

# What Is Your Diagnosis?

In cooperation with

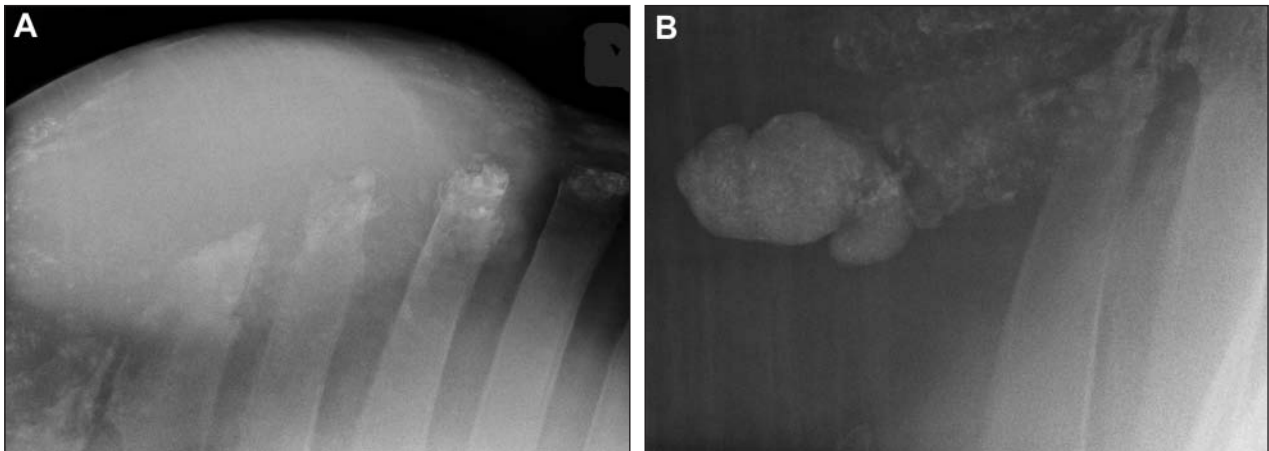


Figure 1—Lateral radiographic views (A and B) of the cervical region of a horse with a fluid-filled mass over the withers.

## History

A 22-year-old sexually intact female American Quarter Horse was evaluated because of a nontraumatic, recurrent fluid-filled mass over the withers of approximately 1.5 years' duration. Physical examination revealed the mass to be near the supraspinous bursa. The mass was visible from both sides of the horse. Palpation of the fluctuant mass did not elicit signs of pain. Blood was obtained for *Brucella abortus* testing, and fluid obtained by centesis was analyzed. The cervical region was examined further by use of radiography (Figure 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page →

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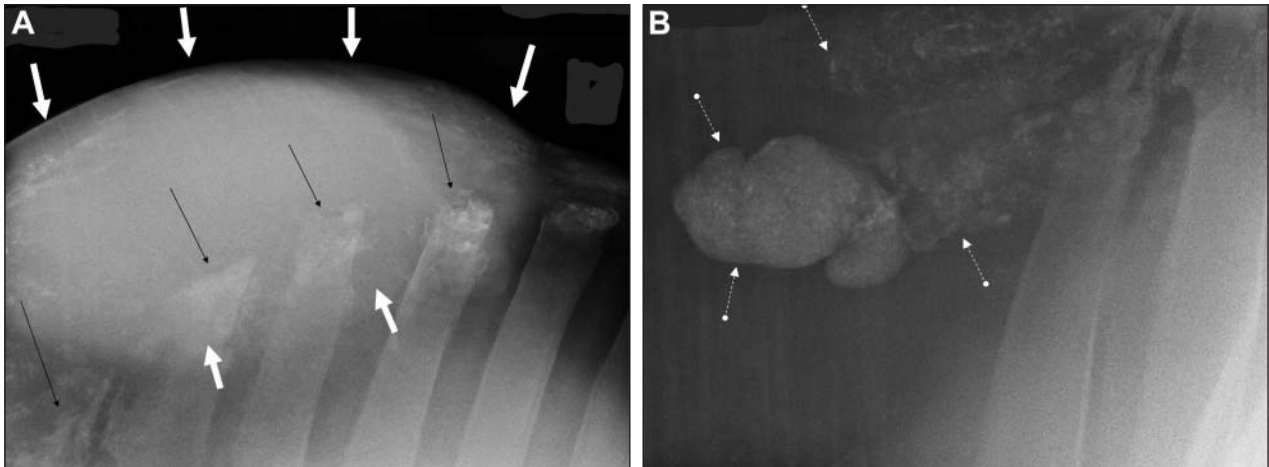


Figure 2—Same radiographic views as in Figure 1. A—An ovoid soft tissue (white arrows) mass can be seen dorsal to the first several thoracic spinous processes with ill-defined mineral opacities (black arrows). B—The cranial-most portion of the mineral opacities appears to have well-defined lobular margins (dashed arrows).

### Radiographic Findings and Interpretation

Radiography revealed a well-defined ovoid soft tissue mass dorsal to the first several thoracic spinous processes with ill-defined mineral opacities superimposed on the ovoid mass that extended approximately 16 cm cranial to the affected processes (Figure 2). The cranial-most portion of the mineral opacities appears more consolidated (9 cm × 5 cm) and has well-defined lobular margins. The spinous processes have a lytic appearance. These radiographic findings are strongly suggestive of *Onchocerca cervicalis* infection.

### Comments

Results of fluid analysis were consistent with a mild chronic suppurative inflammatory reaction with a moderate amount of proteinaceous and granular material. The differential cell count was 50% to 60% neutrophils and 30% to 40% macrophages, and small lymphocytes were rare; a total cell count was not obtained. Results of bacterial culturing of blood were negative for *B abortus*.

Mild bony lysis of the dorsal spinous processes and mineralization within the soft tissue swelling, as seen in radiographic views of the horse of this report, are frequently seen in radiographic images from horses with supraspinous bursitis caused by *O cervicalis*. Important differential diagnoses for supraspinous bursitis include infectious agents (most importantly *B abortus*), trauma to the withers, and *O cervicalis* infection.<sup>1</sup>

*Onchocerca cervicalis* is transmitted by *Culicoides variipennis* (midge) via microfilaria.<sup>2</sup> Microfilaria migrate throughout the body, localizing in the dermis along the ventral midline, face, neck, withers, thorax, and forelimbs. As the microfilaria die, an immunologic reaction occurs resulting in pruritus, scales, crusts, ulcerations, depigmentation, and alopecia.<sup>3</sup> In addition to the dermal localization, the microfilaria can also infiltrate the cornea and iris, leading to blindness.<sup>3</sup> Localization of adult worms in the nuchal ligament

induce an acute swelling or chronic granulomatous change with dystrophic calcification. Granulomatous changes are more common in older horses.<sup>3</sup> In horses with heavy worm burdens, the most common clinical signs include lameness, ligament swelling, and ocular irritation.<sup>3</sup>

Although *O cervicalis* is rarely considered the primary cause for fistulous withers, it can be a predisposing factor for recurrent fistulation. It has been estimated that 37% of horses have adult *O cervicalis* worms in the nuchal ligament. Horses that are > 16 years old with onchocerciasis have an increased prevalence of bursitis secondary to infection.<sup>1</sup> In the horse of this report, the presumptive diagnosis of onchocerciasis was made on the basis of radiographic findings, failure to isolate *B abortus*, lack of a history of trauma, and the recurrence of the bursitis. Other causes of recurrent fistulation include inadequate surgical debridement or drainage and incomplete excision of the long, slender adult worms.<sup>1</sup>

The treatment plan included discussion of an effective microfilaricidal program with ivermectin or moxidectin at the prescribed dosages. Following drainage, a buffered 5% formalin solution was infused into the bursa as an adulticide, and phenylbutazone was prescribed for discomfort. Approximately 1 week after a second round of treatment, the fluctuant mass recurred. Further treatment options, which were declined, included removal of supraspinous bursa or ablation of the dorsal spinous processes and bursa.<sup>1</sup>

1. Hawkins JF, Fessler JF. Treatment of supraspinous bursitis by use of debridement in standing horses: 10 cases (1968–1999). *J Am Vet Med Assoc* 2000;217:74–78.
2. Foil LD, Klei TR, Miller RI, et al. Seasonal changes in density and tissue distribution of *Onchocerca cervicalis* microfilariae in ponies and related changes in *Culicoides variipennis* populations in Louisiana. *J Parasitol* 1987;73:320–326.
3. Klei TR. Helminths of the skin. In: Kahn CM, Line S, eds. *The Merck veterinary manual*. 8th ed. Whitehouse Station, NJ: Merck & Co Inc, 2005;736–737.