

Ureteral Stent

Written for VSC by Andrew Scott Levien, BVSc (hons), PgCertVS, MANZCVSc, DACVS-SA

What is a ureteral stent?

The ureter is a hollow tube that is designed to transport urine from the kidney to the bladder. An obstruction of the ureter can occur for various reasons. These may include but are not limited to ureteral stones, trauma, strictures (scarring or narrowing), cancer, and sometimes infection (e.g. pyelonephritis).

A ureteral stent is a device designed to maintain the flow of urine from the kidney to the bladder when the ureter becomes obstructed.

It is placed within (inside) the ureter to act as a conduit for urine flow. It is typically a double-pigtail design, meaning that the ends are curled to prevent movement from the kidney or bladder (see image to the right). Typically, urine flows through the middle of the stent and around the stent as the ureter passively dilates. An alternative option to a stent is a device known as a subcutaneous ureteral bypass, or SUB.



Subcutaneous ureteral bypass vs. stent?

Your veterinarian will help you decide what is best for your pet.

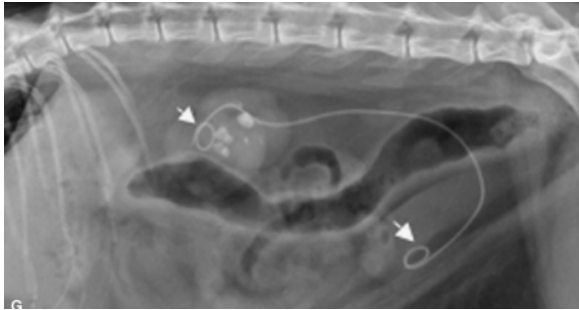
Is stent placement urgent?

The most common indication for stent placement is ureteral stones. When stones obstruct the ureter (the tube between kidney and bladder) irreversible kidney damage can rapidly occur. In one study, after one week of obstruction, kidney function was reduced permanently by 35 percent. After two weeks of obstruction, kidney function was permanently reduced by 54 percent. Therefore, if indicated, placement of a stent or subcutaneous ureteral bypass, or SUB, is relatively urgent.

In 98 percent of cats and over 50 percent of dogs, the ureteral stones are composed of calcium oxalate, which will not dissolve medically.

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The X-Ray to the left shows a double pigtail stent between the kidney and bladder. White stones can be seen in the kidney.

What is the advantage of a stent over traditional surgery?

Stenting offers less potential risk of complications compared to traditional ureteral surgery. It also can be performed faster than traditional surgical techniques and, in female dogs, can sometimes be performed endoscopically. This is better for the patient—especially the patient’s kidneys.

How is it placed?

A ureteral stent can be placed surgically or endoscopically. Fluoroscopic imaging is used to guide placement. Endoscopic placement is typically much more difficult to perform in males and small patients due to the size of the urethra.

Is it permanent?

Unlike in humans, a ureteral stent is often left permanently in pets. However, in some cases the stent needs to be exchanged or removed.

What are the complications of stents?

Like any procedure, ureteral stents are not without potential complications. Some of these include procedural complications (eg. ureteral tears) and peri-operative and short- and long-term complications (such as painful or frequent urination, stent migration and re-obstruction of the ureter). Another alternative for your pet may be subcutaneous ureteral bypass, or SUB.