

Infected Urachal Sinus in the Adult: A Case Report

Ahmed Mahjoub Awad¹, Ali Elzain Elshareef², Ahmed Osama Ahmed Babikir^{3*}, Randa Mohamed Osman Abdelsh-foug Abbas⁴ and Samowal Sadig Saeed⁵

¹Assistant Professor of Surgery, Faculty of Medicine, Shendi University, Sudan

²Intern Doctor, Federal Ministry of Health, Sudan

³Department of Pathology, Faculty of Medicine, Shendi University, Sudan

⁴Intern Doctor, Ministry of Health, Sudan

⁵Registrar of General Surgery, Ministry of Health, Sudan

***Corresponding Author:** Ahmed Osama Ahmed Babikir, Department of Pathology, Faculty of Medicine, Shendi University, Sudan.

Received: May 09, 2022; **Published:** June 28, 2022

Abstract

Urachal abnormalities are very rarely encountered in adults. Though the urachus is normally obliterated in early infancy, it may cause a lower midline lesion in adults. Urachal abnormalities can be classified into five groups: patent urachus, urachal sinus, vesicourethral diverticulum, urachal cyst and alternating sinus. Their variable ways of Presentation may diagnostically challenge that sinuses are a rare type of these abnormalities. They are frequently found by chance and are asymptomatic unless they cause a consequence (most commonly infection). Purulent umbilical discharge, abdominal pain and a periumbilical lump are all symptoms of a urachal sinus infection. A case of the infected urachal sinus in a male adult is presented. Ultrasonography verified the diagnosis, which was suspected clinically. Following broad-spectrum antibiotic therapy, the sinus and fibrous tract are completely removed. The recovery period was unremarkable. A histological test revealed no evidence of cancer.

Keywords: *Urachal Abnormalities; Adults; Umbilical Discharge; Abdominal Pain*

Introduction

Urachal abnormalities are caused by inadequate foetal urachus regression. Because of urachal obliteration in early childhood, they are more common in children than in adults [1]. A urachal cyst (UC) is the most frequent kind in adults, with infection being the most prevalent symptom [2]. Few cases of urachal sinuses have been reported in the literature since Cabriolus in 1550 originally described them. The incomplete obliteration of the foetal urachus causes urachal malformations. Adults have fewer of them than children [3]. Various types of remnants have been identified, with urachal sinus being the most prevalent. Umbilical drainage is the most common sign of this abnormality [4].

Case Report

A 32-year-old male patient, with no relevant past medical history, presented with a 1-month history of abdominal pain which is stabbing in nature, moderately severe, and had no aggravated and relieving factors. The patient also has painful umbilical swelling with

discharge, which is a small amount, yellow in color, and offensive odor without digestive or urinary symptoms. Physical examination revealed an initial temperature of 38.9°C, purulent umbilical discharge with tender umbilical mass (Figure 1). Laboratory tests revealed marked leucocytosis of 24,000/mm³. The urinalysis and renal functions were within normal. Ultrasonography of the abdomen revealed characteristics consistent with an infected urachal remnant harbouring pus and fecolith with a discharging sinus. The patient was first given intravenous antibiotics for 72 hours, followed by two weeks of oral antibiotics.



Figure 1: Purulent umbilical discharge with umbilical mass.

Following that, the patient was prepped for surgery (Figure 2). Intraoperatively, a fistula probe was passed through the sinus on the umbilicus to identify the fistulous tract, after which an infra-umbilical midline incision was made between the fascia transversalis and the parietal peritoneum, with the fistula tract extending about 8 cm. Omphalectomy and excision of the fistula tract were performed (Figure 3).



Figure 2: Patient prepared for surgery.



Figure 3: Excision of fistula tract was done and omphalectomy.

The recovery period was unremarkable. There was no evidence of cancer on histological evaluation. After two days, the patient was released. After two weeks, the wound had healed nicely on the first visit.

Discussion

The allantois and the ventral section of the cloaca create the urachus embryologically, with the latter eventually forming the bladder. By the third month of pregnancy, the allantois, a part of the yolk sac that extends into the body sac, has become involved. As the foetal bladder descends from the abdomen into the real pelvis, the remainder of the urachus remains as an epithelial-lined tubular structure that elongates. During the neonatal era, the urachal link between the umbilicus and the bladders is usually shut off. Persistent urachus patency increases the risk of tracheal problems, the most serious of which is infection [5].

Incidence: The incidence of congenital urachal anomalies is low [6]. The incidence of congenital urachal abnormalities detected at birth or diagnosed early during infancy has been reported as few than two cases per 300,000 admissions to a pediatric hospital [7].

Anatomy: The urachus and bilateral umbilical arteries are contained within a pyramid-shaped fascial space (space of Retzius) that reaches from the umbilicus to the bladder dome and is separate from the peritoneal cavity [1]. The anterior fascia transversalis and the posterior parietal peritoneum define the space. Due to these anatomic considerations, an infection that spreads outside the tubular urachal remains usually appears as a confined midline infraumbilical abscess with no peritoneal signs and symptoms.

Diagnosis: Surgical exploration is required for confirmation of the diagnosis and to determine the need for additional therapy; however, case reports have shown that surgical laparotomy for an erroneously suspected intraperitoneal infection may fail to detect an infected urachal anomaly, presumably because the urachal infection is contained within an abdominal-wall fascia space [8]. The use of ultrasonography and computed tomography in supporting an initial clinical diagnosis of infection of urachal remains has been documented [10], but reports are so uncommon that evaluating or comparing the sensitivity of radiological methods is impossible. Preoperative cystoscopy or cystography is definitely recommended in all suspected cases to detect the presence of a vesicourethral diverticulum and hence forecast the requirement for bladder cuff excision [9].

Microbiology: Mucinous discharge infection via the umbilicals is the most common cause of urachal sinus abscess. *Escherichia coli*, *Enterococcus faecium*, *Proteus*, *Streptococcus viridans* and *Fusobacterium* [10,11] were the most often cultured microbes from the pus. The urachal sinus is typically asymptomatic until it becomes infected, therefore the clinical signs and symptoms are generic. A sensitive midline infra umbilical mass, umbilical drainage, and infection, however, should raise suspicion of the urachal sinus [12].

Treatment: Depending on the type of pathology involved in the urachal remnant, various forms of treatment different have been recommended. These include fulguration of the tract, marsupialization incision and drainage, and surgical excision. Some authors advocate conservative treatment initially while reserving radical surgical excision of the urachus for persistent cases or recurrences. In a review of the literature, Blichert-Toft and Nielson [13] found that 9 of 29 cases of infected urachal cysts treated by incision and drainage recurred. Nix and associate [14] recommend complete surgical removal of a patent urachus. In their analysis of 100 cases, there was a higher complication and recurrence rate when more conservative methods of treatment were used. Another reason for total urachus excision is the risk of cancer developing in the urachal residual. We recommend a wide urachus excision, encompassing the umbilicus and, if necessary, a bladder cuff. When possible, percutaneous catheter draining of an infected cyst or diverticulum with subsequent excision after proper infection therapy is preferred. Because of the risk of malignancy and the high probability of recurrence when parts of the urachus are retained, incision and drainage, marsupialization, or conservative excision of urachal masses should be avoided.

Conclusion

Infected urachal sinus is rare in adults. Because the presentation is unusual, a high index of suspicion is required to make a diagnosis. Infra-mass, umbilical discharge, and sepsis are all signs of sepsis. The diagnosis is confirmed by ultrasound and computed tomography scans, which also describe the surrounding anatomical relationship. Prior to the surgical surgery, an antibiotic course based on bacterial sensitivity is indicated. Complete surgical excision with or without a bladder cuff is the recommended treatment to prevent recurrence and malignant transformation.

Bibliography

1. Hammond G., et al. "The urachus, its anatomy and associated fasciae". *The Anatomical Record* 80.3 (1941): 271-287.
2. Begg RC. "The urachus: its anatomy, histology and development". *Journal of Anatomy* 64.2 (1930): 170-183.
3. Mahato NK., et al. "Encysted urachal abscess associated with a premalignant lesion in an adult male". *Uro Today International Journal* 3.5 (2010): 222-224.
4. Risher WH., et al. "Urachal abnormalities in adults: the Ochsner experience". *Southern Medical Journal* 83.9 (1990): 1036-1039.
5. Bauer SB and Retik AB. "Urachal anomalies and related umbilical disorders". *Urologic Clinics of North America* 5.1 (1978): 195-211.
6. Cilento BG Jr., et al. "Urachal anomalies: defining the best diagnostic modality". *Urology* 52.1 (1998): 120-122.
7. Sterling JA and Goldsmith R. "Lesions of urachus which appear in the adult". *Annals of Surgery* 137.1 (1953): 120.
8. Blichert-Toft M and Nielsen OV. "Diseases of the urachus simulating intra-abdominal disorders". *The American Journal of Surgery* 122.1 (1971): 123-128.
9. Goldman IL., et al. "Infected urachal cysts: a review of 10 cases". *The Journal of Urology* 140.2 (1988): 375- 378.
10. Ekwueme KC and Parr NJ. "Infected urachal cyst in an adult: a case report and review of the literature". *Cases Journal* 2.1 (2009): 6422.

11. RF Spataro, *et al.* "Urachal abnormalities in the adult". *Radiology* 149.3 (1983): 659-663.
12. Tiao MM, *et al.* "Urachal inflammatory mass mimicking an intra-abdominal tumor two years after excision of the urachal sinus in a child". *Chang Gung Medical Journal* 26.8 (2003): 598-601.
13. Blichert-Toft M and Nielsen OV. "Diseases of the urachus simulating intra-abdominal disorders". *The American Journal of Surgery* 122.1 (1971): 123-128.
14. Nix JT, *et al.* "Congenital patent urachus". *The Journal of Urology* 79.2 (1958): 264-273.

Volume 5 Issue 7 July 2022

© All rights reserved by Ahmed Osama Ahmed Babikir., *et al.*