A Case Report of Urachal Abscess: A Rare Differential in Adult Abdominal Pain

Chelsea Walker MD

Abstract
A 59-year-old woman presents with decreased appetite and abdominal pain. Her symptoms lead to lethargy and weakness. Abdominal pain is a common presentation in the primary care and emergency room setting. She was initially diagnosed with an abscess and treated with antibiotics and drainage. Upon further evaluation and cystoscopy she was discovered to have a urachal cyst. Urachal cysts are extremely rare and even more uncommon in adults, as it is usually diagnosed in children. It is an important diagnosis not to miss in the differential of adult abdominal pain as surgical intervention is often necessary for treatment. This case highlights urachal cyst as a rare and serious differential of adult abdominal pain.

The urachus is an embryologic tract that connects the allantois with the urinary bladder, which degenerates after birth into the median umbilical ligament. Normal obliteration of the urachus is incomplete or absent in some people, and usually presents in children.¹ Urachal anomalies and infections were once a common cause of illness and death among neonates throughout the world.² But it is a rare pathologic disease entity in the adult, which may present only with abdominal pain.³ Because adults may present without erythematous periumbilical tissue or exudates, its presence cannot be ruled out by physical exam and must be considered as a rare differential for abdominal pain.⁴ This is a report of a woman with a case of urachal abscess, who presented with abdominal pain for 1 month.

A 59-year-old woman had the insidious onset of decreased appetite and vague abdominal pain, which lead to lethargy and weakness. Eventually the patient remained stationary for 2 days and EMS was subsequently activated. The pain was described as diffuse, but greatest in the LUQ. It was periodically stabbing and waxed and waned. The patient felt her abdomen had become protuberant over the span of several months and she had a constant feeling of fullness. She had fever and some recent dysuria in addition to her chronic urinary incontinence. Her review of systems was also significant for weight loss of greater than 10 pounds, excessive thirst, and decreased oral intake. She denied any nausea, vomiting, diarrhea, melena, and hematemesis. She was diagnosed with hypertension in the past, but denied other comorbid diseases including: asthma, emphysema, cancer, diabetes, hypercholesterolemia, kidney disease, liver disease, ulcers, seizure, stroke, and HIV. Her surgical history was significant for an appendectomy, right hip replacement in 1984, and back surgery in 1999. She reported an allergy to morphine and social alcohol use, but denied any illicit drug use. On physical examination, the temperature was 99.5 °F, the heart rate was 102 beats/min, and the respiratory rate was 20 breaths/min. The abdomen was soft, but tenderness and left sided voluntary guarding was found without a palpable mass. Bowel sounds were normactive. Rectal exam was performed with no masses palpated.

Laboratory data revealed a white blood cell count of 26.1 x 10³/μL, hemoglobin level was 9.1 g/dL, and platelet count of 919 x 10³/μL. Blood biochemistry revealed sodium 136 mEq/L, potassium 2.3 mEq/L, chloride 83 mEq/L, bicarbonate 43 mEq/L, BUN 30 mg/dL, creatinine 0.8 mg/dL, glucose 102 mg/dL, and calcium 7.8 mg/dL. Liver function studies uncovered a total protein of 8.6 g/dL, ALP 29 U/L, AST 31 U/L, Albumin 2.2 g/dL, total bilirubin 0.9 mg/dL, direct bilirubin 0.7 mg/dL, and alkaline phosphatase 130 U/L. Her urine contained 5-10 white blood cells, with a specific gravity of 1.010.

Computed tomography of the pelvis revealed a 10 x 8 cm fluid collection immediately above the bladder containing air, suspicious for an abscess, which extended up to the region of the left rectus muscle. This was associated with a very thickened bladder wall. Within the left rectus muscle a 3 x 3.5 x 1 cm fluid collection with air was identified and also suspicious for an abscess.

The patient was admitted and started on IV antibiotics. A cystoscopy was performed which did not reveal any obvious communications from the bladder to the abscess, however, the bladder was very trabeculated and distorted. Subsequently both abscesses were incised and drained under CT guidance. Approximately 120 mL of foul smelling, viscous, brown, inflammatory fluid was initially removed. Microbiology of the fluid reported Klebsiella pneumoniae, Escherichia coli, Enterococcus avium, and Peptostreptococcus. The larger abscess anterior to the bladder underwent flushing with 30 mL saline every 3 hours after placement of a pigtail drainage catheter. Drainage fluid slowly became more serosanguenous over the period of one week. Later abscessogram with revision and visualization of the anterior bladder abscess cavity revealed connection to the smaller left rectus abscess and direct fistulous communication with the bladder.

Discussion
Urachal remnants can present as one of four primary recognized pathologies; patent urachus, urachal sinus, vesicourachal diverticulum, and urachal cyst. Patent urachus involves free communication between the bladder and the umbilicus, and presents with urine leakage through the umbilicus or occasionally with a urinary tract infection. Urachal sinus and vesicourachal diverticulum are variations in incompletely patent connections, the former communicates with the umbilicus, but not the bladder. Conversely, a vesicourachal diverticulum communicates between the urachus and the bladder, but not with the umbilicus. Urachal cysts are the last and most common type of urachal anomalies.³ It is an incompletely patent urachus that is isolated from both bladder and umbilicus. It can be argued that this case report was a vesicourachal diverticulum that developed into a urachal abscess, as a patent connection between the abscess and the bladder was elucidated.

Though urachal anomalies are rare,⁶ the clinician must be highly suspicious as urachal cystic tissue accounts for 20-40% of bladder adenocarcinomas.⁷ Because of the relative rarity of this disorder there are frequent misdiagnoses.⁶ Urachal cysts may present only with abdominal pain and it should at least be considered in the differential diagnosis. However, persistent urachal pathologies may
mimic a large number of conditions; as presentation sometimes includes mild periumbilical erythema, umbilical discharge of urine or pus, urologic complaints consistent with a urinary tract infection, symptoms suggestive of an acute surgical abdomen, or a midline mass. Urachal cysts, especially if infected, often present with fever, leukocytosis, nausea, vomiting, and a mass. Thus they mimic an acute abdomen and are frequently misdiagnosed as acute appendicitis.\textsuperscript{1,5} The differential of urachal abscess should include hematoma, urachal carcinoma, sarcoma of the abdominal wall, peritoneal tumor, metastatic carcinoma, ventral or umbilical hernia, and inflammatory lesions.\textsuperscript{4,9,10} History taking, a detailed clinical exam, and computed tomography may aid in raising clinical suspicions. Appropriate treatment includes antibiotics, percutaneous drainage, and eventual surgical excision because of the high incidence of recurrences.\textsuperscript{11,12} It is evident that urachal anomalies should be considered in the differential of abdominal pain to ensure timely and appropriate management.

Author’s Affiliation:
- John A. Burns School of Medicine, University of Hawai‘i, Honolulu, HI 96813

Correspondence to:
Chelsea Walker MD
98-14330 Kaahumanu St.
Aiea, HI 96701
Ph: (808) 627-3200
Fax: (808) 623-7872
Email: walkerch@hawaii.edu

References