

# Cystoscopy in Dogs and Cats



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## KEYWORDS

- Cystoscopy • Urethroscopy • Urinary incontinence • Ectopic ureter • Hematuria
- Pollakiuria • Urinary obstruction • Urinary cancer

## KEY POINTS

- For experienced, well trained clinicians, cystoscopy is a minimally invasive tool that has advanced urology in veterinary medicine.
- Cystoscopy provides the ability to diagnose conditions that cannot easily be diagnosed using other modalities.
- Cystoscopy enables thorough and minimally invasive assessment and treatment of conditions diagnosed using other modalities.
- As technology advances, a wider range of patients will be able to be assessed via cystoscopy, and more cystoscopic guided treatment options will become available.
- Advanced training and a wide range of specialized equipment are necessary to perform cystoscopy appropriately.

## INTRODUCTION: NATURE OF THE PROBLEM

Cystourethroscopy is a technique used to gain access to the lower genitourinary tract (urethra, urinary bladder, ureteral orifices, vagina). In most cases, cystourethroscopy is used as a diagnostic tool to visually assess the lower urinary tract if routine diagnostic evaluation (blood work, urinalysis, urine culture, radiography, ultrasonography) does not yield a definitive diagnosis for the cause of a patient's lower urinary tract disease. In addition, some treatment modalities can be administered with cystoscopic guidance. Cystourethroscopy is considered a minimally invasive procedure but does require general anesthesia in order to minimize patient movement and secondary iatrogenic injury to the lower urinary tract.

## INDICATIONS FOR CYSTOURETHROSCOPY

### *Persistent/Recurrent Lower Urinary Tract Signs*

Common lower urinary tract signs in dogs and cats include dysuria, pollakiuria, stranguria, hematuria, and inappropriate urination (**Boxes 1 and 2**). The most common

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differentials for these signs in dogs are urinary tract infection (**Fig. 1**), urolithiasis (**Fig. 2**), and lower urinary tract neoplasia (**Fig. 3**), whereas in cats feline idiopathic cystitis (also known as feline lower urinary tract disease, **Fig. 4**) is also a common differential for lower urinary tract signs.<sup>1</sup> Cystoscopy is indicated when routine diagnostic evaluation (blood work, urinalysis, urine culture, radiography, ultrasonography) does not yield an obvious cause for a patient's lower urinary tract signs. It is also indicated when there has been an apparent therapeutic failure for a diagnosed cause of lower urinary tract signs. An example of this is a patient with lower urinary tract signs that do not abate after appropriate antibiotic therapy is instituted for a urinary tract

### Box 1

#### Indications for cystoscopy

Assessment of persistent or recurrent lower urinary tract signs of unknown origin

- Urethral or bladder masses

- Urethral strictures

- Occult uroliths

Assessment of persistent or recurrent urinary tract infections

- Investigate for anatomic abnormalities that may predispose the patient to development of infections

- Identify urethral or bladder masses

- Identify uroliths

- Identify vestibulovaginal stenosis

- Identify and resect (via laser) vestibulovaginal septal remnants

Assessment of chronic hematuria

- Identify bladder or urethral masses

- Identify occult uroliths

- Identify primary renal hematuria (hematuria seen exiting ureteral orifices)

Assessment of bladder or urethral masses

- Assess extent of mass

- Cystoscopic guided biopsy

- Cystoscopic guided laser resection of cystic polyps

Treatment of cystic or urethral calculi

- Cystoscopic guided stone basketing

- Laser lithotripsy

- Electrohydraulic lithotripsy

- Laparoscopic assisted cystoscopic urolith removal

- Percutaneous cystolithotomy

Assessment and treatment of urinary incontinence

- Assess for the presence of ectopic ureters

- Cystoscopic guided laser ablation of ectopic ureters

- Cystoscopic guided submucosal injection of urethral bulking agents

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