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Stent Opens up Research Progress

Canine prostate cancer is an aggressive disease that commonly invades the bladder and urethra and can lead to urinary difficulties. Although researchers continue to make strides toward more effective treatments for this disease, the urinary complications caused by the cancer can create significant research challenges.

Sandra Axiak, DVM, ACVIM, an assistant professor of veterinary oncology at the University of Missouri College of Veterinary Medicine encountered such obstacles while enrolling subjects for a canine prostate cancer study using radioactive gold nanoparticles as a treatment. Many dogs that were otherwise good candidates for the study and that could potentially have benefited from the treatment were ineligible due to urethral obstruction. It was essential that participants be able urinate on their own, without catheterization.

However, Axiak's colleague Deborah Fine, DVM, MS, associate professor of veterinary cardiology, stepped in to assist by providing a procedure that created the opportunity for the dogs to be eligible to be enrolled in the study. The procedure involves inserting a urethral stent into the dogs. Fine's approach is a minimally invasive alternative to major surgery. It not only serves to ease urinary discomfort and improve the animal's quality of life, but by opening up the urethra dogs that previously were ineligible were given a second chance to participate in the study.

The intra-luminal stent that Fine uses in the procedure essentially functions as a tiny spring. She begins by injecting dye into the bladder and urethra to identify the location of the tumor and to map out the appropriate path for the stent placement. The stent is then inserted to cover a length of urethra that extends beyond either side of the tumor.

Fine has performed about a half dozen urethral stent placements for dogs in Axiak's research, and is believed to be the only veterinarian in Missouri offering this specific procedure.

Axiak's study, Phase I Trial of Gum Arabic coated radioactive gold nanoparticles (GA-198AuNPs) in the treatment of canine prostatic carcinoma, aims to determine the safety and effectiveness of injecting radioactivity directly into the tumor, with the hope of decreasing side effects associated with radiation therapy while increasing overall tumor control. Enrollment is opened to qualified participants.

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