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Urachal Mucinous Cystic Tumor of Low Malignant Potential in a 43-Year-Old Man: Case Report and Literature Review

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Urachal Mucinous Cystic Tumor of Low Malignant Potential in a 43-Year-Old Man: Case Report and Literature Review

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ABSTRACT

Urachal mucinous cystic tumor is rare entity that arises from the urachus, often presenting with non-specific symptoms. We present a case of a 43-year-old man presented with abdominal discomfort and was found to have a cystic mass in the urachal region. Surgical resection was performed, and histopathological examination diagnosed the patient with a urachal mucinous cystic tumor of low malignant potential. This case underscores the importance of considering urachal tumors in differential diagnoses of abdominal cystic masses and highlights the need for careful pathological assessment to differentiate between benign and malignant lesions.

Summary

- Urachal mucinous cystic tumors of low malignant potential are extremely rare neoplasms arising from the urachus, a vestigial remnant of the allantois. These tumors are characterized by mucin-secreting epithelial cells with minimal cytological atypia and no evidence of invasive growth.
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- Despite their low malignant potential, these tumors warrant careful evaluation and management due to the risk of recurrence and potential complications such as pseudomyxoma peritonei if ruptured.

1 Introduction

The urachus is a remnant of the embryonic allantois, which normally obliterates after birth. Persistent urachal remnants can occasionally develop into a variety of neoplastic lesions, including mucinous cystic tumors. These tumors are rare, with limited number of cases reported in the literature. Their clinical management and prognosis are not well-established. Herein we present a case of a urachal mucinous cystic tumor of low malignant potential in a 43-year-old man and provides a review of the existing literature on this topic.

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2 Case History/Examination

A 43-year-old man presented with a 6-month history of abdominal discomfort and occasional pelvic pain. His past medical history was unremarkable, and he had no significant family history of cancer. On physical examination, a palpable mass was noted in the suprapubic region. Imaging studies, MRI revealed a well-defined midline complex cystic lesion arising from the dome of urinary bladder/ urachal region measuring 6.3 x 6.5 x 7.6

cm (Figure 1).

3 Methods (Investigations and Treatment)

The patient underwent exploratory laparotomy, which revealed a cystic mass arising from the urachal remnant. The tumor was resected along with a portion of the surrounding tissue. Histopathological examination showed predominantly cystic mass lined by mucinous epithelium with goblet cells, nuclear pseudo stratification and low-grade dysplasia. The tumor exhibited low malignant potential, with limited invasion into the surrounding tissue (Figures 2&3). Immunohistochemical staining show diffuse positivity for CDX2 and CK20 (Figure 4&5) Postoperative recovery was uneventful, and the patient was monitored regularly. At the 1-year follow-up, no evidence of recurrence was observed.

4 Conclusions and Results

This case of a urachal mucinous cystic tumor of low malignant potential in a 43-year-old man underscores the importance of considering such tumors in the differential diagnosis of abdominal cystic masses. Accurate histopathological assessment is crucial for determining the appropriate management and follow-up. Continued research and case reporting will enhance understanding and guide clinical management for these rare tumors.

5 Discussion and literature review:

Urachal tumors are rare and can be challenging to diagnose due to their non-specific symptoms and imaging findings. Mucinous cystic tumors of the urachus are even less common and are characterized by the presence of cystic lesions lined by mucinous epithelium. The differentiation between benign tumor, tumors with low malignant potential, and malignant tumors is crucial for management and prognosis.

The classification of urachal mucinous cystic tumors is based on the histological features, including the presence of atypical cells, invasive behaviour , and the amount of stromal component. Low malignant potential tumors generally exhibit less aggressive course and a better prognosis compared to their high-grade counterparts. The current case illustrates the importance of comprehensive pathological evaluation to guide appropriate treatment and follow-up.

5.1 Literature Review:

A review of the literature reveals that urachal tumors are rare, with mucinous cystic tumors representing a small subset. According to a study by Sturgeon et al. (1), the incidence of urachal tumors is estimated at 1-2 cases per million annually. Most of these tumors are diagnosed in middle-aged adults, with a slight male predominance (2). As of 2024, there are only 27 case studies reported in the literature (5)

Histopathological studies, such as those by O'Connell et al. (3), emphasize on the need for careful differentiation between low malignant potential tumors and high-grade malignancies. The management of urachal tumors often involves surgical resection, which has been shown to be effective in preventing recurrence, as highlighted in a study by Rao et al. (4).

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Author Contributions

SA- manuscript writing and literature review. KM- manuscript writing. IK- manuscript review. IB- study design and manuscript review

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Ethics Statement

This manuscript has been reviewed and approved by the Institutional Review Board (IRB) under approval number MRC-04-24-859, ensuring adherence to ethical guidelines and participant safety protocols.

Consent

Written informed consent was obtained from the patient for publication.

Conflicts of Interest

The authors declare no conflicts of interest.

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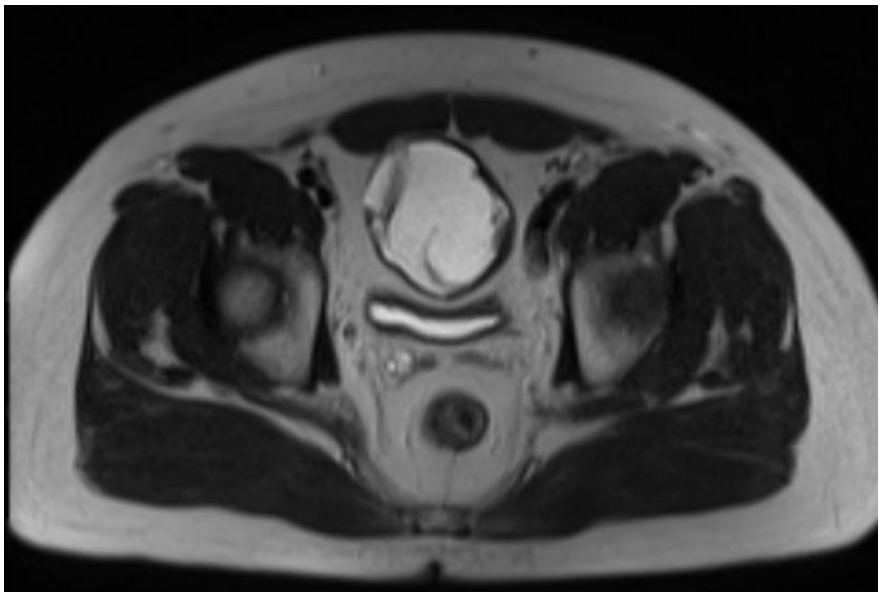

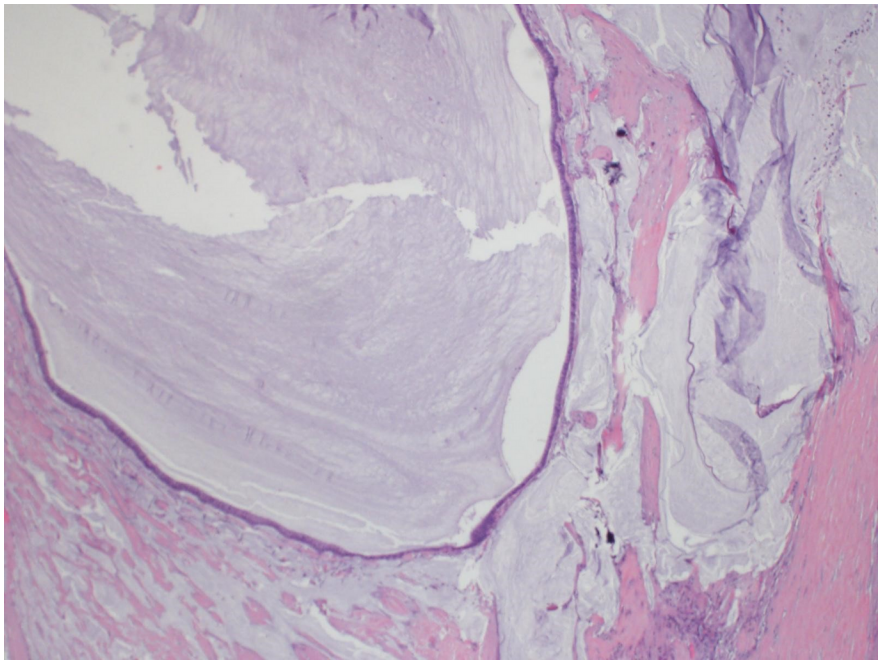

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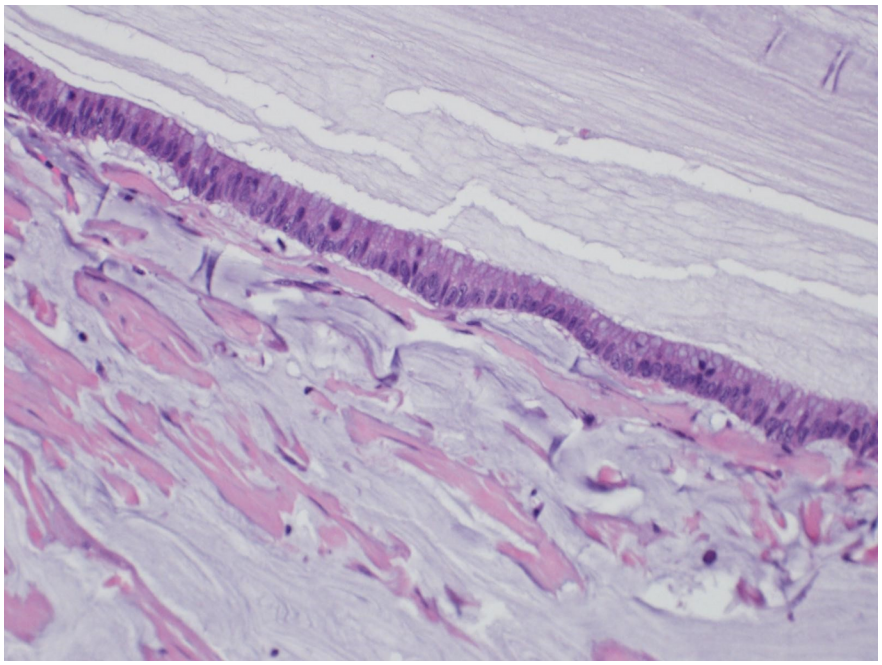

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