Veterinarians at UC Davis are using cystoscopy to evaluate the lower urinary and genital tracts in animals. A cystoscope is a thin tube with a camera that is inserted through the urethra into the bladder to conveniently see areas of the bladder or urethra that may not be visible on x-rays or ultrasound. The procedure is performed while animals are under general anesthesia.

Cystoscopy can be used to help identify many issues of an animal’s urinary health. Ectopic ureters in dogs (where the ureters—the tubes that connect the kidneys to the bladder—open in an abnormal location), a common reason many young dogs present with urinary incontinence, can be diagnosed via cystoscopy. It can also be used to less invasively obtain biopsies of the lower urinary tract if mass lesions such as polyps or tumors are suspected. Oftentimes, clinicians use this technique to evaluate dogs and cats that present with recurrent urinary tract infections (UTI); if no underlying cause is found, biopsy forceps can be inserted through the scope and small samples of the bladder wall can be obtained and submitted for histopathology and culture analysis. Finally, the cystoscope can be used as a treatment option for stone removal.

One recent patient to benefit from the use of cystoscopy was Callie, an 8-year-old female poodle/spaniel mix, who presented to the UC Davis emergency room on Christmas Eve after her pet sitter noticed bloody discharge from her vulva. Following abdominal x-rays and an ultrasound, a large bladder with bright sediment (likely crystals or mineralized material) was revealed. No stones were visualized at that time. Veterinarians with the Emergency/Critical Care Service then placed a urinary catheter in order to help Callie empty her bladder, in addition to collecting a urine sample for analysis and culture.

The case was then transferred to the Internal Medicine Service, which performed a complete abdominal ultrasound and repeated abdominal x-rays the following day with the Diagnostic Imaging Service. The ultrasound found multiple stones in her bladder, which was confirmed with the x-rays. The stones had previously been hidden by the bones of her pelvis when they were causing an obstruction to the outflow of urine. Callie was also found to have a UTI.

To evaluate Callie’s urinary tract for abnormalities predisposing her to UTIs and bladder stones, and to remove the stones, Callie underwent cystoscopy. Using this method, veterinarians identified the bladder stones and used a basket to remove these minimally invasively, allowing Callie to avoid having surgery. With the help of antibiotics to treat her UTI, Callie recovered well at home.

Some UTIs, such as the one that Callie has, can predispose to the development of bladder stones. Once the type of stones that Callie had were determined, the veterinarians were able to advise on preventative strategies to minimize the risk of recurrence of stones.

Cystoscopy is minimally invasive, which is one of its advantages over surgery, however, it cannot be used in all cases—some of the factors that determine whether cystoscopy can be used include size of the animal, size of the stones, and the number of stones. In some cases, stones are small enough to pass naturally. Other ways to remove stones would be dissolution of the stones with diet and antibiotics to treat the underlying infection (this could not be done in Callie’s case because her stones had already caused a blockage and would be at risk of doing this again during the stone dissolution process), surgery, and lithotripsy (using a laser to break down the stone).