

Melanoma

By Kathleen Giguere, DVM

Abstract Melanomas are common neoplasms of the older horse, arising from dark pigmented cells called melanocytes or melanoblasts. These tumors develop in many gray horses as they age and are usually less dangerous in horses than in humans. They typically appear as firm, slow growing, dark lumps in the skin and are most often located under the tail. In some cases, one might suddenly begin to grow quickly and can interfere with defecation or cause other problems. Diagnosis is typically based on clinical signs and biopsy is only warranted if the lesion is abnormal in appearance. Surgery is only needed if the mass interferes with functions such as defecation.

Pathophysiology Melanomas may arise from dermal melanocytes or melanoblasts and may be benign or malignant. These tumors are most commonly seen in older horses with the most common breeds being Arabians and Percherons. Melanomas appear most exclusively in horses that have gray coats, and it has been estimated that 80% of gray horses over 15 years old have melanomas. Lesions may be solitary or multiple and occur most commonly on the perinium or ventral surface of the tail. Other locations include the periocular region, distal limb, below the ear in the area of the throat latch, or inside the mouth. Tumors are usually firm, black, nodular but may be hairless or ulcerated. Three growth patterns have been described: slow growth without metastasis, slow growth with sudden metastasis and rapid growth with malignancy from the start.

Diagnosis Clinical appearance is often highly suggestive, but cytology from fine needle aspirates are also indicative. Biopsy for histopathology is required for absolute confirmation of diagnosis but is not always required.

Treatment Currently, a vaccine exists for canine melanoma that has shown good efficacy in horses. The horse's immune system doesn't normally attack tyrosinase (a protein found in the tumor) because the protein isn't recognized as foreign. The vaccine delivers the genetic code for human tyrosinase, which is inserted in a small ring of DNA. When the horse's immune system spots the human protein, it mounts a response for immune cells to attack this protein, which is concentrated in melanoma cells. The

vaccine is given intradermally (through the skin) in an area that is clipped and aseptically prepped. This is most commonly done in the skin over the pectoral muscles. However, this vaccine is not without cost. An owner might expect to pay \$2,200-\$3,000 for the initial series of four injections and then a quarter of that cost for each booster. Other treatment options include surgical debulking along with cryotherapy (freezing the tumor cells), intralesional cisplatin (a chemotherapeutic agent) or orally administered cimetidine (a histamine blocker) to slow down the rate of growth in rapidly growing melanomas.

Prognosis In horses, there is not yet enough data to know how long the effects of the vaccine will last. While the researchers have yet to see full resolution of cancer in horses, all tumors were reduced in size or stopped growing. However, owners of horses with large melanomas might not see an appreciable decrease in the size of the tumor. Slow-growing melanomas seem to respond best to the vaccine and, so far, the vaccine has demonstrated good short-term efficacy. At this time, the vaccine is not yet approved in horses, and its use is therefore considered extra-label.

Reference

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