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Panacea Journal of Medical Sciences

Journal homepage: https://pjms.in/

Case Report

# Leiomyoma of the appendix: A familiar lesion at an unfamiliar location

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## Abstract

This report examines the rare case of a 22-year-old male diagnosed with an appendiceal leiomyoma after presenting with abdominal pain and intermittent fever, similar to an episode experienced six months prior mimicking appendicitis. Such leiomyomas are exceptionally rare in medical literature, with few documented cases. The discussion emphasizes the challenge in distinguishing this condition from similar pathologies like gastrointestinal stromal tumours (GISTs), leiomyosarcomas, and schwannomas, highlighting the critical need for precise diagnostic methods.

**Keywords:** Appendix, Leiomyoma, Leiomyosarcoma, Immunohistochemistry.

**Received:** 01-05-2024; **Accepted:** 24-01-2025; **Available Online**: 20-08-2025



## 1. Introduction

Appendiceal leiomyoma and leiomyosarcoma are extremely rare tumours with very few case reports documented. They most commonly present with symptoms of pain or palpable abdominal mass mimicking appendicitis. Therefore, it's important to include soft tissue tumors of the appendix in the differential diagnosis when evaluating cases of acute abdomen.[1] The diagnosis of appendiceal leiomyoma is primarily made through histopathological examination. This case report describes an incidental finding of appendiceal leiomyoma on histopathology following surgery, which was initially undertaken for what was clinically suspected to be recurrent appendicitis with an appendicular mass.

## 2. Case Report

A 22 year old male presented with the complaint of pain in abdomen since one day. He had similar complaint since six months with fever on and off for which he was treated symptomatically. Ultrasonography of the abdomen revealed dilated appendix with sealed off perforation of appendix. Contrast Enhanced Computed Tomography of the abdomen was suggestive of phlegmon appendicitis. The patient underwent interval appendicectomy and the specimen was sent for histopathological examination.

On gross examination, the appendix measured 5cm in length. Serosal surface was unremarkable. On cut surface, a nodule was seen in the wall of appendix measuring 0.4x0.4cm in size (**Figure 1**). Microscopy revealed denuded mucosa and few hyperplastic lymphoid follicles in the mucosa and submucosa. A well circumscribed tumour arising from the muscularis propria with tumour cells arranged in whorls and fascicles was seen (**Figure 2**). Individual tumour cells were benign appearing, spindly having scant cytoplasm and cigar shaped nuclei (**Figure 3** a,b). Immunohistochemistry [H-caldesmon] confirmed appendiceal leiomyoma (**Figure 4** a,b).

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https://doi.org/10.18231/pjms.v.15.i.2.500-502

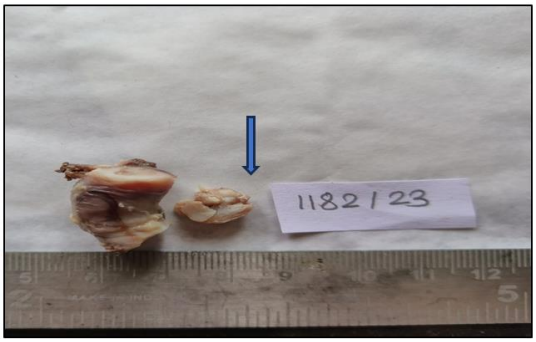


**Figure 1:** Cut section of appendix reveals a whitish nodule measuring 0.4x0.4cm in size

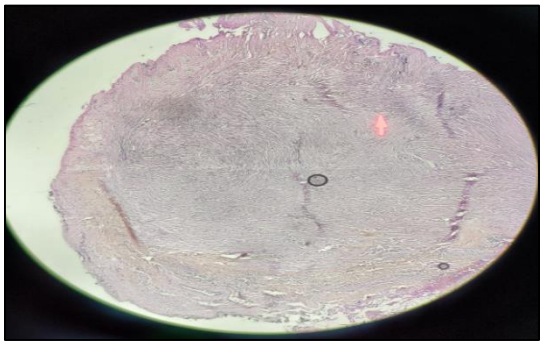

**Figure 2:** A well circumscribed tumour arising from the muscularis propria with tumour cells arranged in whorls and fascicles (H&E; 40x)

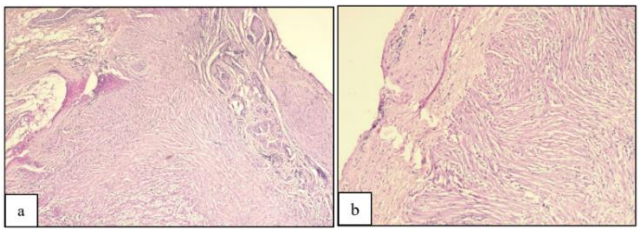


**Figure 3: a & b**): Individual tumour cells are benign appearing, spindly having scant cytoplasm and cigar shaped nuclei (**a:** H&E; 200x, **b:** H E; 400x)

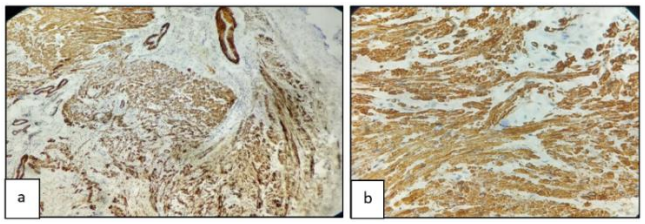


**Figure 4:** Appendiceal leiomyoma showing cytoplasmic positivity for H- caldesmon. (**a:** H&E; 100x, **b**: H&E; 400x)

## 3. Discussion

Appendiceal leiomyomas are extremely rare benign neoplasms with very few cases documented. The specific etiology for appendicular leiomyoma is unknown. Clinical presentation of the patient and diagnostic tests performed might not suffice for the definite diagnosis and need histopathological examination. However, if the surgeons and pathologists are aware of it; conservative surgical treatment would protect the patient from dangers like complete obliteration of the appendicular lumen and tumour progression.[2]

Leiomyosarcomas of the appendix are less common than leiomyomas and often manifest with hemorrhage, resulting in a poorer prognosis. The size of leiomyomas and leiomyosarcomas was found to be similar, with most measuring around 5 cm.[1,3] The peak age for leiomyoma and leiomyosarcoma was 30 to 39 years and 50 to 59 years respectively. Hatch et al observed leiomyomas to be more common in females and leiomyosarcomas in males.[3] Our case was a young male.

Collin studied 50,000 appendix specimens which included 830 leiomyomas and 632 malignant tumours.[4] Jougon et al highlighted that differential diagnoses such as inflammatory pseudotumor or inflammatory myofibroblastic tumor of the appendix, which can mimic appendicitis, should also be considered. These conditions can often be managed with an appendectomy.[5] It is critical to be aware of inflammatory pseudotumors to prevent unnecessary treatments.[6]

Khadka M et al reported a case of an inflammatory myofibroblastic tumor in an elderly patient who presented with symptoms of acute appendicitis and was discovered to have an appendicular mass during surgery. Thus, including inflammatory myofibroblastic tumor in the differential diagnosis for acute appendicitis is crucial for appropriate management.[7]

Another rare entity which clinically mimics appendicitis is an appendiceal neuroma. They are common in older adults but can also be seen in young adults.[8] Therefore, it is essential to consider stromal tumors of the appendix, such as leiomyoma, gastrointestinal stromal tumors, and neurogenic lesions, in the differential diagnosis of acute appendicitis.[9]

## 4. Conclusion

Appendiceal leiomyomas are exceedingly rare benign tumors. Their appearance on ultrasound is not well documented, which often leads to them being overlooked, making a preoperative diagnosis nearly impossible. Both surgeons and pathologists should be aware of this condition, which can clinically resemble appendicitis and may result in the obliteration of the lumen. Clinical presentation and radiologic examination do not suffice for definitive diagnosis and can only be confirmed on histopathological examination.

## 5. Source of Funding

None.

## 6. Conflict of Interest

None.

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**Cite this article:** Ramraje S, Chavhan S, Dahake D, Ghosh S. Leiomyoma of the appendix: A familiar lesion at an unfamiliar location. *Panacea J Med Sci*. 2025;15(2):500-502.