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Society of Abdominal Radiology  
Disease-Focused Panels



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# Neuroendocrine tumor of the rectum

*Presented By:*

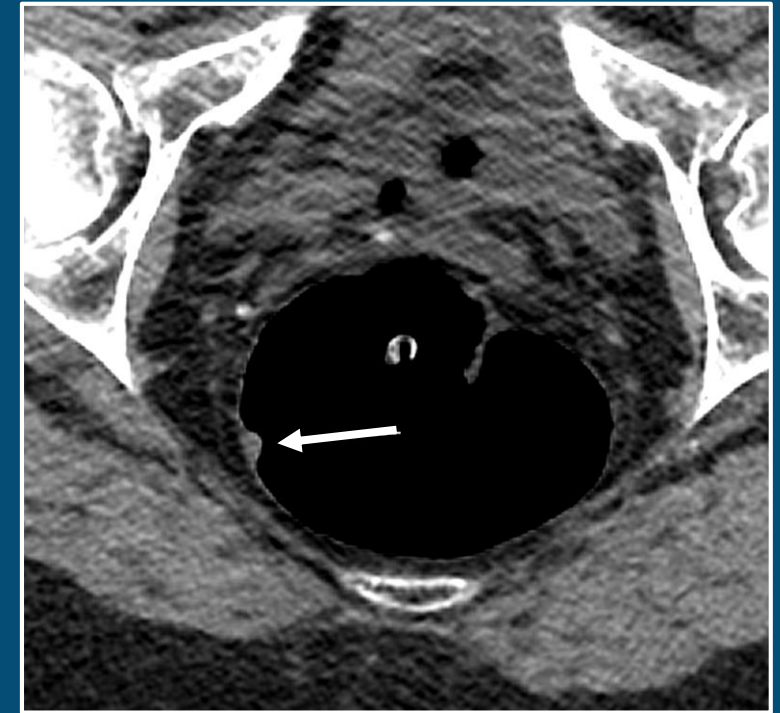
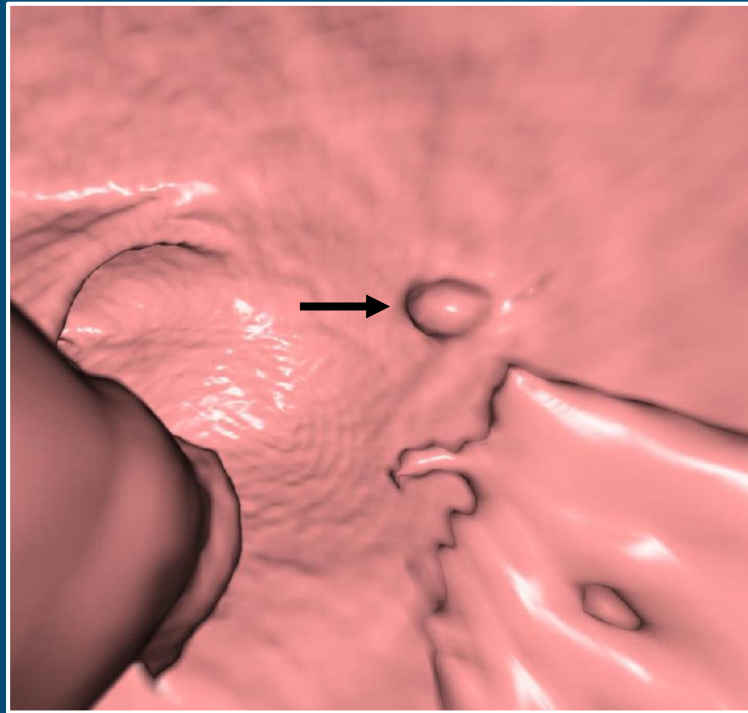
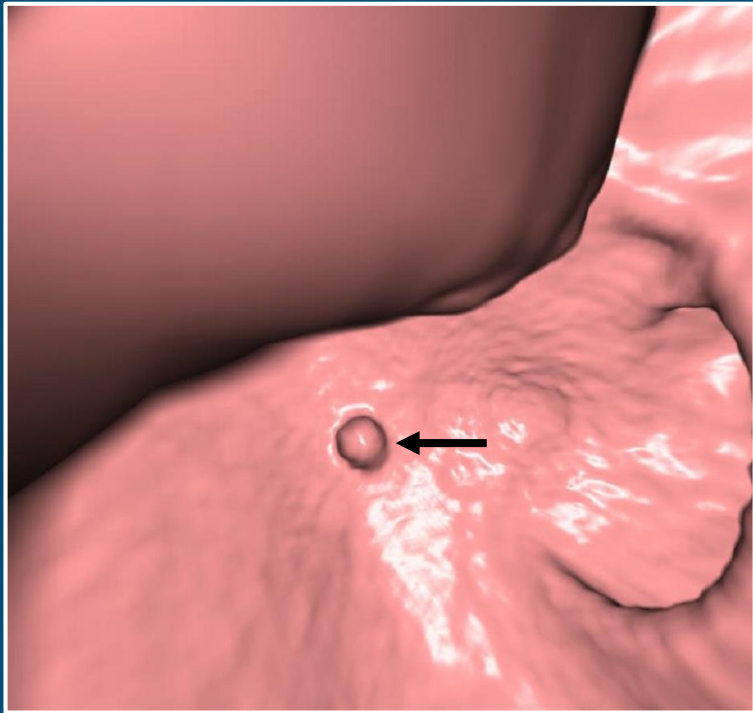
*David D.B. Bates MD*

*Memorial Sloan Kettering Cancer Center*

# Rectal neuroendocrine tumors

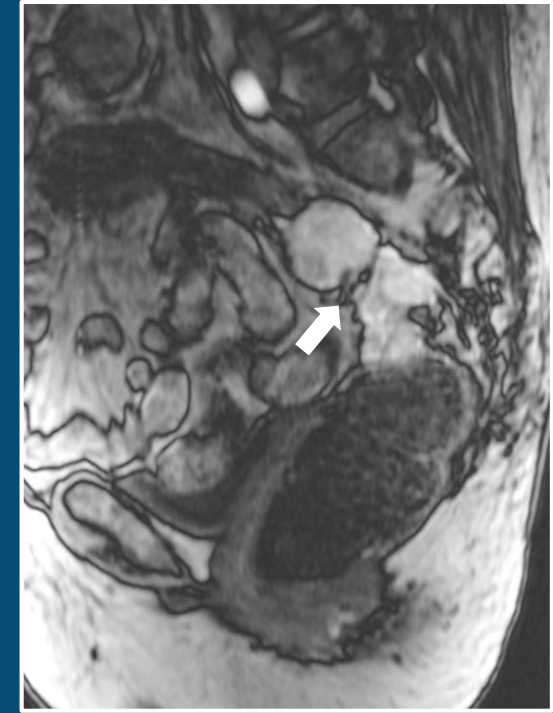
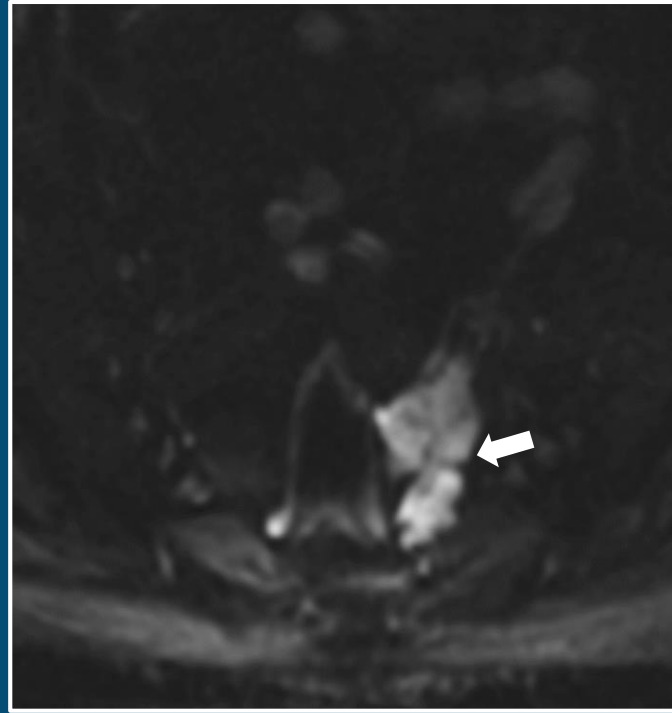
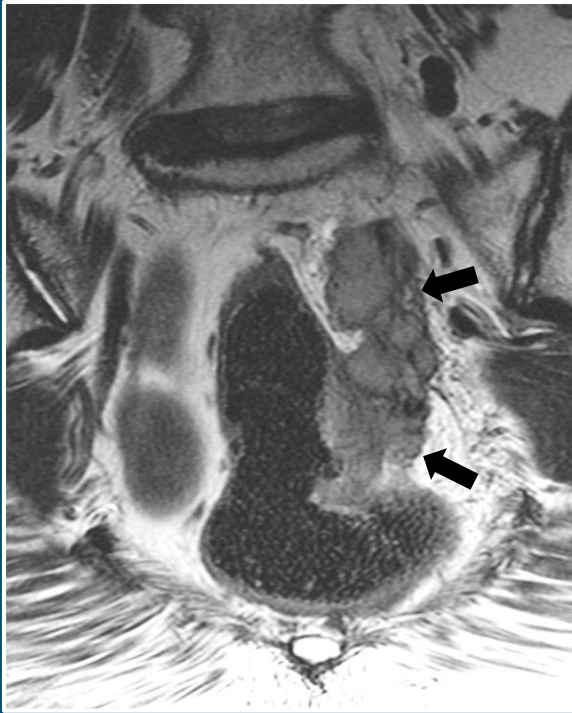
- Neuroendocrine tumors (NET) of the GI tract are rare, but the incidence has increased over time
- Increased incidence may be related to increased frequency of endoscopic procedures detecting small lesions
- Small bowel NETs are thought to be most common, but some suggest rectal NETs may become more common
- Rectal NET shows no gender preference, on average in 50's
- Often asymptomatic, especially small lesions. Can present with pain, bleeding or constipation; "carcinoid" syndrome presentation is uncommon for rectal NET

# Case 1: Small, low grade rectal NET



72 year-old female with a 0.6 cm polyp on the right lateral rectal wall seen on virtual colonography (arrows, A and B). The small submucosal polyp was confirmed on CT source images (arrow, C). Biopsy showed a well differentiated NET, intermediate grade (G2), with Ki-67 proliferation index of 5.4%. Following endoscopic excision, the patient has been NED for several years.

# Case 2: Large, high grade rectal NET

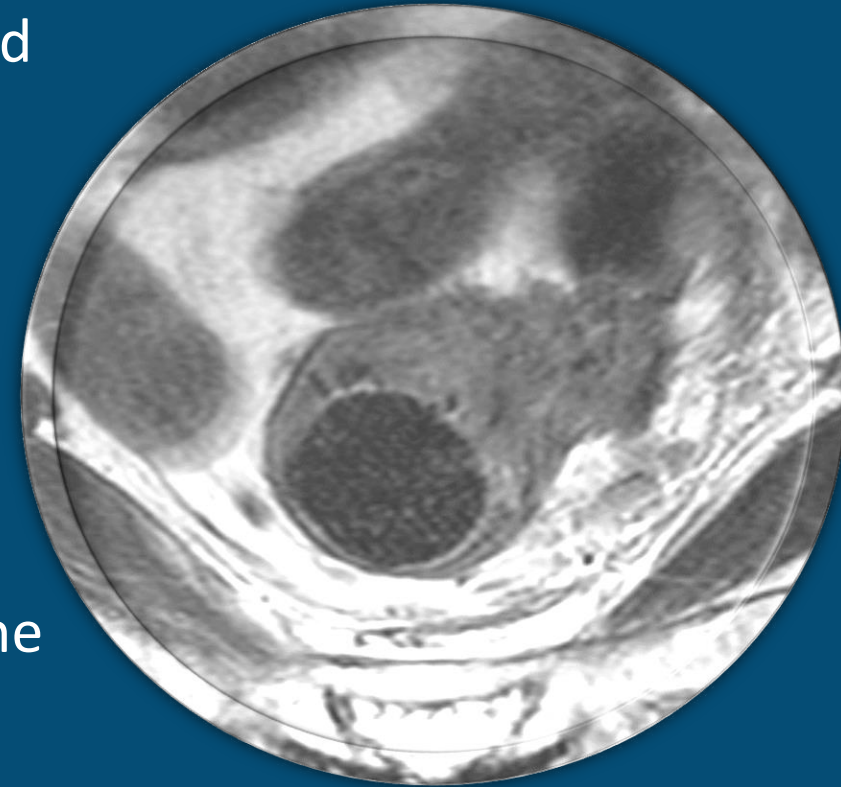


79 year-old female with a large T2-intermediate signal mass arising from the mid to upper rectum. There is extension into the mesorectal fat (arrow, A), as well as restricted diffusion (arrow, B) and avid homogenous post-contrast enhancement (arrow, C).

Images for this case from: Bates DDB, de Paula MCF, Horvat N, Sheedy S, Lall C, Kassam Z, Pickhardt P, Lalwani N, Ganeshan D, Petkovska I. Beyond adenocarcinoma: MRI of uncommon rectal neoplasms and mimickers. *Abdom Radiol (NY)*. 2019 Nov;44(11):3581-3594.

# Imaging features of rectal NET

- On MRI → usually a small submucosal nodule, and most are < 1 cm
- A minority of rectal NET (~5%) are larger than 2 cm and tend to be higher grade/poorly differentiated histology
- Typically T1 iso- and T2 iso- to hyperintense
- Restricted diffusion and diffuse homogenous enhancement
- Superficial appearance due to location of enteroendocrine cells in the submucosa or muscularis mucosa
- Lymph node metastases are uncommon for small low grade rectal NET, but the risk of nodal metastases is higher for larger, poorly differentiated rectal NET



# References

- Bates DDB, de Paula MCF, Horvat N, Sheedy S, Lall C, Kassam Z, Pickhardt P, Lalwani N, Ganeshan D, Petkovska I. *Beyond adenocarcinoma: MRI of uncommon rectal neoplasms and mimickers*. *Abdom Radiol (NY)*. 2019 Nov;44(11):3581-3594.
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- Weinstock B, Ward SC, Harpaz N, Warner RR, Itzkowitz S, Kim MK. *Clinical and prognostic features of rectal neuroendocrine tumors*. *Neuroendocrinology*. 2013; 98(3):180-7.
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