

MRI Appearance of Primary Rectal Melanoma: A Rare Entity

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DOI: <https://doi.org/10.36347/sasjm.2026.v12i05.005>

| Received: 09.03.2026 | Accepted: 26.04.2026 | Published: 01.05.2026

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Abstract

Case Report

Primary anorectal melanoma is a rare mucosal tumor with aggressive behavior and poor prognosis [1,2]. Pelvic magnetic resonance imaging [MRI] is the modality of choice for preoperative assessment, allowing accurate lesion characterization and evaluation of locoregional extension [3,4]. We report the case of a 65-year-old woman presenting with an anorectal mass. Histologically confirmed as rectal melanoma. MRI enabled staging as T3 N0 Mx and demonstrated typical morphological and signal characteristics of this rare entity. Histologically, it was confirmed as rectal melanoma. In light of this observation, we discuss the radiological features of anorectal melanoma, its differential diagnosis, and the role of imaging in therapeutic management [3,4,7].

Keywords: Anorectal melanoma, pelvic MRI, rare tumor, imaging, radiology.

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INTRODUCTION

Primary anorectal melanoma is an extremely rare malignant tumor, accounting for less than 1% of anorectal cancers and less than 3% of all malignant melanomas [1,2]. It arises from melanocytes located in the mucosa of the anal canal and distal rectum and is characterized by aggressive biological behavior and poor prognosis [1,3].

The clinical presentation is often nonspecific, including rectal bleeding, anal pain, changes in bowel habits, or a rectal mass, frequently leading to delayed diagnosis and advanced disease at presentation [2,4]. Because of its rarity and variable appearance, anorectal melanoma is often misdiagnosed as hemorrhoids or rectal adenocarcinoma [3].

Imaging plays a crucial role in diagnosis and staging, with pelvic magnetic resonance imaging [MRI] being the modality of choice for locoregional assessment. MRI allows accurate evaluation of tumor morphology, depth of invasion, involvement of sphincteric structures, and relationships with adjacent pelvic organs, which are essential for therapeutic planning [4,5].

CLINICAL OBSERVATION

A 65-year-old woman presented with chronic rectal bleeding associated with a sensation of an anorectal mass and moderate deterioration of general

condition. Clinical examination revealed a budding mass palpated at the anal verge. Endoscopic biopsies confirmed malignant rectal melanoma. Pelvic MRI was performed as part of the pre-therapeutic assessment.

MRI Findings

Pelvic MRI demonstrated:

- A left-sided anorectal mass centered on the anal canal, with endoluminal exophytic growth involving the lower and initial mid-rectum [Figure 1, 2, 3, 4].
- The lesion was in mixed signal intensity on T1-weighted images [figure 1] and high signal on T2-weighted images [figure 2 [a, b]], showed diffusion restriction [figure 3 [a,b]] and demonstrated intense heterogeneous enhancement after contrast administration [figure 4].
- The tumor infiltrated the internal anal sphincter and adjacent left levator ani/puborectalis muscles [Figure 1, 2, 3, 4].
- Locoregional invasion classified as T3, without involvement of adjacent organs [Figure 1, 2, 3, 4].
- No suspicious pelvic or inguinal lymphadenopathy was identified [N0] [figure 3 [a,b]].

Overall MRI findings were consistent with a locally advanced anorectal tumor staged as T3 N0 Mx, justifying multidisciplinary therapeutic planning [Figure 1, 2, 3, 4].

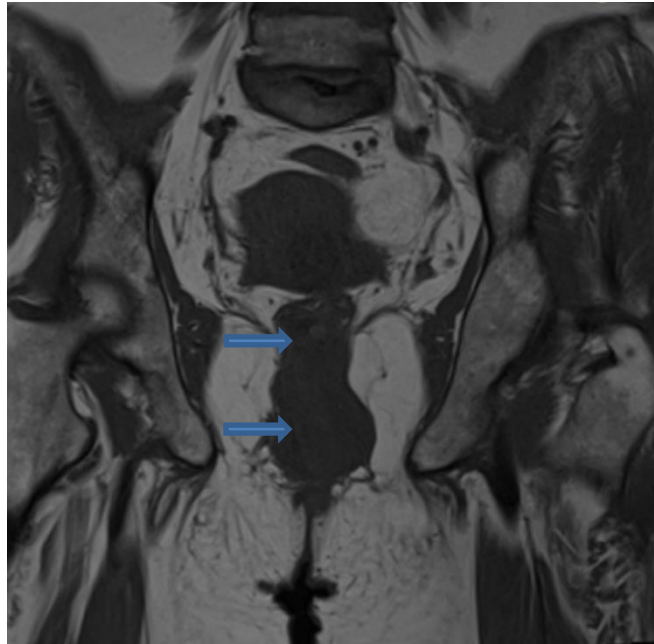


Figure 1: anorectal mass showed in mixed signal intensity on T1-weighted images [coronal plane]

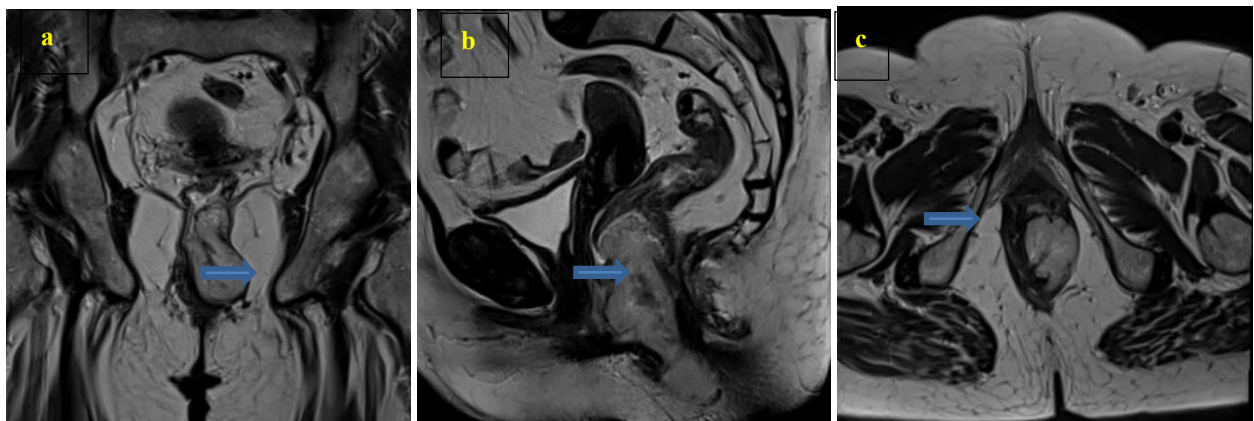


Figure 2 [a, b, c] : high signal on T2-weighted images of the tumor in coronal [a], sagittal [b], and axial [c] planes

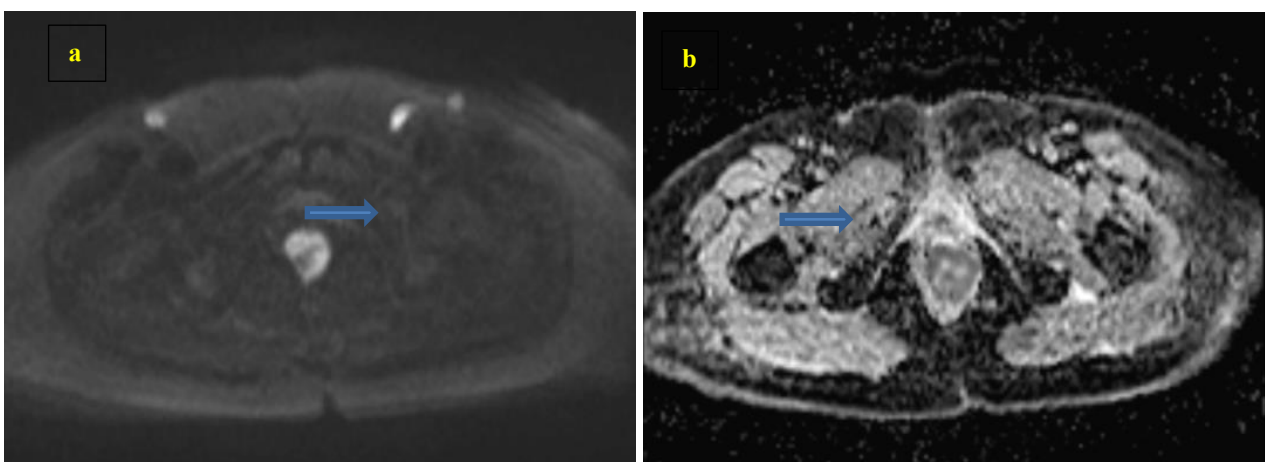


Figure 3 [a, b]: The tumor showed high signal on diffusion-weighted imaging [DWI] [a] with low apparent diffusion coefficient [ADC] [b]

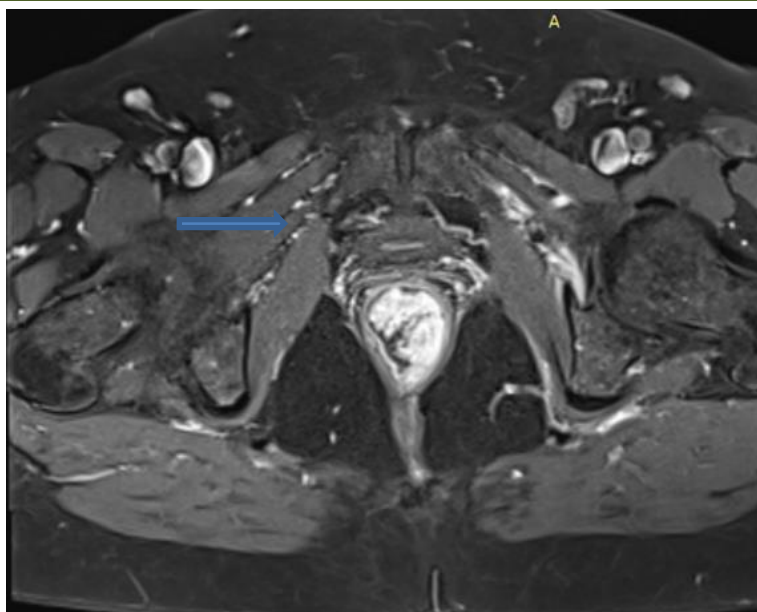


Figure 4 : Axial plane of T1 FS after contrast administration showing intense heterogeneous enhancement of the tumor

DISCUSSION

1. Role of MRI in Rectal Melanoma

MRI is considered the reference imaging technique for the locoregional evaluation of rare anorectal tumors, including primary anorectal melanoma [4,5]. It provides excellent soft-tissue contrast, enabling precise assessment of tumor size, extent of rectal wall invasion, and involvement of perirectal tissues and sphincteric muscles [5].

Melanomas typically contain melanin, which produces characteristic signal features on MRI, classically appearing hyperintense on T1-weighted images and heterogeneous or hypointense on T2-weighted images [6]. These signal characteristics may help differentiate melanoma from rectal adenocarcinoma, which usually demonstrates low signal intensity on T1-weighted images and high signal intensity on T2-weighted images [6,7]. However, amelanotic melanomas may lack these typical features, making histological confirmation mandatory [3].

2. Differential Diagnosis

The MRI differential diagnosis of an anorectal mass includes rectal adenocarcinoma, neuroendocrine tumors, gastrointestinal stromal tumors [GIST], lymphoma, and inflammatory or infectious lesions [5,7]. Recognition of atypical signal characteristics and unusual tumor location should raise suspicion for rare entities such as melanoma [6].

3. Clinical Impact

Accurate MRI staging is essential for determining the optimal therapeutic strategy, including the choice between local excision and more extensive surgical procedures such as abdominoperineal resection [4,8]. MRI also contributes to the evaluation of lymph

node involvement and guides the use of adjuvant therapies, including radiotherapy and immunotherapy [8].

Despite advances in imaging and treatment, anorectal melanoma remains associated with a poor prognosis, with reported 5-year survival rates generally below 20%, largely due to early metastatic spread and delayed diagnosis [1,2,8].

CONCLUSION

Pelvic MRI is an indispensable tool in the diagnostic and therapeutic management of rare primary rectal melanomas [3-5]. It provides precise locoregional staging and contributes to differential diagnosis through its specific signal characteristics [6,7]. Thorough knowledge of these radiological features may improve early detection and optimize therapeutic strategies, despite the intrinsically unfavorable prognosis of this entity [1,2,8].

Conflict of interest: The authors report no conflicts.

REFERENCES

1. MRI features and clinicopathologic correlations in primary anorectal malignant melanoma. *Journ of Magn Reson Imag*. 2018. PubMed
2. Primary anorectal melanoma: clinical and imaging case description. *Am J Gastroenterol Case Reports*. 2022. Lippincott Journals
3. Quantitative MRI differentiation of anorectal melanoma vs low rectal cancer. *Precis Clin Med*. 2021. PMC
4. Beyond adenocarcinoma: MRI of uncommon rectal neoplasms and mimickers. *Insights Imaging*. 2019. PubMed

5. Case series: anorectal melanoma with MRI correlation. *Medecinesfax.org*. 2025. medecinesfax.org
6. Anorectal melanoma clinical case reports [2024]. *ACG Case Reports Journal*. Lippincott Journals
7. Radiologic features of rectal melanoma on CT/MRI. *Clin Imag Sci*. 2015. Journal of Clinical Imaging Science
8. Rectal melanoma case report and literature review [2024]. *Pan African Med J Clinical Med*. clinical-medicine.panafrican-med-journal.com