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ORIGINAL ARTICLE

Urachal sinus in an infant: a case report

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Abstract

The persistence of the urachus, a tubular structure that connects the bladder to the navel, is an anomaly that consists in its permanence after birth. It can have four different forms and one of the rarest is the urachal sinus. It was reported a 41-day-old female patient with an umbilical scar secretion. Initially, omphalitis was suspected; however, after a diagnostic investigation, it was evidenced, by examining the image, a persistent urachus. Treatment includes surgical correction that can be performed electively.

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INTRODUCTION

The urachus is a tubular structure present in the fetus, which extends from the bladder to the umbilicus[1,2]. It disappears around the 16th week of gestation, thus forming the median umbilical ligament[1,3,4]. However, if the structure is maintained, there is the possibility of forming four different types of anomalies, urachal sinus, urachal cyst, patent urachus/fistula and urachal diverticulum[2,4].

Urachus persistence can cause local infection, sepsis and malignancy of the remaining structures[5]. These complications occur mainly due to the underdiagnosis of this anomaly. Thus, the earlier the diagnosis and surgical correction, the lower the chance of future complications[2,4,5].

One of the main differential diagnoses is the local infection of the skin and subcutaneous tissue, called omphalitis. Other differential diagnoses include umbilical hernia, sinus or mesenteric omphalomesenteric cyst, and anterior abdominal wall infections[3,4,6]. Ultrasonography can be used for this differentiation[7]. Other imaging tests, such as computed tomography and magnetic resonance imaging, may be requested; however, they are not necessary in all patients[3,5,8].

Treatment is performed through surgical correction, which should be performed as early as possible in order to avoid complications[2,4,7].

CASE REPORT

41-day-old female infant, born by vaginal delivery, at 40 weeks and 5 days of gestational age, Apgar 8/9, without complications during birth, without previous hospitalizations.

A 24-year-old mother, her second pregnancy and her second vaginal delivery, with no history of miscarriage. She performed 9 prenatal consultations, negative serology throughout the pregnancy, which went without any complications.

The patient was admitted to the emergency room with purulent discharge (yellow greenish) from the umbilical scar, in large quantities, with a foul odor and which started minutes ago. The mother denied fever, pruritus, edema and local erythema, and any other complaints. She was eating well, on breastfeeding only (BF). Bladder and intestinal discharges were normal. She was not crying, irritated, sleepy, nor had signs of altered level of consciousness. Upon physical examination, the patient was in good general condition, hydrated, with normal color and eutrophic; abdomen with normal bowel sounds, flaccid, absence of masses and visceromegaly, without signs of peritoneal irritation; umbilical scar with absence of phlogistic signs and absence of secretion; however, there was no foul odor. Thee patient was hospitalized with suspected omphalitis. Blood count, blood culture and C-reactive protein (CRP) were requested. Ampicillin (200mg/kg/day) and gentamicin 5mg/kg/day were started intravenously.

The blood count showed: hemoglobin 10.2; hematocrit 29.9; mcv 92.6; hmt 31.6; mchc 34.1; RDW 13.2; leukocytes 7480; segmented 1249.2 (16.7); lymphocytes 5273.4 (70.5); monocytes 703 (9.4) eosinophils 231 (3.1); basophils 22.4 (0.3%); platelets 607000. PCR 3.1; Negative blood culture.

After 12 hours of hospitalization, the patient was reassessed, remaining without new umbilical drainage and afebrile. We decided to maintain intravenous antibiotic therapy and to reassess the condition the following day.

After 36 hours of hospitalization, the patient was reassessed and the diagnostic hypothesis of persistent urachus was considered. The patient remained without drainage of secretions and afebrile. Subsequently, we ordered a full abdominal ultrasound, which was performed on the same day by a pediatric radiologist. The examination showed a tubular image with stratified walls that extended from the bladder dome to the umbilicus, matching the diagnosis of urachal sinus (Figure 1). On the same day, the patient completed 48 hours of intravenous antibiotic therapy, progressing to oral antibiotic therapy using cephalexin 60mg/kg/day.

After 3 days of interaction, the patient did not present new discharge of secretion, abscess, local hyperemia or fever. With that, she was discharged from hospital with a diagnosis of urachal sinus with infection under treatment. Oral antibiotic therapy was prescribed (cephalexin 60mg/kg/day for 10 days) and referred to the hospital's pediatric surgery outpatient clinic for follow-up and subsequent surgical correction.

DISCUSSION

Among the urachal anomalies, the sinus is among the two rarest [4,5]. It is characterized by having the umbilical end open, but without complete communication with the bladder, that is, it drains in a blind end[2,7]. In most cases, the persistence of urachus is an incidental diagnosis, as patients tend to be asymptomatic[3,5]. However, when there are local symptoms in the umbilical scar, there must be a high suspicion, thus avoiding underdiagnosis of the disease[3,5].

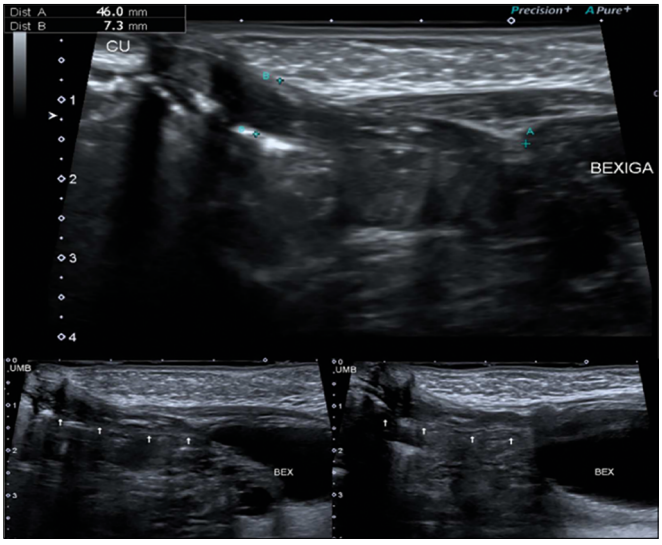


Figure 1. A tubular image of stratified walls going from the bladder dome to the umbilical scar (points A to B), characterizing probable urachal sinus.

The patient presented in the case had local secretion output in the umbilical scar; however, she had only 1 episode. With the suspicion of urachus persistence, ultrasonography was performed, since the history could initially lead to the diagnosis of omphalitis; this way antibiotic therapy would be performed and the patient would be discharged without the diagnosis of the anomaly. A priori, this patient could present a new infection in the future, sepsis, and even malignancy of the structure[5]. It is also noteworthy that the urachal sinus may be associated with an infected urachal cyst that drains through the umbilical scar, leading to a situation similar to that presented by the patient.

As for the imaging exams, ultrasound was chosen because it is a cheap, non-invasive, radiation-free exam that helps in the diagnosis of the anomaly, being described in the literature as the first exam to be performed[3-5,8]. The disadvantage of the exam is that it is operator dependent; therefore, it should be preferably performed by a pediatric radiologist. Other imaging tests, such as computed tomography, can be performed to further elucidate the case and differentiate between the types of urachus anomalies, but they are not essential for diagnosis[8].

In the case described, the anomaly was clearly observed through ultrasound, so it was decided not to perform another imaging test, since computed tomography is an exam that exposes the child to radiation, has a high cost and often requires sedation, so that it can be performed in the pediatric population. Thus, the patient was referred directly to a consultation with a pediatric surgeon, leaving the assessment of the need for another examination up to that professional's discretion; thus, avoiding the need for a possible unnecessary examination at the time of admission. As for laboratory tests, no changes were seen. However, there was a fetid odor in the region examined and a large amount of secretions had come out at the beginning of the condition; thus, we chose to maintain the antibiotic therapy.

CONCLUSION

A case of urachal sinus in a 41-day-old infant was described in this paper. Among the urachus anomalies, the sinus is one of the rarest. However, in the presence of signs and symptoms that suggest its presence, high suspicion and early diagnosis are of paramount importance, aiming at an early surgical correction and, thus, a reduction of possible future complications. The ultrasound examination should be the first to be performed, as it is cost-effective and does not cause significant harm to the child.

REFERENCES

1. Yu JS, Kim KW, Lee HJ, Lee YJ, Yoon CS, Kim MJ. Urachal Remnat diseases: spectrum of CT and US findings. Radiographic. 2001 Mar;21(2):451-61.
2. Tatekawa Y. Surgical strategy of urachal remnants in children. J Surg Case Rep. 2019 Jul;2019(7):rjz222.
3. Luo X, Lin J, Du L, Wu R, Li Z. Ultrasound findings of urachal anomalies. A series of interesting cases. Med Ultrason. 2019 Ago;21(3):294-8.
4. Danial AK, Tarabishi AS, Aldakhil A, Alzahran A, Najjar O, Ayoub K. Acute abdomen due to an infected urachal cyst in a 5-year-old female: case report. J Surg Case Rep. 2019 Mai;2019(5):rjz156.
5. To K, Naidu L, Bilolikar H. Urachal sinus leading to pyourachus presenting as recurrent periumbilical sepsis in an infant. BMJ Case Rep. 2017;2017:bcr2017-222187. DOI: https://doi.org/10.1136/bcr-2017-222187
6. Valpaços C, Costa M, Figueiredo S, Silva AR, Correia-Pinto J, Osório A. A rare case of pediatric volvulus caused by a persistent omphalomesenteric cyst. Birth Growth Med J. 2018;27(4):249-52.
7. Sreepadma S, Rao BRC, Ratkal J, Kulkarni V, Joshi R. A rare case of urachal sinus. J Clin Diagn Res. 2015 Jul;9(7):1-2.
8. Uead Y, Oki M. An infected urachal remnant. CMAJ. 2019 Mai;191(20):E562. DOI: https://doi.org/10.1503/cmaj.181400