



Case report

Infected urachal cyst in an adult, report of two observations



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ABSTRACT

Introduction: Urachus is an embryonic remnant that usually involutes before birth. Abnormal persistence of this structure gives embryologic malformation like an urachal cyst. Infection or malignancy degeneration can complicated it.

Case presentation: Case 1: We report 20 years old female patient consulted with acute abdominal pain. Clinical examination showed fever and infra-umbilical tender mass. The abdominal Computerized Tomography showed pelvic mass between umbilicus and bladder. The open laparotomy found infra-abdominal semi-solid mass. A complete resection was done and histological exam confirmed infected urachal cyst.

Case 2: A 19 years old male patient presented with abdominal pain and fever. Physical examination found tenderness in lower abdomen. Biology revealed leukocytosis, and Ultrasonography found a heterogeneous infra-umbilical mass. Surgical exploration by mini-laparotomy found an abscess urachal cyst that is confirm by histological exam after complete resection.

Clinical discussion: Urachal cyst in adult patient is rare. Clinical symptoms without complications are insignificant. Because of malignancy risk, adult urachal cyst are managed by surgery.

Conclusion: Infection cyst is the most common complication of urachal cyst. Complete resection is recommended because of malignancy degeneration risk.

1. Introduction and importance

The urachus is an embryologic remnant which is formed by the obliteration of the allantois. It degenerates after the birth and its vestige is the median umbilical ligament. Partial or complete failure of urachus obliteration can give rise four distinct embryologic malformations: patent urachus, umbilical-urachal sinus, vesico-urachal diverticulum, or urachal cyst [1]. Many of the aforementioned entities are diagnosed during early infancy and monitored with ultrasonography [2]. Among them, urachal cyst is second most common after patent urachus [3]. Because of infections and malignancy later in life, adult urachal cyst become surgical candidates. Without complications, most anomalies are asymptomatic and found incidentally during abdominal surgery or radiographic studies [4]. In case of urachal abscess, patient can present fever, abdominal pain or tender infra-umbilical mass. However, it can be misdiagnosed due to the heterogeneity of presenting symptoms.

We report two cases young adult patients with infected urachal cyst

discovered on CT scan and ultrasonography and treated with preoperative antibiotics and surgical management.

2. Cases presentation

This work has been reported in line with the scare criteria [5].

Case 1: a 20 years old female patient presented to our emergency department with abdominal pain, vomiting and dysuria. Clinical examination showed a 38.5° fever, and infra-umbilical tender mass, with 7 cm of diameter evolving for 12 days (Fig. 1). Laboratory values revealed white blood cell count of 13.800/mL. The abdominal CT scan found a heterogeneous pelvic mass located anteriorly in the midline, between the umbilicus and the bladder (Fig. 2). The process was extra-peritoneal and there was no evidence of communication with the urinary bladder. An open surgery was performed after starting intravenous antibiotics, which found an infra-umbilical semisolid mass without communication with bladder. Complete resection of the cyst was done. The post-

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Fig. 1. Infraumbilical mass.

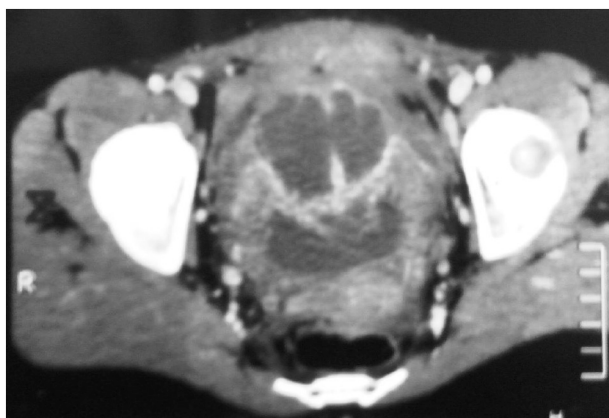


Fig. 2. TDM showed heterogeneous pelvic mass.



Fig. 3. Resection of urachal cyst.

operatives outcomes was uneventful and antibiotics were continued on five days. Histological examination revealed infected urachal cyst. Five years follow-up confirmed an uncomplicated recovery.

Case 2: a 19 years old male patient was admitted for abdominal pain and fever between 38° and 39° evolving for 5 days. Physical examination confirm high body temperature and tenderness in lower abdomen. Laboratory data revealed leukocytosis (11,000/mL). Ultrasonography showed heterogeneous infra-umbilical mass, with cystic and solid component in the midline of hypogastric region. Intra-venous antibiotics with penicillin was started and open mini-laparotomy showed a hypogastric purulent collection without communication with urinary bladder and abdominal cavity. A drainage and urachal cyst resection was performed. Pathological examination confirm urachal cyst abscess (Fig. 3). After 7 years follow-up, there was no functional complaint and any sign of recurrence.

3. Clinical discussion

The urachus is a fibrous cord arising from the early fetal anterior bladder wall to the allantois, extending cranially to the umbilicus [4]. In the adult population, the incidence of urachal anomalies is approximately 1 in 5000 [6,7]. Urachal cyst development occurs when the urachus obliterates appropriately at umbilical, and bladder ends with patency of the middle portion. Therefore, the urachal cyst does not communicate with either the bladder or the umbilicus [4].

Typically, cyst formation occurs in the lower one-third of the urachus, are relatively small, and asymptomatic [8]. However, many complications can occurs and make urachal cyst symptomatic like infection that is the most prevalent. Other complications associated with

urachal cysts include urinary retention, hemorrhage, and an increased incidence of adenocarcinoma [9]. A significant complication of infected urachal cysts is the formation of abscesses as we have seen in our patients. Because of various symptoms, infected urachal cyst have been frequently confused with appendicitis or Meckel's diverticula [10]. In this case, imagery like ultrasonography can help to make difference. Urachal cyst present as fluid collections with complex echogenicity in the midline between the umbilicus and bladder [11]. Abdominal CT scan can be used to distinguish infected urachal cysts and from carcinomas due to the clinical variability and complex echogenicity at US. Nevertheless, in some cases, the use multiple imaging studies may not yield sufficient evidence for clinicians to diagnose infected urachal cysts [4]. These patients typically require percutaneous needle biopsy or aspiration of fluid with histological examination.

Urachal cyst infections predispose patients to a number of acute complications, including bladder fistula formation, cyst rupture, peritonitis and sepsis [4]. The treatment of choice of a urachal abscess in the adult patient includes broad-spectrum antibiotics and drainage, if necessary, as initial therapy [12]. Because of malignant degeneration risk can reach 51 % [13] and reinfection rate, complete excision is recommended, but surgical management in one or two stage is unstandardized. Some authors recommended two stage approach with antibiotics and incision- drainage of cyst, followed later by surgical excision. The two-step surgical procedure has been noted to reduce the frequency of postoperative complications [5]. Ours patients received antibiotics and surgical resection with drainage in one stage because of preoperative diagnose was not clear [6]. Follow up in the office showed no un-toward outcomes.

Laparoscopic approach of urachal anomalies was first cited in 1993 by Trondsen et al. and is now the preferred surgical method. In both adults and children, the laparoscopic approach has demonstrated to be safe, effective, with reduced invasiveness, allows for precise tissue dissection, and diminishes blood loss, decreases hospital stay, and faster convalescence [14].

4. Conclusion

Urachal abscess is rare in adult population and clinical or imaging aspect are not specific. We reported two cases of infected urachal cyst managed by surgical resection which is recommended by author. However, the use of laparoscopic approach could be started in the

future.

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Ethical approval

Ethical committee of our hospital approve this publication.

Consent

written informed consent was obtained from the patients of this case report and accompanying images. A copy of written consent is available for review by the Editor-in-Chief of this journal on request.

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Declaration of competing interest

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