

Infected Urachal sinus

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Section: Uroradiology & genital male imaging

Imaging Technique: CT

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Case Type: Clinical Cases

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Patient: 39 years, male

Clinical History:

A 39-year-old man presented with pain and redness around the umbilicus and umbilical purulent discharge.

Imaging Findings:

A 39-year-old man presented with pain and redness around the umbilicus and umbilical purulent discharge. Computed tomography showed a 2x2,5x11cm fluid-filled mass with a heterogeneous density and ill-defined margins lying along the course of urachus (Figure I). An urachal anomaly is diagnosed and to determine the exact type procedure was tailored with a CT fistulography through the umbilicus in the following day. CT fistulography showed no communication between the lesion and urinary bladder(Figure II). Urachal sinus accompanied by infection was reported. Surgical excision confirmed the final diagnosis.

Discussion:

Urachus is the urinary canal of the fetus which is the portion of the reduced allantoic stalk between the apex of the bladder and the umbilicus. Postnatally, it is normally merely a fibrous cord. But occasionally the allantoic lumen may persist because of failure of closure of the epithelial urachal tube in the fifth month forming an urachal anomaly. There are four types of urachal anomalies; Patent urachus, urachal sinus, urachal diverticulum and urachal cyst. Patent urachus is the fistula between bladder and umbilicus which is seen with an incidence of 1/200,000 in live births and the most common urachal anomaly (50%). In this case the urine drains from umbilicus. Completely patent urachus is mainly associated with major urological malformation especially with the Prune Belly sequence and is only seen at birth. Urachal sinus is the condition when the umbilical side of the urachus is persistent. Urachal diverticulum is the name of the urachus with an open end at the bladder side. Urachal cyst is a gradually enlarging cyst due to closure of both ends of the urachus with an incidence of 1/5,000 at autopsy series. Urachal anomalies can be identified on ultrasound (US) or computed tomography (CT) as extraperitoneal midline abnormalities between the umbilicus and the dome of the bladder. A normal urachal remnant appears as an elliptical (hypoechoic at US) structure located posterior to the rectus abdominis muscle and midanterosuperior of the distended bladder. CT fistulography is most useful in establishing the nature of the anomaly and extent of the lesion. Patients with urachal sinus may present with periodic discharge from the umbilicus. Except from those with patent urachus patients with urachal anomalies are usually asymptomatic. However they may become symptomatic when associated with complications. Complications of the urachal anomalies include infection which is the most common (23 %) and intestinal obstruction, hemorrhage into cyst, peritonitis because of rupture and malignant degeneration. It is difficult to distinguish infected urachal remnants from urachal carcinoma. The presence of hematuria, mural nodularity and calcification may represent malignancy at CT and can be helpful as distinguishing features in some cases. Exact definition of type of the urachal anomaly is essential in radiologic examinations rather than differentiation between benign and malignant processes. Laparoscopic excision is advised rather than laparotomy in

the surgical approach of these lesions.

Differential Diagnosis List: Infected Urachal sinus

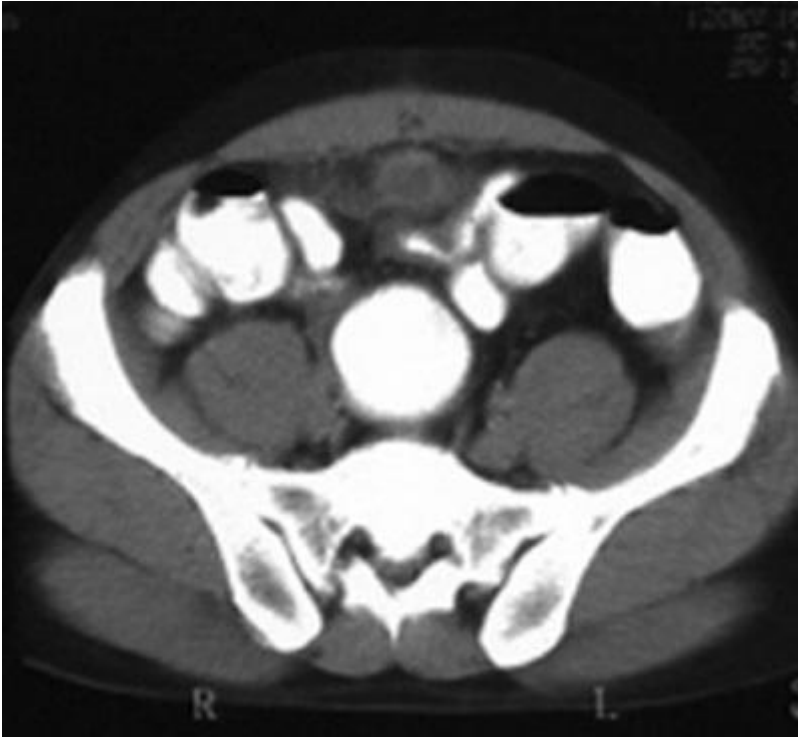
Final Diagnosis: Infected Urachal sinus

References:

- Yu JS, Kim KW, Lee HJ, Lee YJ, Yoon CS, Kim MJ.
Urachal remnant diseases: spectrum of CT and US findings
Radiographics 2001 Mar-Apr;21(2):451-61. (PMID: [11259707](#))
- Cilento BG Jr, Bauer SB, Retik AB, Peters CA, Atala A
Urachal anomalies: defining the best diagnostic modality
Urology 1998 Jul;52(1):120-2. (PMID: [9671882](#))
- Spataro RF, Davis RS, McLachlan MS, Linke CA, Barbaric ZL
Urachal abnormalities in the adult
Radiology 1983 Dec;149(3):659-63. (PMID: [6647841](#))
- DiSantis DJ, Siegel MJ, Katz ME.
Simplified approach to umbilical remnant abnormalities
Radiographics 1991 Jan;11(1):59-66. (PMID: [1996398](#))
- Linos D, Mitropoulos F, Patoulis J, Psomas M, Parasyris V.
Laparoscopic removal of urachal sinus.
J Laparoendosc Adv Surg Tech A 1997 Apr;7(2):135-8. (PMID: [9459815](#))

Figure 1

a



Description: Enhanced CT scan obtained just below the umbilicus shows a fluid filled round mass posterior to the rectus abdominis muscle. **Origin:**

Figure 2

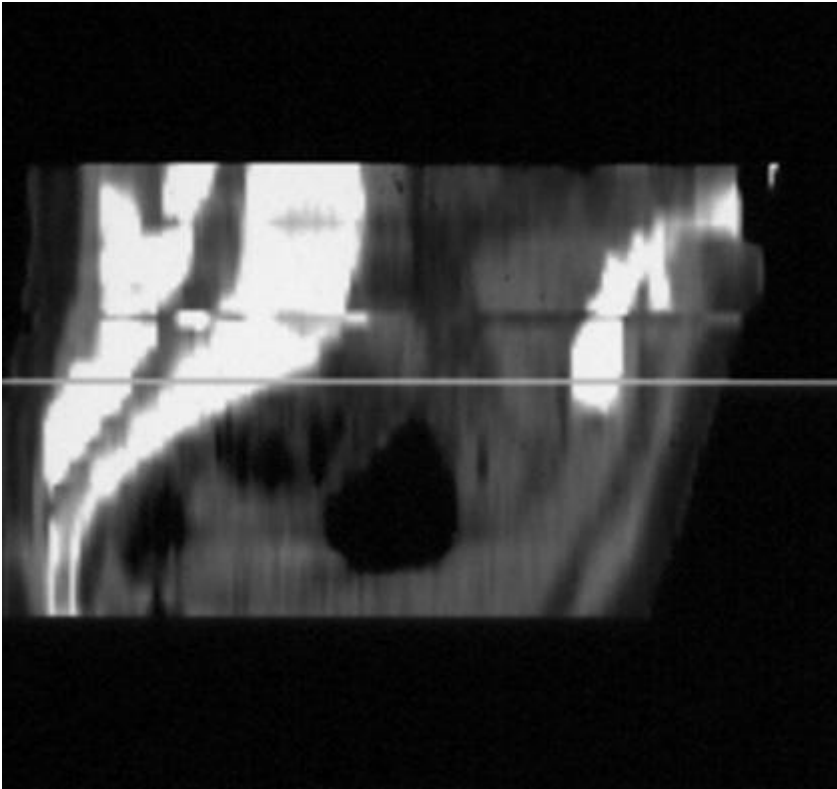
a



Description: Lesion was almost completely opacified during CT fistulography through the umbilicus

Origin:

b



Description: Sagittal reconstruction of the CT fistulography revealed a blind sinus tract; There was no communication between the lesion and urinary bladder. **Origin:**