Title: Chronic wound infection and associated lymphadenitis caused by *Halicephalobus gingivalis* infection

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Clinical History: A 7-year-old Thoroughbred stallion was castrated in the field, apparently without complications, but was represented a month or so later with signs of scirrhous spermatic cord. A mass “like a 3rd testicle” was removed from the surgical site (Figure 1), together with an enlarged inguinal lymph node (sectioned; figure 2). There was also a mass palpable per rectum in the left posterior abdominal quadrant.

Surgical Specimens:

![Figure 1. Left - Surgical specimen obtained at exploration of castration site, some weeks after castration. Right - Bisected enlarged inguinal lymph node retrieved at the repeat operation.](image)

Gross description: The larger specimen, a sectioned spheroidal mass about 7 cm in diameter, appeared to be encapsulated and presented a brawny variegated cut surface with a semiconfluent nodular appearance, with raised pale greenish nodules alternating with sunken darker intervening zones. The lymph node was probably enlarged (no scale) and its cut surface had pale semiconfluent nodules bulging from it.
Interpretation: The masses seem to consist of viable tissue that has been added to the area, so neoplasia must be a possibility. Neoplasia, if present, would have to be malignant to have infiltrated local lymph nodes. Alternatively, tissue masses may be produced by chronic proliferative inflammation. Heavy fibrous encapsulation favors the latter interpretation, as does the history.

Morphologic diagnosis: Chronic granulomatous wound inflammation and chronic granulomatous lymphadenitis are more likely than neoplasia.

Establishing the etiologic diagnosis: Neoplasia was tentatively diagnosed based on the gross findings and rapid histological processing was requested. Fortunately, most of the specimen was retained in the chiller and, after granulomatous inflammation associated with larval nematodes was found in the section, the chilled material was submitted to a parasitologist (Dr. Alan Waddell), who retrieved larvae of *Halicephalobus gingivalis* (formerly *H. deletrix*; *Micronema deletrix*) from it by mixing scrapings from the cut surface with a little saline and viewing the mixture as a wet microscopic preparation. The moral of the story is that wet smears (with or without supra-vital staining) should always be made of fresh specimens such as these during the necropsy.

Figure 2. *Halicephalobus* larvae in longitudinal section, showing typical rhabditiform esophagus (arrow).
**Microscopic findings:** The bulk of the mass and the lymph node nodes consists of a combination of infiltration by mononuclear inflammatory cells, including macrophages, alternating with extensive areas of caseous necrosis. The nematodes are characterized in sections by their peculiarly elongated (rhabditiform) esophagus, a feature of *Halicephalobus* sp. larvae.

**Discussion:** *H. gingivalis* is a normally harmless saprophytic nematode. Infections in horses most often cause encephalitis and nephritis, although there are reports of orchitis. Nothing is known of factors that might predispose animals to infection, although in this case surgical infection must have played a part. Despite a long course of ivermectin therapy in this case, euthanasia was necessitated a year later because of extension of infection to the sacrum.

**Recommended literature:**


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