Inflamed Urachal Remnant
Joseph Junewick, MD FACR
06/11/2010

History
11 year old with right lower quadrant pain and fever.

Diagnosis
Inflamed Urachal Remnant

Discussion
The urachus, or median umbilical ligament, extends upward in the midline from the anterior dome of the bladder toward the umbilicus. It is a vestigial remnant of the cloaca (the cephalic extension of the urogenital sinus and a precursor of the fetal bladder) and the allantois (a derivative of the yolk sac). The fetal urachus is tubular and persists postnatally as a fibrous band with no known function. Varying degrees of urachal patency can give rise to various clinical problems, not only in infants and children but also in adults.

Congenital urachal anomalies are twice as common in males compared to females. There are four types of congenital urachal anomalies: 1) patent urachus, 2) umbilical-urachal sinus, 3) vesicourachal diverticulum, and 4) urachal cyst. A patent urachus accounts for about 50% of all cases of urachal anomalies. A patent urachus is commonly seen in patients with bladder outlet obstruction (posterior urethral valves). An umbilical-urachal sinus accounts for about 15% of cases. Umbilical-urachal sinus consists of blind dilatation of the urachus at the umbilical end. A small opening into the umbilicus is generally present. Vesicourachal diverticulum accounts for about 3%–5% of urachal anomalies. In vesicourachal diverticulum, the urachus communicates only with the bladder dome. This condition results when the vesical end of the urachus fails to close. Vesicourachal diverticulum is asymptomatic in most cases and is usually discovered incidentally on imaging. Urachal cysts for about 30% of urachal remnants. A urachal cyst develops if the urachus closes at both the umbilicus and the bladder. It occurs primarily in the lower one-third of the urachus. Urachal cysts are usually small but if they enlarge they can become symptomatic. Occasionally the urachus may close normally but then reopen as a result of other pathologic conditions.

The majority of patients with urachal abnormalities are asymptomatic. Patients with patent urachus present with fluid discharge from the umbilicus; urachal-umbilical fistulas have periodic umbilical drainage. Infection is a common presenting symptom. Benign urachal neoplasms including adenomas, fibromas, fibroadenomas, fibromyomas, and hamartomas are extremely rare. Malignant urachal neoplasms are rare, representing less than 0.5% of all bladder cancers.

Findings
US-Heterogeneous lesion arising form anterior dome of the urinary bladder with cordlike extension to umbilicus. Note calcifications within the lesion.

Reference

Contributor
Disclaimer
This teaching site is partially funded by an educational grant from GE Healthcare and Advanced Radiology Services, PC. The material on this site is independently controlled by Advanced Radiology Services, PC, and GE Healthcare and Spectrum Health have no influence over the content of this site.

Content Download Agreement
The cases and images on this website are owned by Spectrum Health. Permission is granted (for nonprofit educational purposes) to download and print materials to distribute for the purpose of facilitating the education of health professionals. The authors retain all rights to the material and users are requested to acknowledge the source of the material.

Site Disclaimer
This site is developed to reach healthcare professionals and medical students. Nothing this site should be considered medical advice. Only your own doctor can help you make decisions about your medical care. If you have a specific medical question or are seeking medical care, please contact your physician.

The information in this website is provided for general medical education purposes only and is not meant to substitute for the independent medical judgment of a physician relative to diagnostic and treatment options of a specific medical condition.

The viewpoints expressed in these cases are those of the authors. They do not represent an endorsement. In no event will Advanced Radiology Associates, PC, Spectrum Health Hospitals (Helen Devos Children's Hospital) or GE Healthcare be liable for any decision made or action taken in reliance upon the information provided through this website.