

Habronemiasis: A Sore Summer Topic

Habronemiasis goes by many names such as summer sores, jack sores, swamp cancer or bursatee. Habronemiasis is very common in horses in the South Eastern U.S., but can be seen in other areas of the country. Larvae of the stomach worm *Habronema spp.* cause this skin disease. The adult nematodes cause parasitic infestation in the stomach of the horse, which is part of the nematode's lifecycle. Infestation of the adult stomach worms is called gastric habronemosis, and it rarely causes clinical signs aside from a mild gastritis (stomach inflammation). The cutaneous form of the disease is caused by larvae of the stomach worm that get deposited into a wound or moist areas of the body by the fly (the intermediate host), and cause significant skin reactions. The larvae emerge from flies that feed on wounds or secretions from around the eyes or genital region. The most commonly affected areas are the corner of the eye (where tearing occurs), the sheath and urethral process of the male horse, and occasionally the lower extremities. These are also the areas where horses cannot ward off these vector flies by the swishing of their tail. The migration of the larvae in the tissue causes a hypersensitivity reaction as the larvae start to die. This reaction is granulomatous in nature. Horses are very good at developing what is colloquially known as 'proud flesh', which is an excessive development of a type of very vascular tissue called granulation tissue. It is part of the horse's immune defense but often causes delayed wound healing due to the exuberant, extensive nature and overgrowth of the tissue. Thus, these sores take on the characteristic of ulcerative, nodular and tumorous masses (See Figure 1).



Figure 1: Cutaneous habronemiasis at common locations in the horse. From left to right ocular habronemiasis at the medial canthus of the eye, genitalia habronemiasis on the urethral process and sheath of a male horse. Photos courtesy of Atlanta Equine Clinic.

Diagnosis is based on clinical signs of non-healing ulcerative granulomas, which occur normally in the aforementioned locations. They often appear greasy, and reddish-brown in color. Occasionally you can see small (rice-sized) yellow calcifications, which are the dead larvae residing in the lesion. The only way to truly confirm habronemiasis is to take a biopsy of the affected tissue. Other skin lesions that can have a similar clinical appearance include squamous cell carcinoma, equine sarcoids, overgrowth of granulation tissue (proud flesh) following a wound, rain

scald or ringworm. Thus, definitive diagnosis obtained by a skin biopsy is ideal in guiding treatment and future prevention. Skin scrapings and cytology rarely show larvae, and confirm a diagnosis. Biopsies, however, often show the larvae as well as an eosinophilic infiltrate, which is a type of local white blood cell reaction that occurs with parasite infection.

Treatment by prevention is ideal as these skin lesions can be very difficult to eliminate. Prevention predominantly involves fly control. By decreasing the horse's exposure to flies this disrupts the *Habronema* lifecycle. These prevention measures include the frequent use of fly repellents, and adequate and careful disposal of horse manure. The eggs reside in the manure, and therefore, removal of manure will decrease the incidence of flies ingesting the egg, and then incubating the larvae until infection in the horse occurs. Regular anthelmintic (de-worming) treatment is another method to prevent the lifecycle from perpetuating. There are some topical treatments that have varied effects. Organophosphates have been applied topically in attempt to kill the larvae. Topical corticosteroids and anti-inflammatories are often not curative, but may control inflammation in the area. At times surgical removal or cauterization of the exuberant granulation tissue is necessary. The treatment of choice is Ivermectin, which is an anthelmintic. After one dose any infection of the species in the stomach will be resolved, and subsequent doses will help to promote healing in the cutaneous tissue. Rarely, if the migrating larvae are not already dead at time of treatment, and Ivermectin is administered then there may be temporary exacerbation of the lesions as the larvae presumably die. Spontaneous healing can be expected at times after such administration.

Cutaneous habronemiasis that affects the genital area such as the prepuce (sheath) or the urethral process, and glans penis can be particularly difficult to treat. They appear as thick or firm and irregularly shaped masses, and are often referred to as 'Kunkurs'. Clinical signs in this area can include bleeding readily on manipulation due to the vascular nature of the infected tissue, itchiness, and spraying or frequent and difficult urination. Spraying is especially common if the urethra is affected. It is common in colder regions for the lesions to disappear in the winter and recur or increase in size in the warmer summer months. Despite the similar pathogenesis, these lesions are difficult to treat and often require surgical removal or amputation. Again, Ivermectin treatment can prove beneficial in these cases.

Lastly, in ocular habronemiasis the lesions can progress to the conjunctiva of the medial canthus, the third eyelid, and the eyelid proper. Clinical signs in this manifestation include blepharospasm (excessive squinting), and severe epiphora (excessive tearing). Horses tend to rub these areas, and this causes more tissue damage, which in turn, creates more sites for potential larvae deposits. Again, corticosteroids may provide temporary relief, but the best method is prevention. A fly mask or roll on fly repellents for around the eye are an ideal way to prevent further spread, and infestation. Chronic sores may require surgical intervention.

Overall, it is important to closely inspect your horse in the summer months for any new wounds and skin abrasions. Quick and effective cleaning and topical treatment of these wounds can prevent *Habronema* larvae from seeding, and causing a much greater problem. In addition, fly control and regular anthelmintic therapies are key to preventing this difficult and debilitating skin condition.

Citations:

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