ECTOPIC URETERS

Urine is produced by the kidneys, and transported to the urinary bladder by two tubes called ureters. Another tube, called the urethra, then carries the urine outside the body from the bladder. There is also a urethral sphincter at the neck of the bladder, which connects the urethra to the rest of the bladder. This sphincter is a band of smooth muscle, which contracts to allow an animal to hold urine in the bladder, instead of constantly leaking urine out of the body. However, in an animal with ectopic ureters, the ureters do not empty into the normal place in the bladder. Instead, they empty into the urethra or vagina, so they bypass the sphincter completely. As a result, these animals do not have control over when they urinate and leak urine. Animals with ectopic ureters commonly have other abnormalities of their urogenital tract, such as an underdeveloped urethral sphincter, and persistent hymen (a paramesonephric duct remnant which appears as a band of tissue that divides the opening of the vagina into two).

Traditionally, there are thought to be two types of ectopic ureters- intramural and extramural. Intramural means that the ureters travel through the bladder wall before emptying into the urethra. Extramural means that the ureters travel completely outside the bladder wall, before emptying into the urethra. Intramural ectopic ureters are much more common in dogs, and can be corrected with a cystoscope guided laser ablation procedure. With this procedure, a laser destroys the excessive tissue covering the ureter, so that the ureter empties into the bladder like it should. Extramural ectopic ureters can only be corrected with abdominal surgery. In this procedure, the ureter must be detached from the urethra, and then attached to the bladder wall, so that it empties in the correct place. Regardless of the type of ectopic ureter, or the procedure performed, the success rate is about 50%. Success is defined as either a partial or complete resolution of urinary incontinence. Half of the patients that do not improve with surgery alone, respond to medical management which includes drugs such as phenylpropanolamine (Proin) or estriol (Incurin). Therefore, that means that about 75% of cases will have partial or complete resolution of incontinence with surgery +/- medication, and 25% of cases will not improve despite surgical and medical management.