

Congenital Diseases of the Lower Urinary Tract



Joseph W. Bartges, DVM, PhD*, Amanda J. Callens, BS, LVT

KEYWORDS

• Congenital • Urinary bladder • Urethra • Lower urinary tract

KEY POINTS

- Congenital lower urinary tract disorders occur uncommonly in dogs and cats.
- Many congenital disorders are associated with congenital urinary incontinence.
- Treatment depends on the underlying congenital anomaly and if the anomaly is associated with clinical signs.

Genetic or acquired diseases may affect differentiation and development of the lower urinary tract. More than 400 regulatory genes seem to be involved in embryogenesis of the urinary system, which depends on a coordinated and orderly interaction of multiple embryonic tissues.^{1–3} An alteration in one or more of these genes or disruption of normal development may result in an anomaly.

URINARY BLADDER

Urinary Bladder Agenesis and Hypoplasia

Agenesis or hypoplasia of the urinary bladder results in diminished capacity for urine storage and presents as urinary incontinence.^{4–7} Embryonic maldevelopment may result in a hypoplastic bladder but is more commonly associated with ectopic ureters.⁷ Ectopic ureters may result in diminished bladder capacity, which may contribute to urinary incontinence even with surgical correction; however, bladder capacity may increase over time.^{8,9}

Pelvic Bladder

A pelvic bladder is one that has a blunt trigone, which is located in an intrapelvic location associated with a shortened urethra (**Fig. 1**).¹⁰ The role of pelvic bladder with urinary incontinence is controversial, and dogs with pelvic bladder may be continent.^{10–12} Normally, the trigone tapers and connects to the urethra in an

The authors have nothing to disclose.

Cornell University Veterinary Specialists, 880 Canal Street, Stamford, CT 06902, USA

* Corresponding author.

E-mail address: joe.bartges@cuvs.org

Vet Clin Small Anim 45 (2015) 703–719

<http://dx.doi.org/10.1016/j.cvsm.2015.02.004>

vetsmall.theclinics.com

0195-5616/15\$ – see front matter © 2015 Elsevier Inc. All rights reserved.

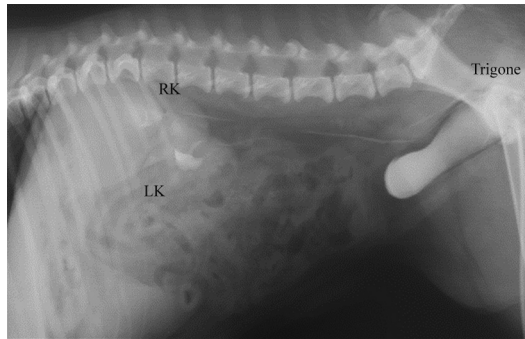


Fig. 1. Lateral abdominal radiograph of an excretory urogram in a dog with a pelvic bladder and pyelonephritis. Pyelectasia is present bilaterally. The dog had urinary incontinence and recurrent bacterial urinary tract infections. LK, left kidney; RK, right kidney; Trigone, trigone of bladder located in pelvic canal.

intra-abdominal location. The degree of distention of the bladder affects location of the trigone; therefore, the bladder should be adequately distended during contrast urethrocytography before diagnosing pelvic bladder.¹² Pelvic bladder has also been associated with urinary tract infection.¹⁰ Although some dogs with pelvic bladders are continent, other dogs with pelvic bladders have refractory urinary incontinence without any other identifiable cause.^{10,13} A diagnosis of pelvic bladder is established by contrast radiography. If pelvic bladder is associated with urinary incontinence, pharmacologic management with estrogens and/or α -adrenergic agonists should be tried before more invasive interventions. If urinary incontinence is refractory to medical therapy, urethral bulking with collagen or surgery (urethropexy or colposuspension) may be attempted.^{14–16}

Exstrophy and Herniation

Exstrophy refers to eversion of the urinary bladder, and often the intestines and external genitalia, due to absence of a portion of the ventral abdominal wall.¹⁷ This disorder is rare, being reported in an 8-month-old female English bulldog with urinary incontinence and pyelonephritis.¹⁸ Treatment involves managing associated conditions and reconstructive surgery.¹⁹

Urinary Bladder Herniation

Exteriorization of the urinary bladder through an inguinal hernia has been described in a 2-year-old cat.²⁰ Clinical signs included chronic lower urinary tract signs, and a soft mass was palpated in the region. Radiography revealed the urinary bladder to be extra-abdominal. Treatment consisted of repositioning of the urinary bladder in the abdominal cavity with an incisional cystopexy and partial closure of the enlarged inguinal canals.

Urachal Anomalies

Urachal anomalies occur commonly in dogs and cats. The urachus is a fetal connection allowing urine to pass between the developing urinary bladder and the placenta. It undergoes complete atrophy and is nonfunctional at birth. If it fails to completely atrophy, macroscopic or microscopic remnants may remain and result in persistent urachal patency or formation of urachal cysts or diverticula.^{21,22}

A persistent urachus occurs when the urachal canal remains functionally patent between the urinary bladder and the umbilicus (**Fig. 2**). It is characterized by

Download English Version:

<https://daneshyari.com/en/article/2460045>

Download Persian Version:

<https://daneshyari.com/article/2460045>

[Daneshyari.com](https://daneshyari.com)