technique remains debated. Endoscopic submucosal dissection (ESD), typically performed in specialized centers, achieves high complete resection rates but carries greater risks such as perforation. EMR outcomes are variable, though modified approaches, including band ligation assisted EMR, have improved success [8].

Rationale for Local Excision of Rectal NETs

Multiple guidelines including those by the European Neuroendocrine Tumor Society (ENETS) support local resection for tumors <10 mm with G1

characteristics and submucosal confinement. These features are associated with excellent long-term survival and minimal metastatic risk [9].While endoscopic polypectomy is commonly used for small superficial or polypoid lesions, it is associated with a significant risk of positive resection margins. A study by Jihye Kim *et al*., reported that in histologically complete resections, 74.4% required additional resection [10].

Endoscopic Resection Techniques

The conventional technique of standard EMR is done with a hot snare after a submucosal injection with normal saline and diluted adrenaline. A snare is then applied to the base of the lesion and electrocautery is used meticulously to resect the lesion [11].

Endomucosal Resection and Band Ligation

EMR is widely used for colonic polyps, but in rectal neuroendocrine tumors (NETs) it often leaves residual disease, with incomplete removal rates up to 62%. For small rectal NETs (≤10 mm), band ligation-assisted EMR has proven safe and effective. The tumor is banded, then resected with a snare placed below, allowing a deeper cut. In a study by Byoung Wook Bang and colleagues, this method achieved 100% complete removal at both margins, with almost no post-operative bleeding [12].

Endoscopic Submucosal Dissection

Endoscopic Submucosal Dissection (ESD) is an advanced endoscopic technique used to remove gastrointestinal (GI) tumors in one piece (en bloc). The procedure involves injecting fluid under the tumor to lift it, carefully cutting around the mucosa, and then dissecting the connective tissue beneath. ESD is particularly effective for rectal neuroendocrine tumors (NETs), with studies reporting complete removal rates between 87% and 100%. However, it is technically demanding, takes longer than Endoscopic Mucosal Resection (EMR), and carries higher risks of bleeding and perforation [13].

Transanal Techniques

Transanal techniques—including traditional excision, transanal endoscopic microsurgery (TEM), and transanal minimally invasive surgery (TAMIS) offer superior visualization, precise dissection, and the ability to perform wide or total resections when needed. These methods enhance R0 resectability, particularly in fibrotic or scarred tumors after incomplete attempts. Atallah *et al*., demonstrated excellent oncologic outcomes with TAMIS in benign and early rectal malignancies, achieving high R0 rates with minimal complication [14].

Outcomes Following Trans Anal Excision

Studies consistently demonstrate favorable outcomes for small rNETs treated with local excision. In a study by Chengguo Li *et al*., it reported that R-NETs measuring 1–2 cm generally have a favorable prognosis and local excision should be the preferred choice. The quality of life (QOL) was also not compromised [15].

Importance of Histopathological Margin Assessment

A full check of excised tissue is vital, as positive margins raise recurrence risk and may require further surgery. This case shows how transanal excision provides enough tissue for diagnosis, confirms complete removal and lowers postoperative complications. The tumor's features chromogranin and synaptophysin expression, Ki-67 under 1%, and no lymph vessel invasion indicate a favorable prognosis [16]. Despite the excellent prognosis after complete resection in small, well-differentiated R-NETs, they may behave in an unpredictable manner, and rare late metastases have been reported. Very few indications on surveillance are available and basically supported by experts' opinions and protocols rather than evidence-based guidelines. Based on the 2017 ENETS (European Neuroendocrine Tumor Society) guidelines, tumor size, grade, and operative outcome are the basis for follow-up and postoperative surveillance [8].

Clinical Implications

This case report further reinforces several key clinical principles:

a) Accurate preoperative staging is advised, to establish the layer of involvement and here MRI was used to ensure suitability for local excision.
b) Trans-anal excision is one of the best methods to assure margin control and complete resection, especially in low-lying lesions with respect to the anal margin.
c) Immunohistochemistry, lymphovascular invasion, and margin status-both vertical and lateral-are histopathological markers that guide prognosis and surveillance.
d) Long-term follow-up, even in cases with a low risk, helps watch out for late recurrence or metastases.

CONCLUSION

A 59-year-old man presented with PR bleeding and a small rectal neuroendocrine tumor, just 10 mm in size was discovered. After investigations it was removed through minimally invasive transanal excision. The final histopathological examination (HPE) confirmed the diagnosis of a WHO Grade 1 Neuroendocrine Tumor (NET) which was less than 1 cm in size with clear peripheral and deep margins, low grade. Because of these reassuring features, the local removal done was enough and no major surgery was needed. This case shows how careful staging helps avoid unnecessary surgeries while still curing the disease. For small, low-risk rectal neuroendocrine tumors, this approach offers the best outcome: effective treatment, preserved function, and minimal invasiveness. Follow-up with endoscopy is advised to confirm ongoing remission. The outlook is excellent, reflecting the gentle nature of this tumor type.

REFERENCES

1. Ni SJ, Sheng WQ, Du X. Pathologic research update of colorectal neuroendocrine tumors. World Journal of Gastroenterology. Baishideng Publishing Group Co; 2010. p. 1713–9. doi:10.3748/wjg.v16.i14.1713 PubMed PMID: 20380002.
2. Maione F, Chini A, Milone M, Gennarelli N, Manigrasso M, Maione R, et al. Diagnosis and management of rectal neuroendocrine tumors (Nets). Diagnostics. Multidisciplinary Digital Publishing Institute (MDPI); 2021. doi:10.3390/diagnostics11050771
3. Chablaney S, Zator ZA, Kumta NA. Diagnosis and management of rectal neuroendocrine tumors. Clinical Endoscopy. Korean Society of Gastrointestinal Endoscopy; 2017. p. 530–6. doi:10.5946/ce.2017.134
4. Mandair D, Caplin ME. Colonic and rectal NET's. Best Practice and Research: Clinical Gastroenterology. Bailliere Tindall Ltd; 2012. p. 775–89. doi:10.1016/j.bpg.2013.01.007
5. Klöppel G, Anlauf M. Epidemiology, tumour biology and histopathological classification of neuroendocrine tumours of the gastrointestinal tract. Best Practice and Research: Clinical Gastroenterology. Bailliere Tindall Ltd; 2005. p. 507–17. doi:10.1016/j.bpg.2005.02.010 PubMed PMID: 16183524.
6. Volante M, Grillo F, Massa F, Maletta F, Mastracci L, Campora M, et al. Neuroendocrine neoplasms of the appendix, colon and rectum. Pathologica. Pacini Editore S.p.A./AU-CNS; 2021. p. 19–27. doi:10.32074/1591-951X-230 PubMed PMID: 33686307.
7. Kyriakopoulos G, Mavroeidi V, Chatzellis E, Kaltsas GA, Alexandraki KI. Histopathological, immunohistochemical, genetic and molecular markers of neuroendocrine neoplasms. Ann Transl Med. 2018 Jun;6(12):252–252. doi:10.21037/atm.2018.06.27
8. Gallo C, Invernizzi P, Massironi S, Rossi RE, Cavalcoli F, Barbaro F, et al. Rectal neuroendocrine tumors: Current advances in management, treatment, and surveillance. World Journal of Gastroenterology. Baishideng Publishing Group Inc; 2022. p. 1123–38. doi:10.3748/wjg.v28.i11.1123 PubMed PMID: 35431507.
9. Falconi M, Bartsch DK, Eriksson B, Klöppel G, Lopes JM, O'Connor JM, et al. ENETS consensus guidelines for the management of patients with digestive neuroendocrine neoplasms of the digestive system: Well-differentiated pancreatic non-functioning tumors. Neuroendocrinology. 2012. p. 120–34. doi:10.1159/000335587 PubMed PMID: 22261872.
10. Kim J, Kim JH, Lee JY, Chun J, Im JP, Kim JS. Clinical outcomes of endoscopic mucosal resection for rectal neuroendocrine tumor. BMC Gastroenterol. 2018 Jun 5;18(1). doi:10.1186/s12876-018-0806-y PubMed PMID: 29866049.
11. Pimentel-Nunes P, Ortigão R, Afonso LP, Bastos RP, Libânio D, Dinis-Ribeiro M. Endoscopic Resection of Gastrointestinal Neuroendocrine Tumors: Long-Term Outcomes and Comparison of Endoscopic Techniques. GE Port J Gastroenterol. 2023 Mar 14;30(2):98–106. doi:10.1159/000521654
12. Bang BW, Park JS, Kim HK, Shin YW, Kwon KS, Kim JM. Endoscopic Resection for Small Rectal Neuroendocrine Tumors: Comparison of Endoscopic Submucosal Resection with Band Ligation and Endoscopic Submucosal Dissection. Gastroenterol Res Pract. 2016;2016. doi:10.1155/2016/6198927
13. Hong SM, Baek DH. Endoscopic treatment for rectal neuroendocrine tumor: which method is better? Clin Endosc. 2022 Jul 1;55(4):496–506. doi:10.5946/ce.2022.115
14. Atallah S, Albert M, Larach S. Transanal minimally invasive surgery: A giant leap forward. Surg Endosc. 2010;24(9):2200–5. doi:10.1007/s00464-010-0927-z PubMed PMID: 20174935.
15. Li C, Yu M, Liu W, Zhang W, Jiang W, Zhang P, et al. Long-term outcomes of 1–2 cm rectal neuroendocrine tumors after local excision or radical resection: A population-based multicenter study. Heliyon. 2024 Apr 15;10(7). doi:10.1016/j.heliyon.2024.e28335
16. Modlin IM, Lye KD, Kidd M. A 5-decade analysis of 13,715 carcinoid tumors. Cancer. 2003 Feb 15;97(4):934–59. doi:10.1002/cncr.11105 PubMed PMID: 12569593.