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Infected urachal cyst secondary to a Crohn's enterourachal fistula

Lindsay L. Hollander[a], Eric D. Girard[a,*], Kimberly A. Ruscher[a], Wael Sayej[b], Christina Kim[c], Christine M. Finck[a,1]

[a]Division of Pediatric Surgery, Connecticut Children's Medical Center, Hartford, CT, USA
[b]Division of Pediatric Gastroenterology, Connecticut Children's Medical Center, Hartford, CT, USA
[c]Division of Pediatric Urology, Connecticut Children's Medical Center, Hartford, CT, USA

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Abstract Enterourachal fistulas are exceedingly rare in Crohn's patients. We report a case of a presumed enterourachal fistula that led to an infected urachal cyst. Preoperative medical treatment obliterated the fistula and avoided the need to resect bowel at the time of operation. We recommend consideration of this diagnosis in a Crohn's patient with a midline abdominal mass.

As the embryologic components of the genitourinary system mature into the final products, there are multiple pathologic abnormalities that can arise, including urachal cysts [1,2]. If a urachal cyst is present, the likelihood of the cyst becoming infected is exceedingly rare. If infected, the most likely etiology is translocation from the urinary tract. To date, there are no documented cases of infection due to fistulization from Crohn's disease, without the fistula continuing on to drain cutaneously through the umbilicus. This case report describes a patient who had an initial presentation of inflammatory bowel disease with a midline mass that proved to be a urachal abscess with a suspected nidus of infection from the adjacent ileum, inflamed due to Crohn's disease.

* Corresponding author. Division of Pediatric Surgery, Connecticut Children's Medical Center, Hartford, CT 06106, USA.
E-mail address: ericdgirard@gmail.com (E.D. Girard).
[1] Please address all reprint requests to: Christine M. Finck, MD, Division of Pediatric Surgery, Connecticut Children's Medical Center, Hartford, CT 06106, USA.

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1. Case report

A 15-year-old boy presented to gastroenterology (GI) clinic with a 1-year history of intermittent abdominal pain and occasional loose bowel movements. Over the previous 3 months, his symptoms had progressively worsened. He presented with a 10- to 15-lb weight loss, abdominal soreness, diarrhea, urgency, and a peri-anal fistula. He had no prior abdominal surgeries. On exam, the patient had right lower quadrant tenderness, a large palpable infraumbilical mass, and an actively draining peri-anal fistula. He denied any drainage from his umbilicus. An endoscopy and colonoscopy revealed nodularity in the cecum with mild inflammatory changes, an edematous, swollen and friable ileocecal valve and terminal ileum inflammation with ulcerations (Fig. 1). A CT scan was performed which demonstrated severe thickening of the distal 40 cm of the terminal ileum to the level of the ileocecal valve and a midline soft tissue density along the anterior abdominal wall measuring 1.9 × 4.0 cm. The mass contained punctate foci

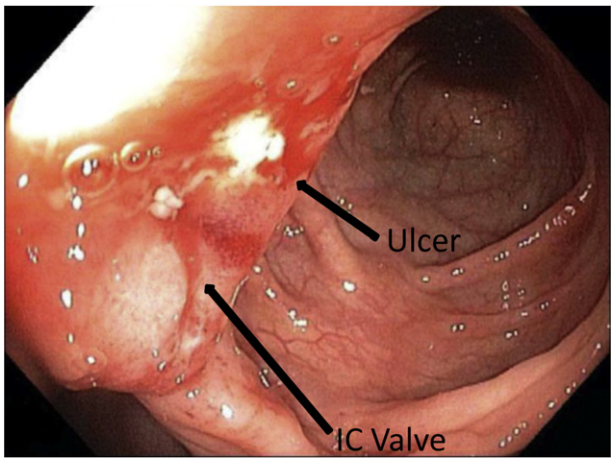

Fig. 1 Endoscopic view of an inflamed, edematous, and ulcerated ileocecal valve (IC Valve).

of gas and was suspicious for an abscess or a phlegmon. He was admitted for intravenous antibiotics and low-dose steroids. After 1 week, he improved and was sent home. An MRI performed 1 month later demonstrated improvement in the terminal ileal disease with increasing size in the midline urachal mass. The mass measured 7.4×2.7×4.3 cm on ultrasound and 5.0×2.8×8.7 cm on repeat MR enterography. The MRI also showed multiple foci of air within the mass which was most consistent with an abscess. Additionally, the MRI presumably identified a tract between the bladder dome and the anterior abdominal collection. Also, a likely fistula was seen between the fluid collection and the adjacent inflamed bowel (Fig. 2).

The suspected diagnosis was an infected urachal cyst secondary to an enterourachal fistula due to the patient's Crohn's flare and previously inflamed terminal ileum. The patient was taken to the operating room for a diagnostic laparoscopy. He was noted to have a cystic lesion of the urachus containing purulent, foul-smelling fluid, overlying a phlegmon containing cecum and terminal ileum without a clearly identifiable fistulous connection (Fig. 3A). A persistent urachal tract leading from the mass to the bladder was seen. At that point the operation was converted to an open procedure, the inflamed bowel was dissected off the anterior wall, and the urachal abscess, tract, and bladder cuff were resected. The bladder was repaired and a Foley catheter was left in place for 1 week postoperatively to allow the bladder incision to heal. After thorough inspection of the intestine, creeping fat was noted on the terminal ileum, however, no enteric fistula was appreciated (Fig. 3B). In the setting of Crohn's disease and no identifiable fistula, it was decided not to resect the terminal ileum.

Review of the specimen revealed a urachal remnant with unremarkable transitional-type epithelial lining, intramural acute and chronic inflammation with reactive fibroblastic and histiocytic proliferation, and focal foreign body giant cell reaction. No aerobic or anaerobic growth resulted from fluid culture studies. The patient's postoperative course was uneventful. A cystogram, performed 1 week postoperatively, showed no leak, and the patient was sent home on metronidazole, prednisone, and mesalamine.

2. Discussion

The allantois is an embryologic canal connecting the bladder to the umbilical cord. In normal development, the allantois will involute to a fibrous remnant known as the urachus, and eventually the median umbilical ligament during the 4th to 5th month of gestation. Uncommonly, the

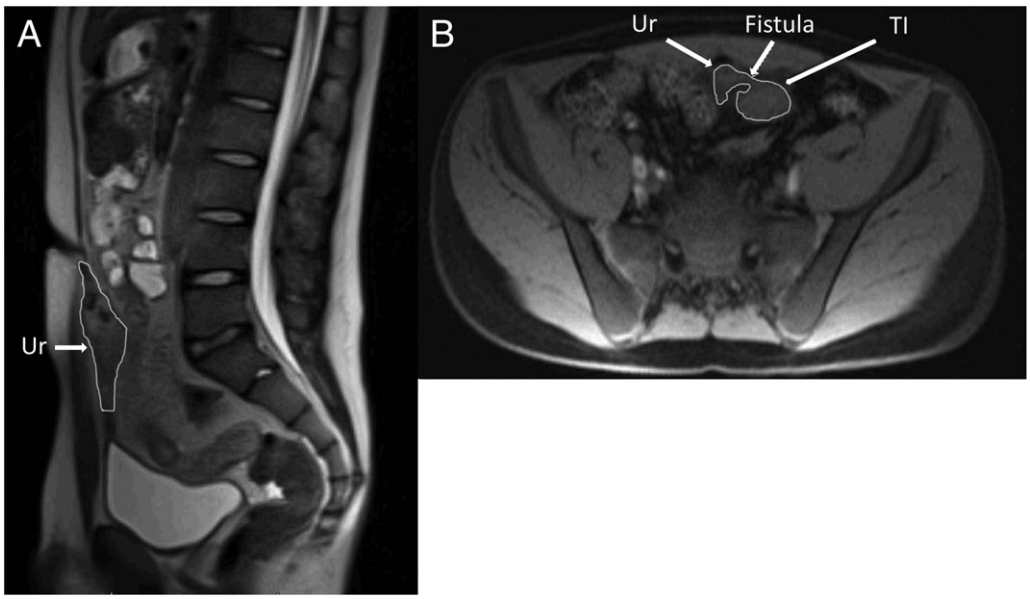

Fig. 2 An abdominal and pelvic MRI demonstrating the urachal remnant and cyst (Ur) (A) and the probable fistula (Fistula) (B) leading from the ileum (TI) to the urachal cyst (Ur).