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Case Report

Abscess in urachal remnant in adult female patient: A case report

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Abstract: The urachus is remnant of an embryologic tract that connects the allantosis with the urinary bladder. It normally degenerates after birth into the medial umbilical ligament however its persistence has been seen in children and adults resulting in different clinical problems and presentation. Spectrum of congenital urachal anomalies can be seen such as patent urachus, umbilical-urachal sinus, vesicourachal diverticulum, urachal cyst and acquired urachal remnant diseases eg infection, neoplasm. The most frequently reported urachal anomalies in adults are infected urachal cyst and urachal carcinoma. Urachal cysts are extremely rare and even more uncommon in adults, as it is usually diagnosed in children. Because urachal remnant diseases are uncommon, definitive presurgical diagnosis is not easily made. We present and discuss the case of infected urachal remnant in a 27 years female who presented with lower abdominal pain and fever**.**

Keywords: Urachal, remnant, infected.

INTRODUCTION:

The urachus or median umbilical ligament is a fibrous cord that originates from the involution of the allantoic canal. It extends from the bladder dome to the posterior umbilicus. A partial or total defect of obliteration of the urachal channel after the fifth month of gestation can be the origin of urachal abnormalities (Tazi, F. *et al.*, 2012).

Urachal abnormalities such as a patent urachus (48%), urachal cyst (31%), umbilical urachal sinus (18%) and a vesicourachal diverticulum (3%) may occur, this depending on the location and extent to which the originally tubular urachus remains patent. The incidence of these anomalies is 1 in 5000-8000 live births (Hassan, S. *et al.*, 2017).

An infected urachal cyst is one of a spectrum of presentations of urachal pathology, all of which are rare in adulthood. Patients tend to present in a heterogeneous fashion, making diagnosis difficult. Ultrasound, computed tomography and magnetic resonance imaging will all assist in making this important diagnosis. Delay in treatment may result in complications include sepsis, fistula formation and rupture leading to peritonitis (Qureshi, K. *et al.*, 2013).

Presenting symptoms may include fever, dysuria, lower abdominal pain, a palpable abdominal mass with or without overlying erythema, recurrent UTIs or discharge from the umbilicus, ranging from clear to bloody/ suppurative particularly with a patent urachus (Tazi, F. *et al.*, 2012).

We report herein a case of urachal remnant abscess in adult female.

CASE:

A 27 year old female multiparous patient resident of Quetta presented with lower abdominal pain and burning micturition. Laboratory test revealed WBC count of 6700 mm^{-3}, elevated ESR levels of 110mm/hr, urea 27mg/dl and creatinine 0.7mg/dl. Viral serology was negative and urine RE showed few puss cells and RBCs. Ultrasonography revealed the presence of an avascular heterogeneous mass in the pelvis and midline extending from the antero-superior surface of the urinary bladder to the anterior abdominal wall (Fig 1).

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CECT scan of the abdomen confirmed the presence of an ill-defined peripherally enhancing hypodense collection measuring 6 x 4.9 x 4.4cm (CC x Ts x AP) extending from the dome of the urinary bladder towards the umbilicus with adjacent fat strandings (Fig 2). The patient received IV antibiotic therapy for few days and follow up Ultrasound scan showed regression in size of collection and improvement of symptoms.The patient was not willing for surgery so was discharged on oral medication however was counselled that such symptoms might recur.

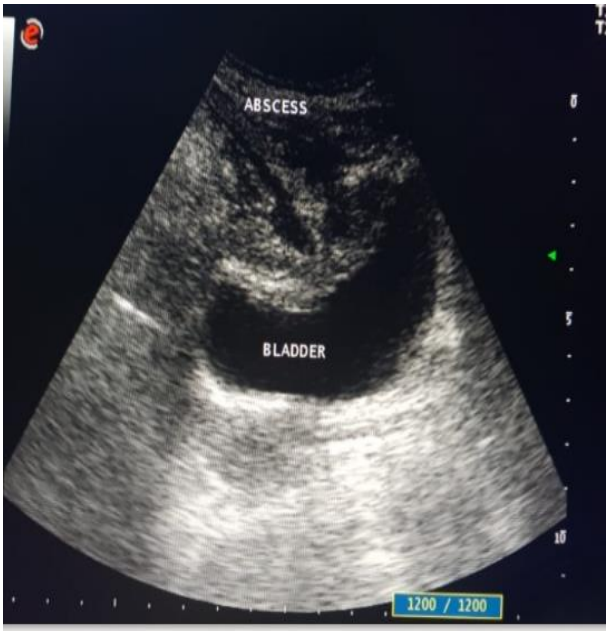

Fig1. Grey scale usg image showing heterogenous hypoechoic collection in supra pubic region with a linear tract passing through its centre

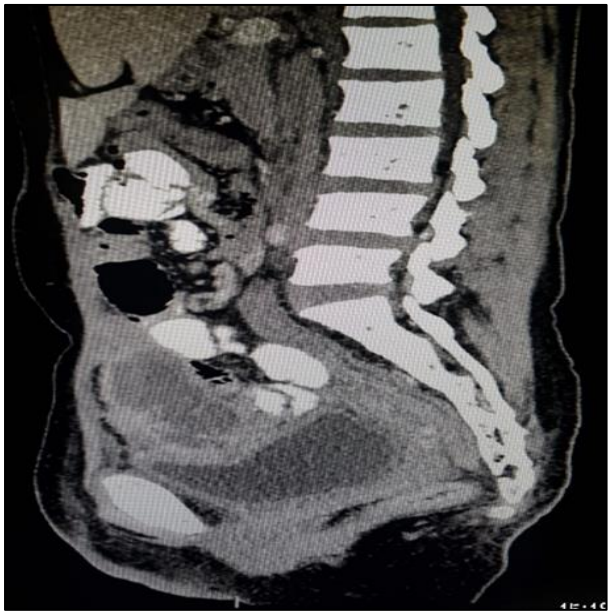

Fig2. Sagittal reconstructed image of CE CT showing peripherally enhancing hypodense collection extending from bladder dome towards umbilicus. Mild thickening is also noted along the dome.

DISCUSSION:

Urachus is a fibrous band extending from the anterior end of bladder to the umbilicus. Embryologically it represents the vestigial part of cloaca (a urogenital sinus extension) and allantois (a yolk sac derivative). Usually the urachus involutes in utero or early childhood forming the median umbilical ligament (Mistry, K. A. *et al.*, 2015). The incomplete involution of urachus results in four type of abnormalities such as patent urachus, umbilical–urachal sinus, vesicourachal diverticulum and urachal cyst. These anomalies are twice as common in males and the most common presentation is the patent urachus in about 50% of cases (Ramos Pacheco, V. H. *et al.*, 2016). However, in our case patient was female. Urachal cysts are the commonest type of urachal anomaly. Infection is the usual mode of presentation amongst adult cases otherwise the condition usually remains asymptomatic (Qureshi, K. *et al.*, 2013). Urachal sinus abscess usually occurs by infection of mucinous secretion via the umbilicus. The commonly cultured microorganisms from the pus are Escherichia coli, Enterococcus faecium, Proteus, Streptococcus viridans and Fusobacterium (El Ammari, J. E. *et al.*, 2011). In our case aspiration/ intervention /culture was not done.

The clinical signs and symptoms are nonspecific, as urachal sinus is largely asymptomatic until they become infected. However, the presence of the triad of symptoms including a tender midline infraumbilical mass, umbilical discharge and sepsis should arouse suspicion of urachal sinus (Ncbi.nlm.nih.gov. 2019). In our case patient presented with supra-pubic pain, fever and urinary complaints.

Complications may include infection, bleeding within the cyst, enlargement, intraperitoneal rupture, intestinal fistula, intestinal obstruction, lithiasis, and a high incidence of malignant degeneration. In the differential diagnosis, vitelline duct anomalies, appendicitis, granulomatous inflammations, and granulation tissue from the umbilical stump should be kept in mind (Kudra Danial, A. *et al.*, 2019).

Because of the nature of the condition radiographic evaluation of urachal remnant by ultrasound, CT and/or MRI is essential for confirming diagnosis or abscess formation. Abdominal tomography can accurately detect the pyo urachus which shows a mass located deep to the rectus abdominis between the bladder and the umbilicus with a conical shape, peripheral inflammatory changes in the surrounding tissues, and intraperitoneal fluid. When patients present with an infected urachal anomaly, initial management should include broad-spectrum antibiotic therapy, if possible, even before culture results are available and initial percutaneous or surgical drainage is performed (Herman, T.E. 1995). As in our case patient responded well to IV antibiotic treatment.Ultimately, surgical

intervention is the treatment of choice but other methods have been debated. Complete excision is important because malignant degeneration of the remnant is possible (Qureshi, K. *et al.,* 2013). However in our case patient responded well to antibiotics and was not willing for surgery.

Urachal anomalies are rarely observed clinically, with only 8/40,000 admissions to a surgical department, according to Blichert-Toft and Neilson. The urachus is located in a clinically silent area, extraperitoneally in the space of Retzius, as a result possible symptoms and clinical signs of inflammation as well as of tumors are in most cases non-specific or delayed, or even absent (Blichert-Toft, M., & Nielson, O.V. 1971). Proper Radiological knowledge is important for making correct diagnosis. A recent report showed that children are more likely to have an infected urachal cyst, while adults are more likely to have an infected urachal sinus (Iuchtman, M. *et al.*, 1993).

CONCLUSION:

Urachal anomalies though once thought as uncommon are more common nowadays with more cases discovered incidentally, because of the increased use of cross-sectional imaging. Although an abnormal persistence of an embryologic communication between the bladder and the umbilicus is often diagnosed and treated in childhood, it may persist into adulthood with a greater risk of morbidity. Despite the low incidence in adult patients, it should not be ignored in the differential diagnosis of abdominal pain. Thorough understanding of its anatomy, its associated complications and typical location will help radiologist in making correct diagnosis. Sagittal USG, CT and MRI are very helpful in guiding towards correct diagnosis.

REFRENCES:

1. Tazi, F., Ahsaini, M., Khalouk, A., Mellas, S., Stuurman-Wieringa, R. E., Elfassi, M. J., & Farih, M. H. (2012). Abscess of urachal remnants presenting with acute abdomen: a case series. *Journal of Medical case reports*, *6*(1), 226.
2. Hassan, S., Koshy, J., Sidlow, R., Leader, H., & Horowitz, M. (2017). To excise or not to excise infected urachal cysts: A case report and review of the literature. *Journal of pediatric surgery case reports*, *22*, 35-38.
3. Qureshi, K., Maskell, D., McMillan, C., & Wijewardena, C. (2013). An infected urachal cyst presenting as an acute abdomen–A case report. *International journal of surgery case reports*, *4*(7), 633-635.
4. Ramos Pacheco, V. H., Dominguez, Y. S., & Cervantes Sánchez, A. M. D. C. (2016). Infected urachal remnants: an unusual presentation. *BJR| case reports*, 20150226.
5. Mistry, K. A., Khatri, G. D., Sood, D., Sharma, S., Morey, P., Sood, S., ... & Shukla, A. (2015). Late presentation of congenital urachal sinus in a middle aged male complicated by an umbilical abscess: A case report. *The Egyptian Journal of Radiology and Nuclear Medicine*, *46*(3), 755-759.
6. El Ammari, J. E., Ahallal, Y., El Yazami Adli, O., El Fassi, M. J., & Farih, M. H. (2011). Urachal sinus presenting with abscess formation. *ISRN urology*, *2011*.
7. Urachal sinus (Concept Id: C3472657) - MedGen - NCBI [Internet]. Ncbi.nlm.nih.gov. 2019 [cited 30 May 2019]. Available from: https://www.ncbi.nlm.nih.gov/medgen/758682
8. Kudra Danial, A., Sankari Tarabishi, A., Aldakhil, A., Alzahran, A., Najjar, O., & Ayoub, K. (2019). Acute abdomen due to an infected urachal cyst in a 5-year-old female: case report. *Journal of surgical case reports*, *2019*(5), rjz156.
9. Herman, T.E. (1995). Shackelford GDP urachus: CT manifestations. J Comput Assist Tomogr, 440-3.
10. Blichert-Toft, M., & Nielson, O.V. (1971). Congenital patent urachus and acquired variants: diagnosis and treatment. Review of the literature and report of 5 cases. Acta Chir Scand, 137, 807-814.
11. Iuchtman, M., Rahav, S., Zer, M., Mogilner, J., & Siplovich, L. (1993). Management of urachal anomalies in children and adults. *Urology*, *42*(4), 426-430.