


# Infected urachal cyst: an uncommon cause of severe sepsis in a neonate

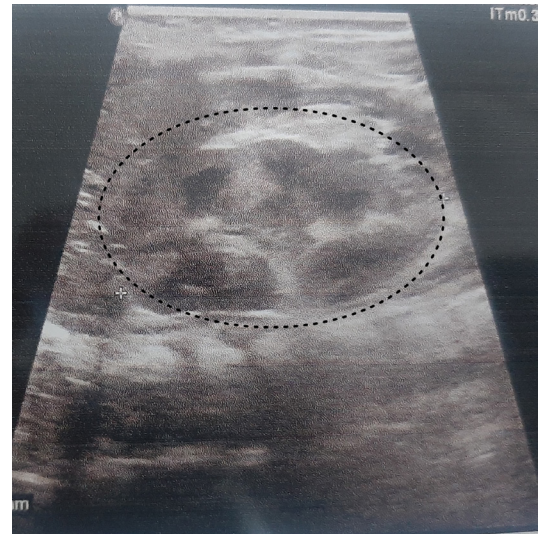
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Urachal anomalies are rare conditions caused by the failure of complete obliteration of the urachus during gestation. The most common of these conditions is urachal cyst.<sup>1</sup> Urachal cyst is often misdiagnosed leading to complications, such as sepsis, fistula formation, and rupture. We report a rare case of infected urachal cyst leading to severe sepsis in a neonate.

A 12-day-old female neonate presented with a 3-day duration of painful umbilical erythema and fever. She was born at 36+2 weeks' gestation and weighed 2750 g, with Apgar scores of 7 at 1 min and 9 at 5 min. The diagnosis of omphilitis was made, and the patient was treated with intravenous antibiotics (cefotaxime+metronidazole+gentamicin) by her general pediatrician. There was no clinical improvement, and the patient was referred for



**Figure 2** Ultrasonographic image showing an intra-abdominal abscess (circle).



**Figure 1** Abdominal distension with periumbilical erythema.

surgical assessment. Physical examination revealed an initial temperature of 38.7°C and a tender abdominal distension with periumbilical erythema (**figure 1**). There was no purulent umbilical discharge. The respiratory rate was 72 breaths/min. Blood results showed an increase in white cell count (24,000, with 88% neutrophils) and in C reactive protein (147 mg/dL). Ultrasonography and CT scans showed 3×3 cm intra-abdominal abscess adjacent to the umbilicus (**figure 2**).

A “Y” subumbilical shaped incision was performed. Urachal cyst was identified and removed (**figure 3**). Accurate peritoneal toilet and closure of the anatomical planes with resorbable stitches were performed. The surgical specimen was sent for histopathological analysis. The patient died of severe sepsis at the third postoperative hour.

Histologically, the cystic wall was composed of fibrous tissue and was partially covered with the urothelium. The diagnosis of urachal cyst was thus made.

The urachus is an embryological remnant that degenerates after the birth.



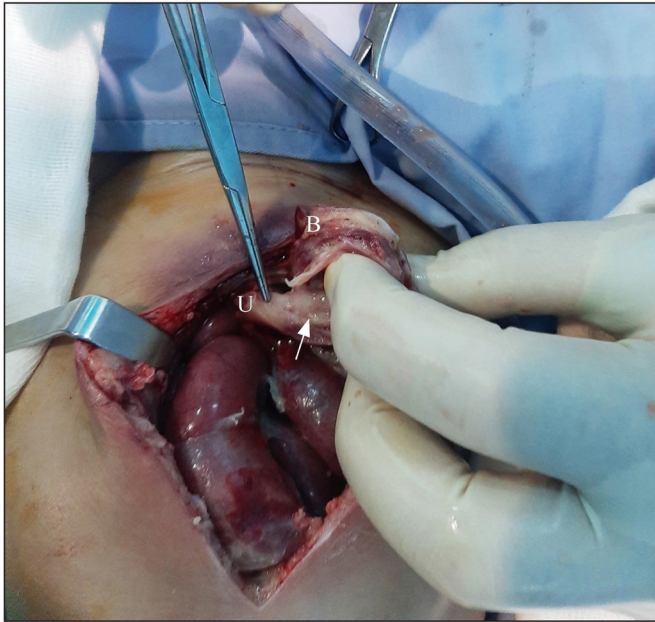
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**Figure 3** Intraoperative view showing: arrow: infected urachal cyst; U, umbilical end of the urachus; B, bladder end of the urachus.

However, incomplete regression of the urachal lumen results in several conditions including urachal sinus, patent urachus, urachal diverticulum and urachal cyst.<sup>2</sup> The diagnostic and management of patients with urachal cysts remain controversial. Urachal disease is usually initially misdiagnosed. We initially suspected an omphalitis in our patient. Many complications could occur including infection, intracystic bleeding, bowel fistula and malignancy.<sup>3</sup> Infected urachal cysts can mimic appendicitis, Meckel diverticulum or ovarian torsion. They can rarely rupture leading to peritonitis.<sup>4</sup> The most frequent imaging modality used to diagnose urachal anomalies is ultrasound because it is usually available, non-invasive, and cost-effective. However, CT scan is often required to confirm the diagnosis.<sup>5</sup> Infected urachal cyst is often seen on ultrasound as a heterogeneous lesion with posterior acoustic enhancement and complex echogenicity, extending from the umbilicus to the bladder. Infected urachal cysts, although uncommon, are an important cause of pediatric morbidity.<sup>6</sup> Symptomatic infected urachal anomalies can be managed conservatively or surgically. Some authors advocate treatment with intravenous antibiotics alone; surgery is required in selected cases only.<sup>7 8</sup> However, most

authors recommend early drainage of the infected abscess and excision of the urachal remnant as the definitive treatment.<sup>9-12</sup>

Urachal cyst is a benign disease that can be life-threatening. We suggest that a complete urachal excision as soon as possible remains the best choice. A high index of suspicion is required for timely diagnosis and management of this condition.

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