







Case Report

## Detection of Urachal Anomaly during Prenatal: A Newborn Case Report

### *Prenatal Dönemde Saptanan Urakal Anomali: Bir Yenidoğan Vakası*

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#### ABSTRACT

The urachus is the remnant of the cloaca and allantois that has remained since the embryological period. If this remnant does not close in the early period, congenital urachal anomalies, such as patent urachus, urachal cyst, urachal sinus and urachal diverticulum occur. Congenital urachal fistula is a rare type of these anomalies. This case report presents a newborn born at 38 weeks and four days of age, weighing 2820 grams. A healthy-term baby, whose urachus anomaly was detected during the antenatal period, was admitted to the neonatal unit for follow-up and treatment. The patient, who had urine discharge from the umbilical region, was diagnosed with a urachal fistula. The patient was operated on by pediatric surgeons on the 7th day of his life.

**Keywords:** *intussusception, Burkitt's lymphoma, pediatrics*

#### ÖZET

Urakus, embriyolojik dönemden kalan kloaka ve allantoisin kalıntısıdır. Bu kalıntı erken dönemde kapanmazsa patent urakus, urakal kist, urakal sinüs ve urakal divertikül gibi konjenital urakal anomaliler ortaya çıkar. Konjenital urakal fistül bu anomalilerin nadir görülen bir türüdür. Bu olgu sunumunda 38 hafta 4 günlük, 2820 gram ağırlığında doğan yenidoğan sunulmaktadır. Antenatal dönemde urakus anomalisi tespit edilen sağlıklı term bebek, takip ve tedavi amacıyla yenidoğan ünitesine yatırıldı. Umbilikal bölgeden idrar gelmesiyle hastaya urakal fistül tanısı konuldu. Hasta yaşamının 7. gününde çocuk cerrahi tarafından ameliyat edildi.

**Keywords:** *human bocavirüs, pnömoni, alt solunum yolu enfeksiyonu*

Received: 26.05.2024 · Accepted: 13.07.2024 · Published: 05.09.2024

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**Cite this article as:** Kılınç SB, Sümen E, Tarakçı N, Atılğan M, Kocaoğlu C, Altunhan H, et al. BDetection of Urachal Anomaly during Prenatal: A Newborn Case Report. *Pediatr Acad Case Rep.* 2024;3(3):44-8.

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## INTRODUCTION

The urachus is an embryonal remnant of the bladder that extends from the anterior part of the bladder to the umbilicus (1). Patent urachus, a rare condition, falls under the category of urachal anomalies. It is caused by a developmental disorder of the normal embryological tissues that serve to empty the fetal bladder. The presenting symptoms are determined by the location and quantity of persistent tissue. Some urachal anomalies are apparent at birth, while others may not be diagnosed until adulthood or are incidentally discovered during imaging for other reasons. In the past, surgical resection of urachal anomalies was commonly performed due to the risk of malignancy associated with remaining ectopic tissue (2). Urachal anomalies typically manifest as umbilical drainage, inflammation around the umbilicus, or urinary tract infections. However, they can also present with umbilical swelling, periumbilical erythema or infection within the urachal tract itself. Subclinical urachal anomalies are believed to be prevalent within the population. The most common age group for the anomaly is the neonatal period (3).

## CASE REPORT

A 38-week four-day old 2820 gram baby boy was born healthy by cesarean section from a 21-year-old mother. There was no need for postpartum resuscitation. An ultrasound was performed on the mother by the perinatologist during the antenatal period of 21 weeks and three days. Ultrasound reported a 42x39 mm allantois cyst (patent urachus) with continuity with the bladder at the base of the umbilical cord. The patient was admitted to the neonatal intensive care unit after birth for further examination and treatment. Patient's vital signs were stable. His vitals were temperature 36.4°C; heart rate 115 beats per minute; blood pressure 70/40 mmHg; respiratory rate 56 breaths per minute; SPO<sub>2</sub> 98%. On physical examination, his general condition was good. There was no tenderness with palpation during the abdominal examination. His external genitourinary system appears male. His testes are located bilaterally within the scrotum. His umbilical cord consists of two arteries and one vein. During urination, urine was observed coming from the lower part of the umbilical cord in the umbilicus region (Figure 1). There was no

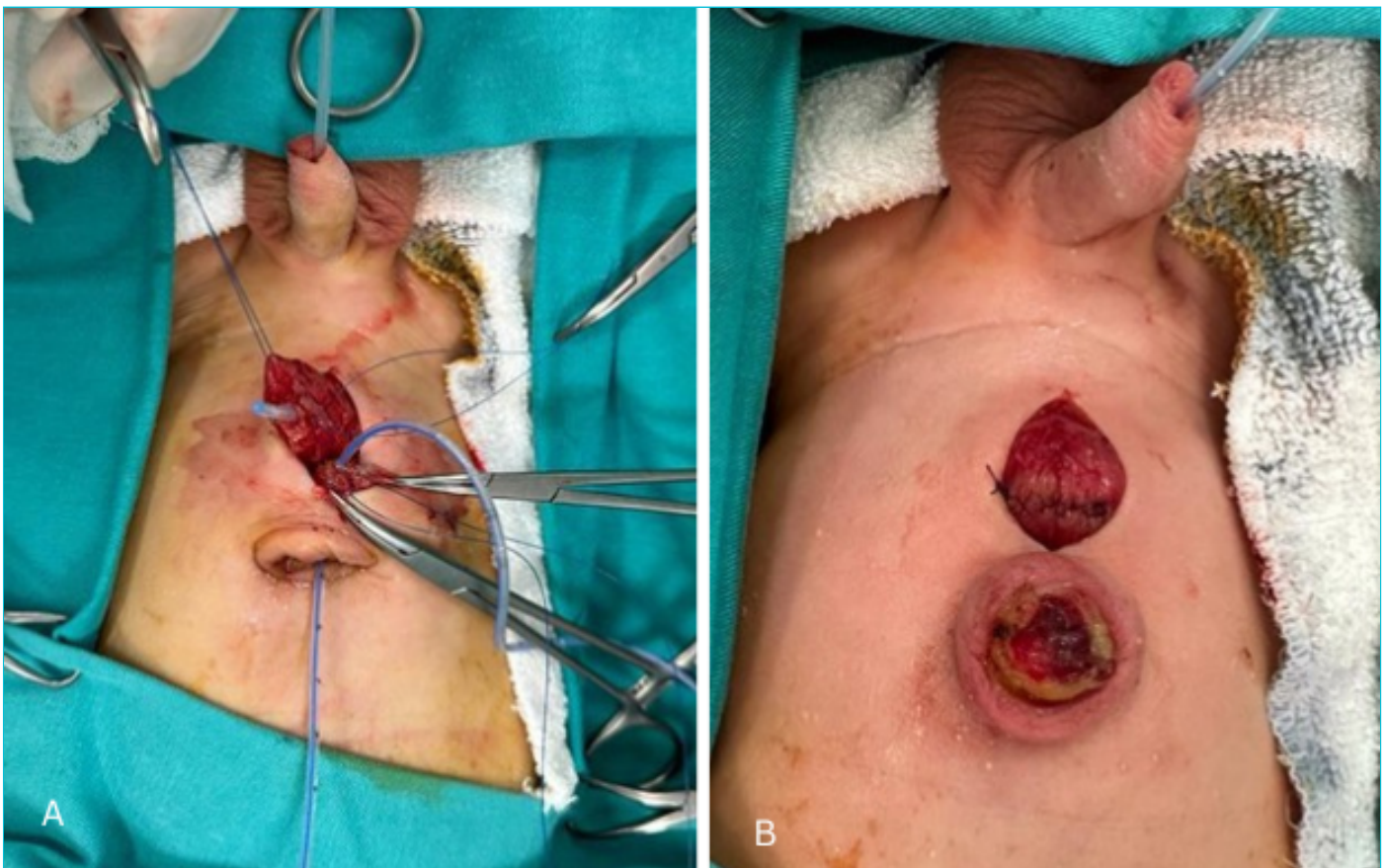
redness, increased temperature or bad odor around the navel. Transfontanel and abdominal ultrasonography evaluations are normal. No anomaly was detected in echocardiography. Laboratory data resulted in normal. The patient underwent urinary catheterization. The urachal fistula line was observed by administering contrast material with a Foley catheter (Figure 2). The patient was operated on by a pediatric surgeon on the 7th day of his life (Figure 3). It was observed that the urinary catheter, which was advanced from the umbilical region during the surgery, came out of the bladder. Another catheter, which was simultaneously advanced through the urethral meatus, was also seen to come out of the umbilicus. The fistula line was excised. The bladder dome was repaired in double layers. The patient's urinary catheter was removed on the 5th postoperative day. After the removal of the catheter, urine output was spontaneous. No urine flow was observed from the umbilical region. He was discharged to home on the sixth postoperative day.



**Figure 1.** Fluid leaking around the umbilical cord.



**Figure 2.** Fistulography reveals a tubular connection between the urinary bladder and the umbilicus.



**Figure 3.** Peroperative view.

## DISCUSSION

The urachus is an embryonal remnant that extends from the anterior dome of the bladder to the umbilicus. The role of the urachus in the first trimester of preg-

nancy is to facilitate the removal of fetal waste from the placenta (4). In the fourth and fifth months of pregnancy, the bladder descends towards the pelvis. Thus, the urachus lengthens, the lumen narrows, and a permanent fibromuscular cord forms. This fibrous band is

also known as the median umbilical cord (5,6). Urachal anomalies occur when embryonal remnants fail to regress sufficiently. The etiology of urachal anomalies has yet to be fully discovered. Urachal anomalies can be classified into four groups: urachal cyst, urachal sinus, patent urachus and urachal diverticulum. These anomalies can be defined: patent urachus, where the entire tubular structure is intact; urachal sinus, where the umbilical end of the structure does not close; urachal diverticulum, where the bladder end of the structure does not close; urachal cyst, in which both ends are closed, but the central lumen remains open (7). Urachal cysts, the most common urachal anomalies, can occur at any time from the first day of life. The average time to diagnosis is four years of age. In the literature, urachal anomalies have also been associated with hypospadias and renal anomalies (8,9). However, in our case, no anomaly accompanied the urachal fistula. Diagnosis of urachal anomalies begins with a detailed history and physical examination. The diagnosis of patent urachus or urachal sinus is made by urine coming from the umbilicus. However, in rare cases, the patient may also be diagnosed with the retraction of the umbilicus while urinating (10). Clinical suspicion is usually supported by ultrasound. In the study of 45 children with urachal anomalies, it was observed that more than 90% of the children were diagnosed correctly with ultrasonography. In our case, the diagnostic process proceeded similarly to the literature. Urachal fistula was detected by ultrasound in the antenatal period. In the postnatal physical examination, urine was observed coming from the umbilicus. Voiding cystourethrogram (VCUG) has no clinical significance in diagnosing urachal anomaly. Additionally, urinalysis and urine culture have no place in diagnosis (11,12). However, some physicians recommend a sinogram or VCUG in children with umbilical drainage. (13) Contrast-enhanced consumption sinography was performed on our patient to confirm the diagnosis and check the presence of a posterior urethral valve. Urine was seen coming out around the umbilicus. Thus, our diagnosis was confirmed. Most studies recommend that surgical intervention should be avoided in children under one year of age. It is stated that surgical resection is limited to children with more than one clinical episode and over one year of age. These studies show that most cases of symptomatic patent urachus can be treated with a high success rate without surgical intervention. (14). Surgery was planned for the urachal anomaly, which was too large to close spontaneously. Therefore, the patient was operated on by the

pediatric surgeon on the 7th day of his life. There was no problem at the 1-month postoperative check-up.

## CONCLUSION

Patent urachus is a rare anomaly. Early diagnosis of urachal anomaly is significant in preventing infection. In the differential diagnosis of discharge from around the umbilicus in the neonatal period, anatomical abnormalities should be kept in mind, in addition to infectious causes.

### Patient Consent Form / Hasta Onam Formu

The parents' of this patient consent was obtained for this study.

### Conflict of Interest / Çıkar Çatışması

The authors declared no conflicts of interest with respect to authorship and/or publication of the article.

### Financial Disclosure / Finansal Destek

The authors received no financial support for the research and/or publication of this article.

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