Perianal Leiomyoma – a rare diagnosis to consider in perineal masses

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Introduction

- Gastrointestinal leiomyomas are rare smooth muscle tumours. Perianal leiomyomas, a subset of this category, are extremely rare comprising 3.8% of all benign soft tissue tumours.

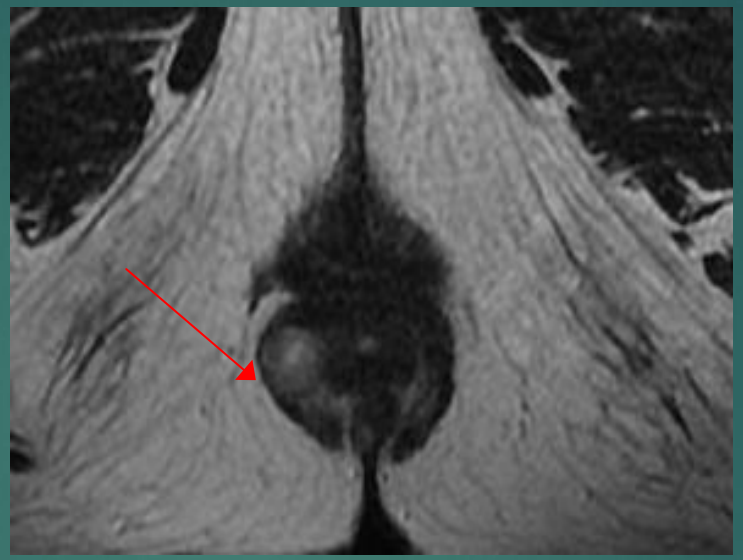
- Despite being a rare entity, perineal leiomyomas should be in the differential list for perineal soft tissue masses. MRI is the main diagnostic tool for perineal leiomyomas as PET-CT can show increased FDG avidity due to its smooth muscle contents.

- These lesions are benign with no malignant potential and once excised have a very low recurrence rate.

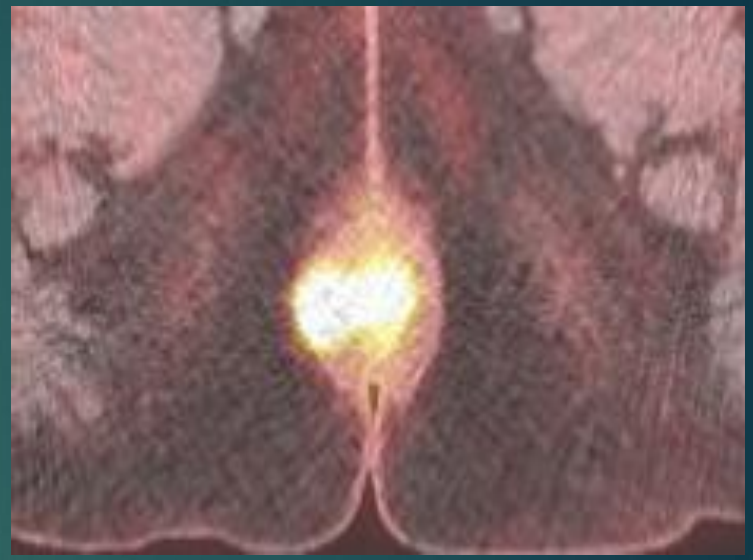
- We will be presenting three patients presenting with perineal soft tissue lesions which were found to be leiomyomas on histology.

CASE 1

- 48 ♀
- Presentation: Non-specific abdominal pain and raised faecal calprotectin.
- This patient was diagnosed with a mid rectal tumour and subsequently had MRI staging. The lesion was not reported on the initial MRI pelvis imaging and subsequently noted on repeat MRI imaging 5 months later.
- This patient then went on to PET-CT which showed avidity and underwent a biopsy under examination under anaesthesia (EUA) which was subsequently excised.
- A leiomyoma was proven on histology.



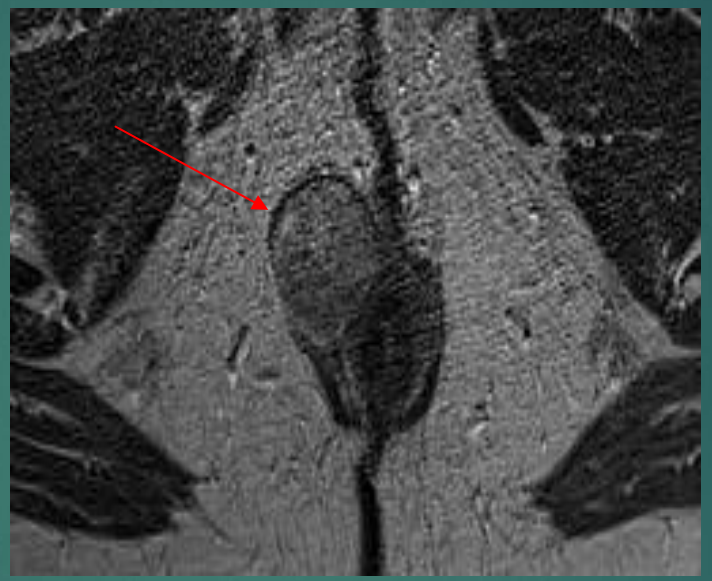
A right soft tissue lesion appreciated on axial T2 MRI was found to be a perineal Leiomyoma.

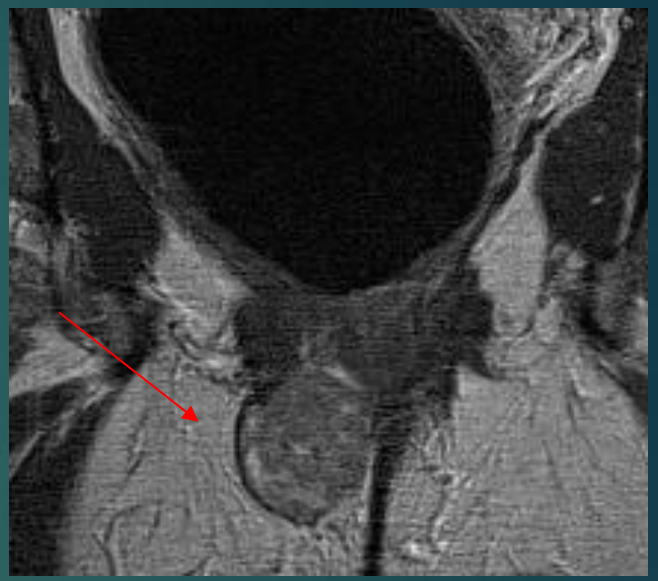


Perineal leiomyomas can show increased avidity on PET-CT which can mislead reporters pointing towards an aggressive pathology.

CASE 2

- 64 ♀
- Presentation: Weight loss and a change in bowel habit.
- A perianal soft tissue lesion was seen on CT colonography.
- This was imaged on MRI and a subsequent excision under EUA proved a perineal leiomyoma.

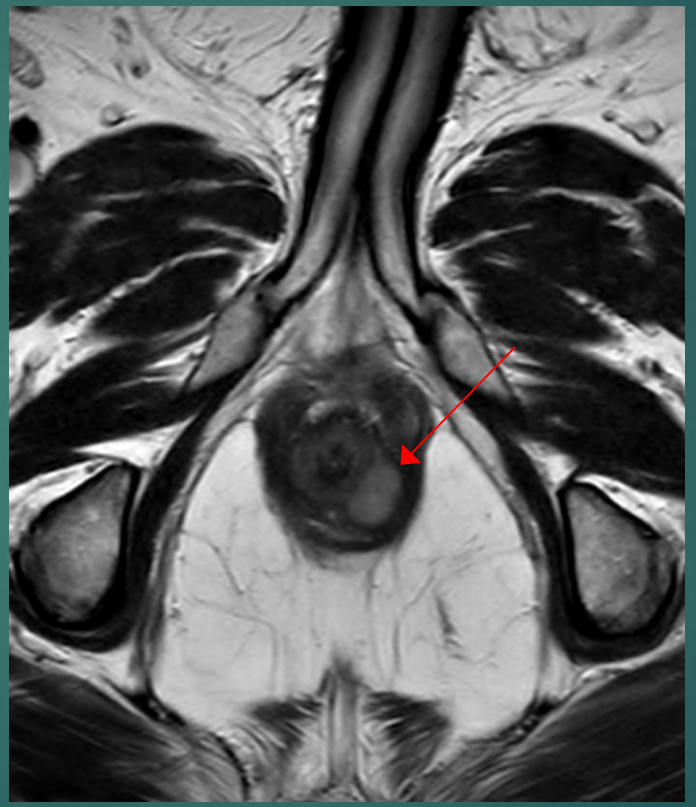


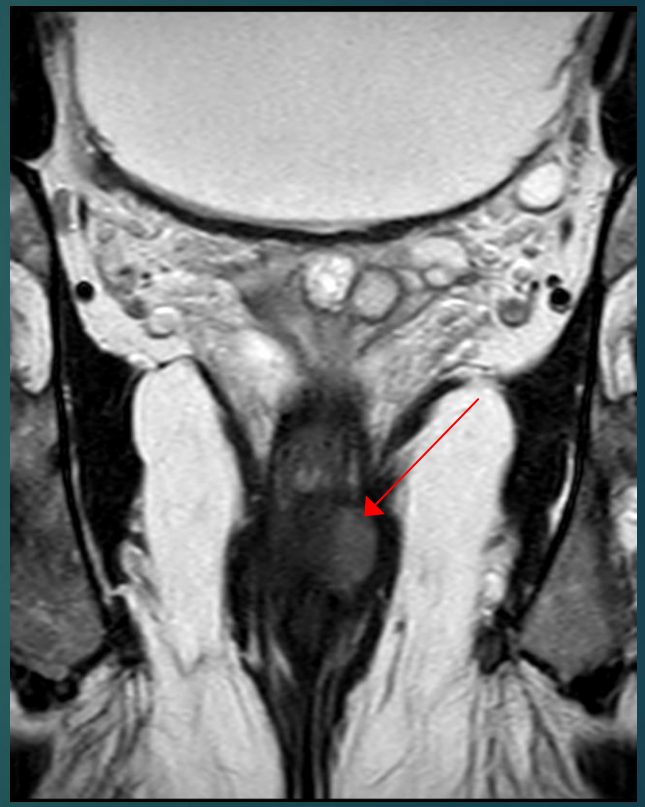


Right soft tissue lesion. Biopsy confirmed a perineal Leiomyoma.

Case 3

- 67 ♂
- Presentation: Urinary symptoms. MRI prostate was requested as the symptoms were coupled with a raised PSA.
- Incidental left sided perineal soft tissue lesion on MRI.
- Histology was obtained which confirmed a benign leiomyoma
- This patient had an EUA and the lesion was subsequently excised.





- Several imaging features can be used to differentiate leiomyomas from other lesions to aid diagnosis and subsequent management.
- A table to consider alternative differentials follows.

Alternative Differentials

Differential	Margins	CT enhancement	T2	Necrosis
Leiomyoma	*Smooth*	*Homogenous*	*Low*	*No*
GIST	*Smooth*	*Heterogenous*	*High*	*Yes*
Schwannoma	*Smooth*	*Heterogenous*	*High*	*Rare*

Summary

- Perianal leiomyoma is a rare but important benign cause of perineal masses, and should be considered when imaging shows a well-defined, solid lesion without invasive features.
- MRI typically demonstrates a sharply circumscribed mass with low T2 signal intensity and homogeneous post-contrast enhancement, reflecting smooth-muscle composition and favouring leiomyoma over GIST or schwannoma.
- Absence of aggressive imaging features—including necrosis, hemorrhage, restricted diffusion, or adjacent organ invasion—supports a benign diagnosis.
- Accurate radiologic characterization helps guide surgical planning, as complete local excision is curative and prevents extensive, unnecessary oncologic resection.

References

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- •https://radiopaedia.org/articles/gastric-leiomyoma?lang=gb
- •Kim HJ, Lee GH, Kim YW. *Imaging features of perianal leiomyoma*. Br J Radi