

## Case Report

# A rare case of urachus anomaly in an adult

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### ABSTRACT

The urachus is a fibrous remnant connecting the urinary bladder to the umbilicus, and its anomalies are rare in adults, often remaining asymptomatic until infected. Infected remnants, such as a urachal sinus, can present with variable clinical features, including purulent umbilical discharge. We report a case of an infected urachal sinus in a 64-year-old male, known to have uncontrolled diabetes, who presented with a one-month history of copious purulent umbilical discharge, lower abdominal distension on, and recurrent fever. Physical examination revealed an everted, erythematous umbilicus with a discharging ulcer. Imaging with CECT abdomen was diagnostic, showing an ill-defined, peripherally enhancing tract, approximately 9 cm in length, connecting the umbilicus to the dome of the urinary bladder. Definitive management was achieved via laparotomy and complete surgical excision of the infected urachal tract. Urachal remnant infection should be strongly considered in the differential diagnosis for adults presenting with purulent umbilical drainage, particularly in immunocompromised patients like those with diabetes. A high index of suspicion, combined with appropriate imaging, leads to timely diagnosis and definitive treatment, consisting of surgical excision following antimicrobial therapy.

**Keywords:** Urachus anomaly, Case report, Antimicrobial

### INTRODUCTION

Urachal remnants are rare congenital structures that persist when the foetal urachus fails to obliterate, connecting the bladder dome to the umbilicus.<sup>1</sup> In adults, these remnants are usually asymptomatic but can become clinically significant when infected, often presenting with nonspecific symptoms such as umbilical discharge, lower abdominal pain, or fever.<sup>2</sup> Because these features can mimic more common abdominal or umbilical conditions, diagnosis may be delayed without careful evaluation.<sup>3</sup> Imaging, particularly contrast-enhanced computed tomography, is crucial to define the course and extent of the urachal tract and to guide surgical planning.<sup>4</sup> Definitive management involves complete surgical excision of the remnant, which resolves infection and prevents recurrence or potential malignant transformation.<sup>5</sup> Comorbidities, such as diabetes mellitus, may predispose patients to more severe infection,

highlighting the need for timely recognition and intervention.<sup>4</sup> The innermost lining of a urachal remnant is comprised of transitional epithelium. Chronic inflammation can lead to metaplasia, principally adenocarcinoma.<sup>6</sup>

### CASE REPORT

A 64 year old male was admitted on 24/08/2023 in K. R. hospital, Mysore with pus discharge from umbilicus and distension of lower abdomen since a month with recurrent episodes of fever and abdominal pain. On physical examination the umbilicus was everted and erythematous with an ulcerated glistening centre from which copious purulent discharge could be expressed by application of pressure from the pubis towards the umbilicus. Periumbilical and suprapubic tenderness were detected, but no guarding or rebound was noted. He was a known case of diabetes since 14 years, uncontrolled and a chronic smoker.

Anaerobic culture of the discharge showed *E. coli*. USG abdomen was inconclusive and CECT abdomen showed ill-defined peripherally enhancing tract measuring 9 cm in length noted beneath the anterior abdominal wall in midline connecting the dome of urinary bladder and was hence diagnosed with an infected urachal sinus.

He was treated with intravenous piperacillin tazobactam and metronidazole with regular dressing for 14 days after which he was taken up for the surgery of laparotomy and sinus tract excision. Urachus tract was excised out completely and since the tract was infected abdominal closure was done only till the rectus and wound was left open. Histopathology showed tissue lined by stratified squamous epithelium with some granulation tissue and mixed inflammatory infiltrates and there was no evidence of any malignancy.

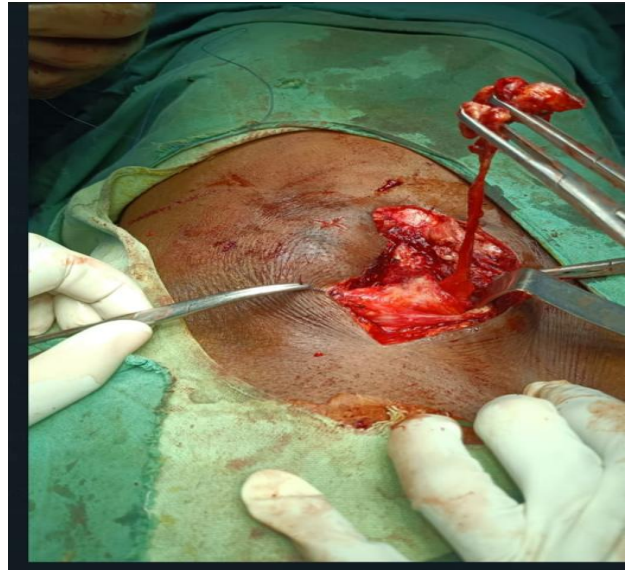
Patient underwent regular dressing and wound granulated and healed eventually. Patient was followed up after 3 months and there were no further symptoms and ultrasound abdomen and pelvis was normal.



**Figure 1: Discharge from the umbilicus of the patient; incision and drainage attempted.**



**Figure 2: CT film of the patient.**



**Figure 3: Intra operative picture of sinus tract excision till dome of bladder.**



**Figure 4: Postoperative secondary wound healing.**

## DISCUSSION

Urachal anomalies in adults are rare congenital remnants of the fetal urachus, with adult patients typically present with purulent umbilical discharge, lower abdominal pain, and occasionally systemic symptoms such as fever. In this case, a 64-year-old male presented with purulent umbilical discharge, lower abdominal distension, and recurrent fever, consistent with typical manifestations of an infected urachal sinus. Risk factors such as long-standing uncontrolled diabetes and chronic smoking likely contributed to susceptibility to infection.<sup>7</sup>

Diagnosis in adults can be challenging. While ultrasonography is often the initial imaging modality, it may fail to clearly delineate the urachal tract, as observed

in our patient. Cross-sectional imaging, particularly contrast-enhanced CT, provides detailed visualization of the tract, its length, and its connection to the bladder, aiding both diagnosis and surgical planning.<sup>8,9</sup> In this patient, CECT revealed a 9 cm tract extending from the bladder dome to the umbilicus, confirming an infected urachal sinus.

Microbiologically, *E. coli* is the most frequently isolated pathogen in urachal infections, followed by other enteric organisms.<sup>10</sup> Our patient's discharge culture grew *E. coli*, which aligns with prior reports.

Management of infected urachal sinuses typically involves a two-step approach: initial control of infection with appropriate antibiotics and local wound care, followed by definitive surgical excision of the tract.<sup>11</sup> In this case, intravenous piperacillin-tazobactam and metronidazole were administered for two weeks prior to surgical excision. Due to active infection, the abdominal wound was partially closed and allowed to heal by secondary intention, consistent with strategies reported in adult cases to minimize postoperative complications. Histopathology confirmed inflammation without evidence of malignancy, a necessary step given the rare but reported risk of urachal carcinoma in adults.<sup>12</sup>

Comparison with other reported cases demonstrates similar clinical courses and management strategies. Velázquez et al described a 58-year-old male with umbilical discharge and lower abdominal pain, where initial USG was inconclusive and CT confirmed an infected urachal sinus; antibiotic therapy followed by surgical excision resulted in full recovery.<sup>13</sup> Khati et al reported a 62-year-old diabetic male with a similar presentation, successfully managed with antibiotics and complete tract excision.<sup>14</sup> These cases reinforce that adult urachal sinus infections, while uncommon, require a high index of suspicion and timely imaging to ensure definitive management.

## CONCLUSION

In conclusion, this case highlights the importance of considering urachal anomalies in adults presenting with persistent umbilical discharge, especially in patients with comorbidities such as diabetes. CT imaging is essential for accurate diagnosis and surgical planning, while a staged approach of infection control followed by complete excision yields favourable outcomes and prevents recurrence.

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