

# Electrochemotherapy

## THERAPY FOR SKIN LESIONS IN HORSES

Electrochemotherapy is a new clinical therapeutic modality used in veterinary medicine for treating horses for skin tumors, including sarcomas, mast cell tumors, and carcinomas. This new treatment tool has been used in people for a wide variety of skin and subcutaneous tumors. We now have the ability to provide this treatment for horses at the University of Tennessee's College of Veterinary Medicine.

With electrochemotherapy, a chemotherapeutic drug, such as cisplatin or bleomycin, is injected into the skin tumor, and electrical pulses are delivered, in microseconds, into the tumor. The electrical pulses cause the pores of the cancer cells to open, increasing the cells' susceptibility to the drug. The electrical pulses cause a substantial increase, up to one hundred times, in the uptake of the cancer drug by the cancerous cells. The electrical pulses also cause the tumor's blood vessels to seal the drug within the tumor, significantly increasing the therapeutic benefit of the drug.

Electrochemotherapy offers an effective alternative to currently used therapies. Electrochemotherapy is especially effective in resolving equine sarcomas, and its success has been shown to be much higher than that obtained with most other treatments, such as surgical excision, cryosurgery, laser surgery, topical administration of antiviral drugs, immunomodulatory therapy, and topical or intra-lesional administration of a chemotherapeutic drug alone. In one study, 97.9% of horses with one or more sarcomas treated using electrochemotherapy continued to have resolution of the tumors 4 years after treatment.



Treatment is performed with the horse anesthetized using a short-acting injectable anesthetic agent. A typical electrochemotherapy session lasts about 20 minutes. For small tumors (i.e., those < 2 cm in diameter), electrochemotherapy is generally effective after only one or two treatments. Treatments are repeated at 2-week intervals. Tumors greater than 5 cm in diameter should be surgically debulked first, if possible, before electrochemotherapy treatment is administered. The most common adverse effect is slight swelling at the treatment site.

We are excited to offer this treatment against many types of skin cancer. **Appointments for this new therapy may be made by calling the appointment desk at the Equine Hospital at 865-974-5701.**