

Inflammation and infection

## Infected urachal cyst in an adult: A case report

Kheireddine Mrad Daly<sup>\*</sup>, Sami Ben Rhouma, Selim Zaghib, Amine Oueslati, Maroua Gharbi, Yassine Noura

Department of Urology, La Rabta Hospital, Tunis, Tunisia



### ARTICLE INFO

#### Keywords:

Urachus  
Abnormality  
Urachal cyst  
Infected urachal cyst

### ABSTRACT

The urachus is an embryologic remnant which degenerates after the birth. An infected urachal cyst is one of a spectrum of presentations of urachal pathology, all of which are rare in adulthood. Infected urachal cyst is a rare pathology in adult women and it should be considered in the differential diagnosis of acute abdomen. We report here a case of a 50-year-old women with an infected urachal cyst revealed by an acute abdomen.

### Introduction

The urachus is an embryologic remnant which is formed by the obliteration of the allantois. The urachus degenerates after the birth and its vestige is the median umbilical ligament. The urachal abnormalities are caused by a defective obliteration of the urachus.

### Case report

A 50-year-old woman, was admitted for pelvic pain, dysuria and fever. Physical examination showed a high body temperature (40 °C) and tenderness in the lower abdomen. The blood pressure was 100/80 mmHg, the heart rate was 120 beats/min, and respiratory rate was 30 cycles/min. Laboratory data revealed a white blood cell count of 21.720/mL and a C-reactive protein level of 286 mg/dL. Abdominopelvic computed tomography revealed a hypodense abscess-like mass (6 × 5 × 3 cm in diameter) located at the superior part of the bladder in the midline (Fig. 1). An open surgery was performed after starting a treatment based on antibiotics, which showed a semisolid mass located at the superior part of the bladder. This mass had adhesions with anterior abdominal wall and bladder. The mass was extracted with the bladder dome. Pathological examination revealed an infected urachal cyst. After 24 months of clinical and radiological check-up, there was no functional complaint or any sign of recurrence.

### Discussion

The urachus (or median umbilical ligament), developmentally is the upper part of the bladder, both of which arise from the ventral part of the cloaca and allantois.<sup>1</sup> This canal progressively obliterates during

fetal life, forming a fibrous tract in early adult life with no function. Diseases of the urachus are an uncommon clinical entities, which explains the relatively small number of case reports in the literature. An urachal cyst occurs when both ends of the canal close, but the central portion remains open.<sup>1</sup> The true incidence is not known, and in one study, urachal cysts were found in 1:5000 autopsies.<sup>2</sup> The diagnostic work-up and management of the patient with an urachal abnormality, including urachal cysts, remains controversial. Many complications could occur including infection progressive growth, intracystic bleeding, intraperitoneal rupture, bowel fistula and malignancy. Urachal cysts usually become symptomatic when complicated. Patients with infected urachal cysts can present with a wide range of symptoms, most commonly abdominal pain, fever, umbilical discharge and the feeling of a midline mass. Owing to the low incidence and heterogeneous presentation, many patients can be misdiagnosed.<sup>1</sup> Although infected urachal cyst is uncommon in adult women, it should be considered in the differential diagnosis of an acute abdomen especially with a mass in the midline.<sup>3</sup> Common misdiagnoses include appendicitis, Meckel diverticulitis, urinary tract infection, pelvic inflammatory disease, and bladder carcinoma.<sup>1</sup> Ultrasound is often the first test performed in patients with suspected urachal cysts.<sup>4</sup> Computed tomography may be helpful to confirm or further elucidate ambiguous findings. These imaging methods also give information about the size of cyst and its relationship with peripheral tissue, however, it's hard to differentiate between infected urachal cysts and urachal carcinomas as imaging shows an increase of echogenicity on ultrasound and a thick wall on computed tomography in both cases. While treatment of a non-complicated urachal cyst still controversial as there are opposing opinions on whether prophylactic surgery should be performed, the recommended treatment of the urachal abscess is intravenous antibiotic

<sup>\*</sup> Corresponding author.

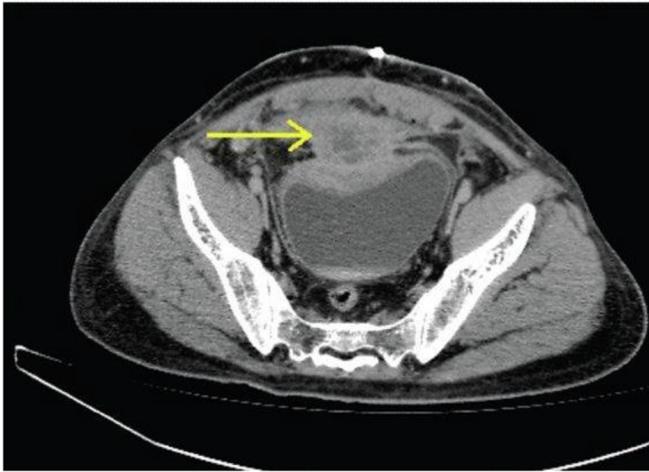
E-mail address: [bechakmddd@gmail.com](mailto:bechakmddd@gmail.com) (K. Mrad Daly).

<https://doi.org/10.1016/j.eucr.2019.100976>

Received 24 June 2019; Received in revised form 20 July 2019; Accepted 22 July 2019

Available online 25 July 2019

2214-4420/ © 2019 Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).



**Fig. 1.** Abdominopelvic computed tomography showing an abscess-like formation (75 × 43 × 48mm) from the umbilicus to the dome of bladder.

therapy and total surgical excision. The resection of the cyst wall entirely is especially recommended. Because of the high recurrence rate and the risk of malignancy, drainage of the abscess is not recommended.<sup>5</sup>

## Conclusion

Urachal abnormalities are rare in adults. Clinical presentation is non-specific; therefore, a high index of suspicion is required in order to make the diagnosis. When diagnosed, surgical excision is advised because of the risk of malignant transformation.

## Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

## References

1. Noguera-Ocana M, Rodriguez-Belmonte R, Uberos-Fernandez J, Jimenez-Pacheco A, Merino-Salas S, Zuluaga-Gomez A. Urachal anomalies in children: surgical or conservative treatment? *J Pediatr Urol.* 2014;10:522–526.
2. Pitone M, Alouf B. Picture of the month—quiz case. *Arch Pediatr Adolesc Med.* 2006;160:300.
3. Hsu C-C, Liu Y-P, Lien W-C, Lai T-I, Chen W-J, Wang H-P. Urachal abscess: a cause of adult abdominal pain that cannot be ignored. *AJEM (Am J Emerg Med).* 2005;23:229–230.
4. Cilento B, Bauer S, Retik A, Peters C, Atala AA. Urachal anomalies: defining the best diagnostic modality. *Urology.* 1998;52:120–122.
5. Yoo KH, Lee S-J, Chang S-G. Treatment of infected urachal cysts. *Yonsei Med J.* 2006;46:423–427.