



## Setting sights on equine cancer

### novel therapy offers new light

During a parade ride, Dixie, a 17-year-old white American Saddle horse, looked stunning with her red, white and blue trappings. But owner Rose Pasch of Cuba, Missouri, and her veterinarian, who was also attending the parade, noticed that Dixie's eye was irritated. They also found the cause: a troublesome growth.

Although it was removed the next day, the growth kept returning.

"It kept getting bigger, and she'd keep her eye closed all the time, and it would water. It was hurting her," Pasch says. She was afraid she'd have to put Dixie down.

On the recommendation of her blacksmith, Pasch took Dixie to Dr. Elizabeth A. Giuliano at the University of Missouri–Columbia. Dr. Giuliano was conducting a Morris Animal Foundation-funded clinical trial to treat periocular squamous cell carcinoma (PSCC). Dixie was a perfect candidate for participating in the trial.

PSCC is a malignancy that commonly affects horses on the cornea, third eyelid or eyelid. Predisposing factors include breed (Belgians and Appaloosas), poor pigmentation (light-colored skin) and exposure to ultraviolet light from high altitudes or frequent sun exposure.

"Because the skin on the face of the horse tightly adheres to the underlying bone, we can't do certain reconstructive procedures," Dr. Giuliano says. "Without retaining the eyelid, it is virtually impossible to save the eye." Losing an eye is disastrous for horses, who rely heavily on sight, especially in work and performance situations.

The standard treatment for PSCC is surgery followed by chemotherapy or freezing or burning off the tumor, but the results are mixed. Dr. Giuliano's study focused on an innovative treatment called photodynamic therapy.

"To my knowledge, this treatment has never been used in horses in any capacity," Dr. Giuliano says. After surgery, Dr. Giuliano injected a photo-reactive chemical into the cells where the tumor had been. She then treated the area immediately with a laser light. This procedure is different from other photodynamic therapies because the agent is used locally instead of throughout the body and doesn't require a waiting period before treatment. Nor does the horse have to stay indoors.

"Dixie was the very first horse I treated with this therapy," Dr. Giuliano says. "I did have to treat her twice, but she's been cancer-free for five years."

So far, Dr. Giuliano has treated 16 horses with this new therapy, and all of them have shown encouraging results. As for Dixie, at 22 years old she is still going strong as a parade horse. Thanks to Dr. Giuliano's research, we hope that Dixie will be marching on for many years to come.