In cooperation with

What Is Your Diagnosis?

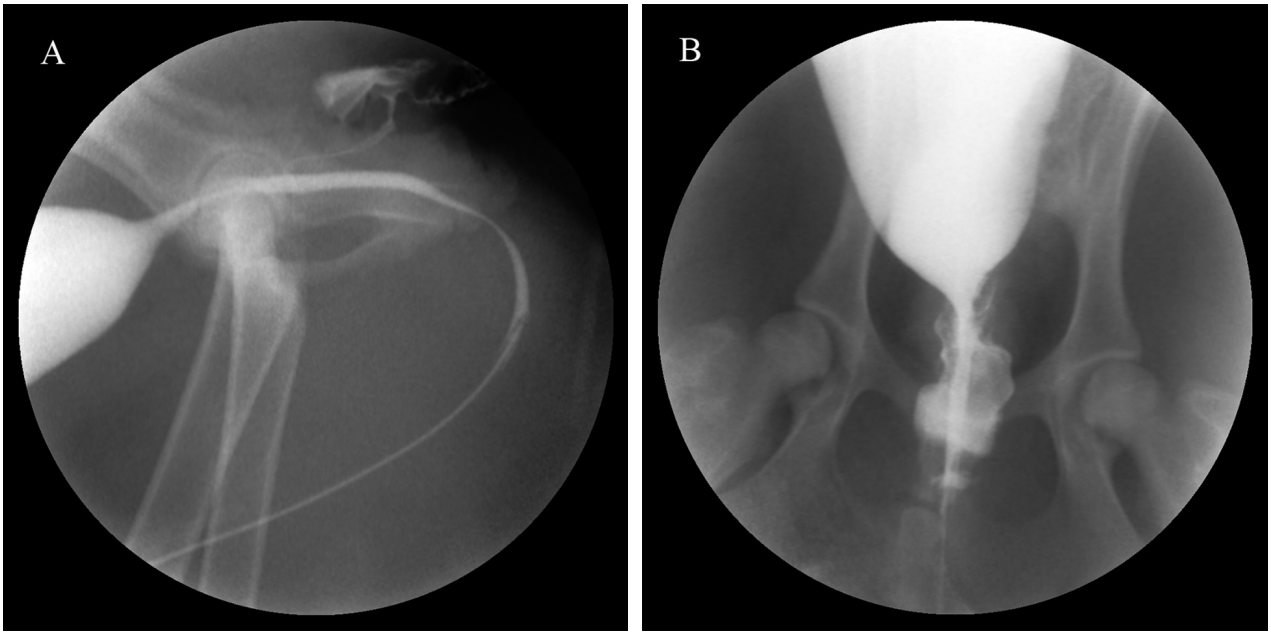

Figure 1—Lateral (A) and ventrodorsal (B) positive contrast urethrographic views of a 10-month-old sexually intact male Golden Retriever evaluated for recurrent urinary tract infections.

History

A 10-month-old 25-kg (55-lb) sexually intact male Golden Retriever had a history of recurrent urinary tract infections, which was first documented at 5 months of age. Clinical signs included intermittent pollakiuria and stranguria. Urinalyses revealed marked pyuria and bacteruria. Bacteriologic culture of urine resulted in bacterial growth on 3 occasions, including a mixed growth of *Proteus mirabilis* and *Escherichia coli* at 1 week prior to hospital admission. No abnormalities had been detected on abdominal radiography or ultrasonography of the urogenital system. Clinical signs and bacteriuria resolved when the dog was treated with antimicrobials, but would recur within days to weeks after completion of antimicrobial administration.

The dog was referred to the Michigan State University Veterinary Medical Center for further evaluation. At the time of hospital admission, no abnormalities were detected on physical examination. Urinalysis of a sample obtained by cystocentesis revealed pyuria (25 to 30 WBCs/hpf); bacteriologic culture of urine resulted in growth of *E coli*. The dog was placed under general anesthesia, and positive contrast cystography and retrograde urethrography (by use of iopamidol diluted to a final concentration of 225 mg of iodine/mL) were performed to evaluate the lower urinary tract **(Figure 1)**.

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page →

This report was submitted by Edyta Bula, DVM; Ashley J. Gold, DVM; Nathan Nelson, DVM, MS; and Daniel K. Langlois, DVM; from the Department of Small Animal Clinical Sciences, College of Veterinary Medicine, Michigan State University, East Lansing, MI 48824. Dr. Bula's present address is Veterinary Medical Center, College of Veterinary Medicine, The Ohio State University, Columbus, OH 43210. Dr. Gold's present address is MedVet Chicago, 3123 N Clybourn Ave, Chicago, IL 60618.

Address correspondence to Dr. Langlois (langlo21@cvm.msu.edu).

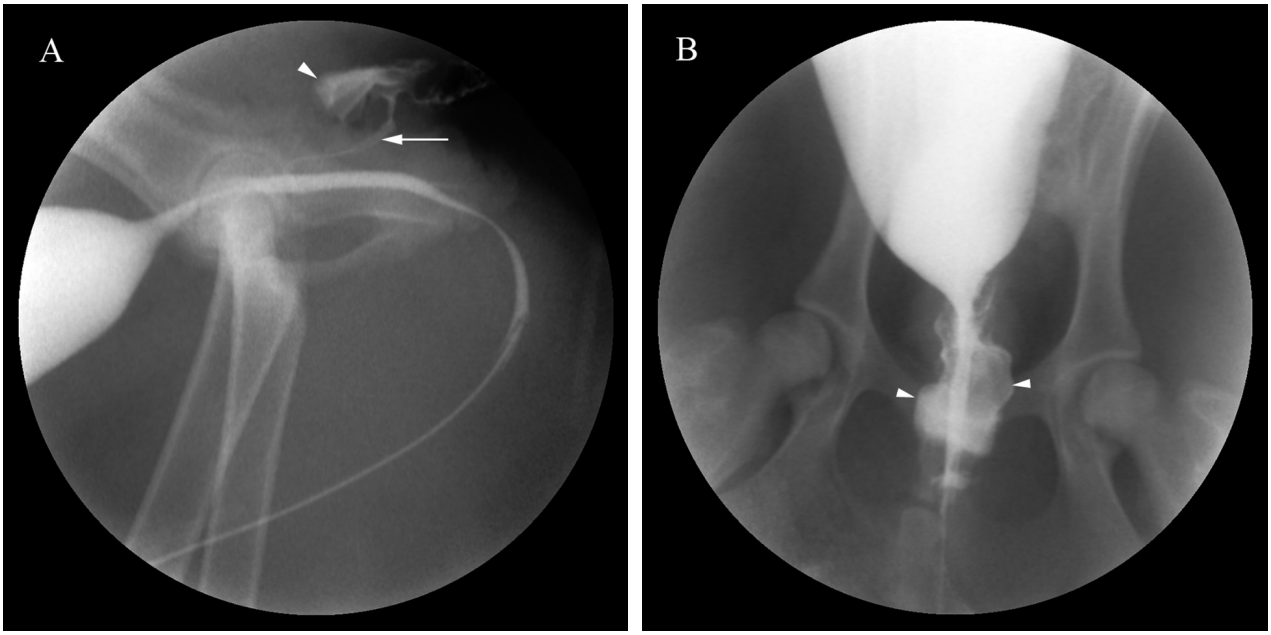

Figure 2—Same urethrographic images as in Figure 1. A—Notice that contrast material forms a thin tubular shape extending from the pelvic urethra in a caudodorsal direction to the ventral wall of the rectum (arrow). A small amount of contrast material is present in the rectum (arrowhead). B—Contrast material in the rectum is superimposed over the pelvic urethra (arrowheads).

Diagnostic Imaging Findings and Interpretation

In the lateral projection, contrast material fills and distends the urethra, revealing a smooth wall with no evidence of stricture, calculi, or obstruction throughout. A thin contrast-filled communication between the urethra and the rectum is apparent **(Figure 2)**. This communication extends from the distal portion of the pelvic urethra (caudal to the prostate) in a caudodorsal direction to the caudal aspect of the rectum. A small amount of contrast material is present in the rectum. In the ventrodorsal projection, contrast material is observed in the caudal aspect of the rectum superimposed over the pelvic urethra. No filling defects or anatomic abnormalities were observed in association with the bladder (images not shown). Findings on cystography and urethrography confirmed a diagnosis of urethrorectal fistula, likely congenital in origin. A traumatic urethrorectal fistula was considered unlikely given the age of the dog and lack of reported trauma.

Treatment and Outcome

A surgical fistulectomy was performed. Briefly, the fistula was viewed in the ventral portion of the terminal end (approx 1 cm) of the rectum, and an 8F red rubber catheter was passed to aid in isolation. A 5-cm dorsoventral incision was made immediately ventral to the anus. Blunt dissection of the perineal tissues revealed the catheterized fistula at an approximate depth of 2 cm. The fistula was isolated, doubly ligated on the urethral and rectal sides, and transected. The rectal end of the fistula was removed completely. Approximately 5 mm of the ventral incision was not closed and was allowed to heal by second intention giving the potential for drainage.

Other than transient serosanguinous incisional discharge, the dog recovered from surgery and anesthesia without complications. The dog was discharged from the hospital 2 days later. At 9 months after surgery, the dog remained clinically normal with no evidence of lower urinary tract disease.

Comments

Congenital urethrorectal fistulas are seldom reported for dogs. To date, only 13 cases have been reported in the veterinary literature, with English Bulldogs seemingly overrepresented.[1-5] To our knowledge, this condition has not been documented previously for Golden Retrievers. The exact etiology for urethrorectal fistula formation is unknown, but it is speculated that improper embryonic development is involved. Concurrent congenital anomalies, including ureteral ectopia, are often reported.[6] Recurrent urinary tract infections are the most consistently reported problem and, in some dogs, the only reported abnormality. Surprisingly, urine leakage from the rectum is inconsistently observed; nonetheless, this finding in a young animal should raise suspicion for urethrorectal fistula.

Positive contrast urethrography is essential for diagnosing urethrorectal fistulas. Survey radiography is insufficient given the silhouetting of soft tissue structures

in the pelvic region, and ultrasonography is limited by impedance from the pelvic bones. Endoscopic evaluation of both the colon and urethra has not been used in most cases, but fistula openings were unable to be confirmed in 1 report.[3] Retrograde urethrography with CT may aid in surgical planning in atypical cases, but is not necessary for diagnosis.[3] As such, positive contrast urethrography remains the preferred diagnostic test. Unlike the aforementioned imaging modalities, positive contrast urethrography can be performed at most veterinary practices, as it does not require advanced equipment or training. When performing positive contrast urethrography, it is important to generate adequate filling pressures to promote contrast passage through the fistula.[1] For this reason, retrograde urethrography is often preferred over micturating (anterograde) urethrography. In the radiographic study of the dog of the present report, contrast material initially was observed in the rectum prior to observation of the fistula. The fistulous tract was not apparent until higher pressures were generated with additional contrast injections. In some instances, manually pressing the cranial pelvic urethra against the bony pelvis via a rectal approach can promote contrast passage through the fistula, but this would need to be performed prior to image acquisition to maintain radiation safety.[1] Although observation of the fistulous tract can assist in surgical planning, the presence of contrast medium in the rectum during urethrography is diagnostic for an aberrant communication even if the fistula is not observed.

Surgical fistulectomy is the definitive treatment for urethrorectal fistulas, and several techniques have been described.[1] A ventral perineal approach similar to that used in the dog of the present report, in which the pudendal nerve and vasculature are avoided, was first reported in 2003.[7] This less invasive approach is currently preferred because of its relative simplicity and lower morbidity, compared with other procedures.[1,5] Regardless of technique, short- and long-term outcomes following surgical fistulectomy are excellent, with most dogs achieving normal micturition.[1]

Although uncommon, congenital urethrorectal fistulas should be considered in juvenile animals with a history of recurrent urinary tract infections, regardless of whether rectal leakage of urine is observed. Properly performed positive contrast retrograde urethrography is essential for confirming a diagnosis. The prognosis for return to normal micturition without recurrent urinary tract infections is excellent following successful surgical correction.

References

1. Chandler JC, MacPhail CM. Congenital urethrorectal fistulas. *Compend Contin Educ Small Anim Pract* 2001;23:995–1000.
2. Osborne CA, Engen MH, Yano BL, et al. Congenital urethrorectal fistula in two dogs. *J Am Vet Med Assoc* 1975;166:999–1002.
3. Cruse AM, Vaden SL, Mathews KG, et al. Use of computed tomography (CT) scanning and colorectal new methylene blue infusion in evaluation of an English Bulldog with a rectourethral fistula. *J Vet Intern Med* 2009;23:931–934.
4. Silverstone AM, Adams WA. Radiographic diagnosis of a rectourethral fistula in a dog. *J Am Anim Hosp Assoc* 2001;37:573–576.
5. Whitney WO, Schrader LA. Urethrorectal fistulectomy in a dog, using a perineal approach. *J Am Vet Med Assoc* 1988;193:568–569.
6. Goulden B, Bergman MM, Wyburn RS. Canine urethra-rectal fistulae. *J Small Anim Pract* 1973;14:143–150.
7. Ralphs SC, Krameck BA. Novel perineal approach for repair of a urethrorectal fistula in a Bulldog. *Can Vet J* 2003;44:822–823.