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Laparoscopic treatment of an infected urachalcyst and diverticulum in a young adult: Presentation of a case and review of the literature

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ABSTRACT

INTRODUCTION: A urachal remnant is a rare anomaly in adults, with a heterogeneous presentation. We report a case of an infected urachal cyst associated with a urachal diverticulum.

PRESENTATION OF CASE: We report the case of a 16-year-old male who presented to our hospital with lower abdominal pain without any other signs of general infection. A physical examination revealed umbilical erythema with associated tenderness. All laboratory tests were normal. An ultrasound scan revealed an urachal cyst near the umbilicus and a second cyst near the bladder dome. We decided on a staged treatment with antibiotic administration followed by surgical excision of the urachus during laparoscopy. The patient was discharged on day 10 without complications. Pathology revealed chronic inflammatory tissue without signs of malignancy.

DISCUSSION: Urachus is a fibrous remnant of the allantois that progressively obliterates after birth, forming the median umbilical ligament. Incomplete regression of the urachal lumen results in several anomalies. These anomalies require treatment when discovered because of an increased risk of infection and neoplastic differentiation. A urachal cyst is the most common type of anomaly, and infection is the usual mode of presentation. Surgical intervention with complete excision of the urachus is the treatment of choice. A staged approach with antibiotic administration followed by surgery is recommended if signs of infection are present.

CONCLUSION: Urachal anomalies in adulthood are rare, with a nonspecific presentation. However, identifying a urachal anomaly is important because of the increased risk for infection and neoplastic differentiation. The laparoscopic approach is safe and patients recover rapidly.

1. Introduction

The urachus is a fibrous remnant of the allantois, a canal that drains the urinary bladder of the foetus and runs within the umbilical cord. The fibrous remnant lies in the space of Retzius, between the transverse fascia anteriorly and the peritoneum posteriorly.

Urachal remnant anomalies are uncommon in adulthood and present with a variety of clinical manifestations, making diagnosis difficult. The most common presentation is an infected urachal cyst. Surgical removal of urachal remnants is indicated to prevent recurrent infection, which occurs in 30% [1] of cases, and because there is a risk of adenocarcinoma in an unresected urachal remnant [2]. A staged procedure with antibiotic treatment for the acute infection, drainage of the abscess, and subsequent surgical removal of the urachal remnants is the treatment of choice [3]. A laparoscopic approach is as safe and effective a procedure as an open approach, with the advantages of minimal invasiveness [4].

We present the case of a 16-year-old patient who presented at our community hospital with abdominal pain, and in whom we discovered a urachal cyst associated with a urachal diverticulum that we treated with a staged procedure.

We want also to review the literature concerning the clinical presentation, the histopathological characteristics and the importance of the correct treatment of this uncommon occurrence, often misdiagnosed in adulthood.

Our work has been reported in line with the SCARE criteria [5].

2. Presentation of case

A 16-year-old Caucasian male patient, in good condition, without drug history, no smoking, was admitted to our community hospital, referred by family physician, with low abdominal pain that had worsened over 72 h without any other urological or digestive symptoms and without any signs of general infection. An abdominal examination revealed umbilical erythema with asso-

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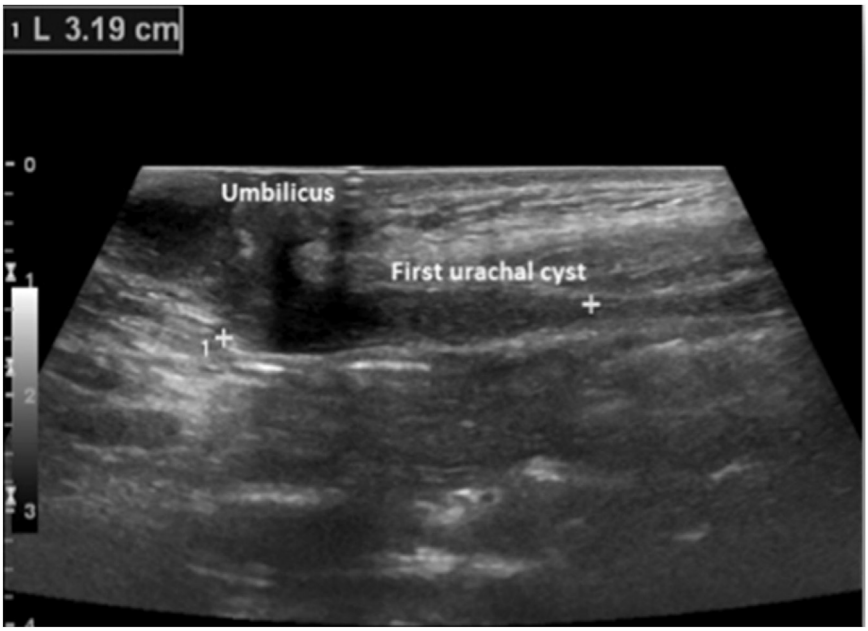

Fig. 1. Abdominal US showing the urachal cyst near the umbilicus.

ciated tenderness and a painful area without any secretions. All laboratory tests were normal.

An abdominal ultrasound was performed to exclude the presence of an umbilical abscess and revealed the presence of an urachal cyst near the umbilicus (Fig. 1), and a second cyst near the bladder dome, without apparent communication with the bladder (Fig. 2).

We decided on a staged procedure to treat the local periumbilical infection and after a cycle of antibiotic treatment with co-amoxicillin for 7 days, we excised the urachal remnant using a laparoscopic approach, with patient in supine position, using 3 trocars. An expert surgeon specialised in visceral surgery performed the intervention.

Under general anesthesia the patient was placed in supine position and a Foley catheter was inserted. A prophylactic dose of Cefuroxime was administrated before incision. The peritoneal cavity was accessed using the Hasson open technique in the left lumbar region with a 10 mm port. Two 5 mm working ports were inserted under direct vision in the left hypochondriac and iliac region. A 30° laparoscopic camera was used. After identification of the median and lateral umbilical ligament the dissection of the median umbilical ligament began below the urachal cyst with a laparoscopic hook. When we arrived with the dissection to the bladder we found that the cyst near the bladder dome was actually a urachal diverticulum (Fig. 3), with communication to the bladder, so we resected the bladder dome (Fig. 4), and the bladder defect was closed laparoscopically usin3-0 vicryl. When dissection was completed without rupture of the urachal cyst and diverticulum, the specimen was removed en bloc via the 10 mm port in a closed sac.

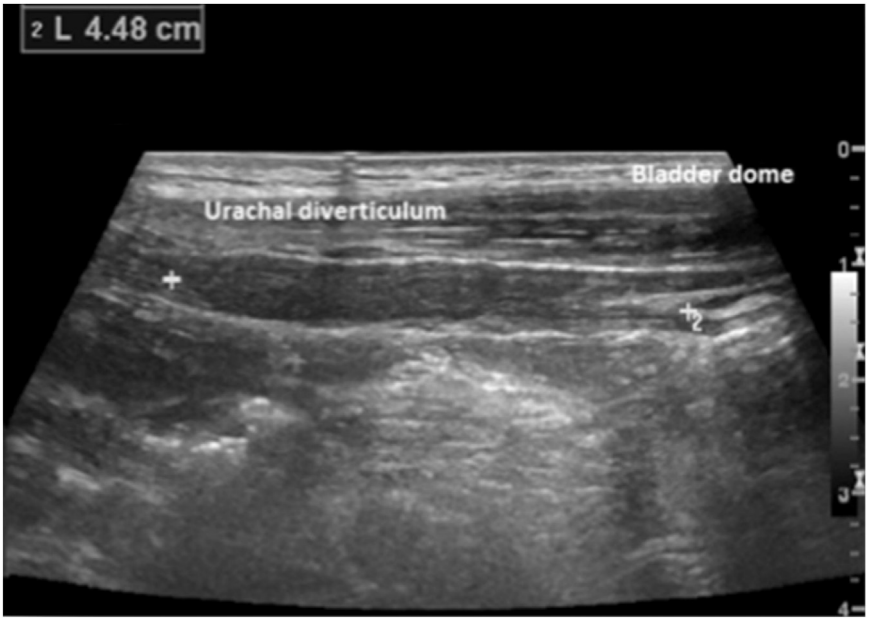

Fig. 2. Abdominal US showing a second cyst near the bladder dome, without apparent communication with the bladder.