

What Is Your Diagnosis?

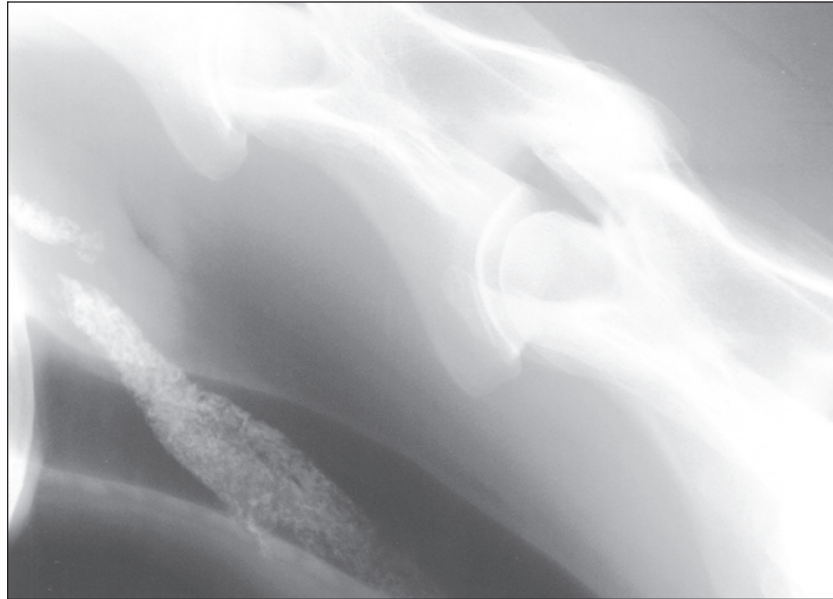


Figure 1—Lateral radiographic view of the cranial portion of the cervical region of a 12-year-old horse evaluated for a draining tract of 1 year's duration associated with swelling ventral to the right jugular groove.

History

A 12-year-old Tennessee Walking Horse mare was evaluated for a draining tract of 1 year's duration associated with swelling ventral to the right jugular groove. There was no history of trauma to the cervical region. The draining tract was located 5 cm caudal to the mandible in the throatlatch area. The horse had been treated with topically and systemically administered antimicrobials with no resolution of the draining tract or swelling. Physical examination revealed purulent material draining from the tract. The firm swelling in the middle of the cervical region below the jugular groove was 15 cm long and 5 cm wide. The swollen area was not hot to the touch, and palpation of the area did not elicit signs of pain. No other abnormalities were detected during physical examination. Endoscopy of the nasal cavity, pharynx, larynx, trachea, and auditory tube diverticulum was performed and revealed compression of the cranial cervical portion of the trachea on the right side of the cervical region. A radiograph of the cranial portion of the cervical region was obtained (Figure 1).

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

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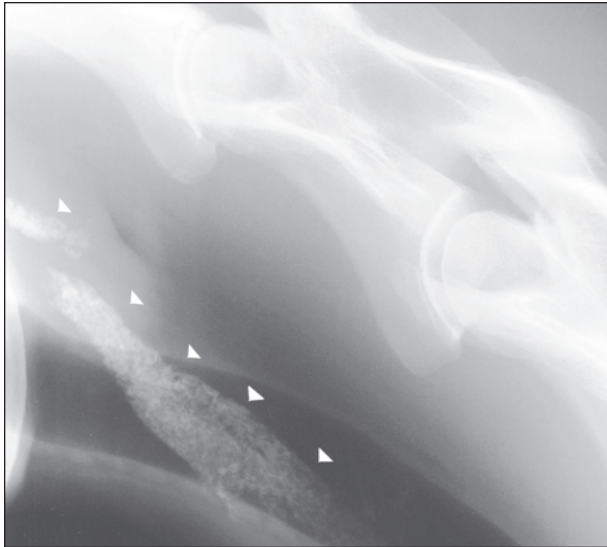


Figure 2—Same radiographic view as in Figure 1. Notice the granular-appearing mineral opacity in the cranial portion of the cervical region, part of which is superimposed on the trachea (arrowheads).

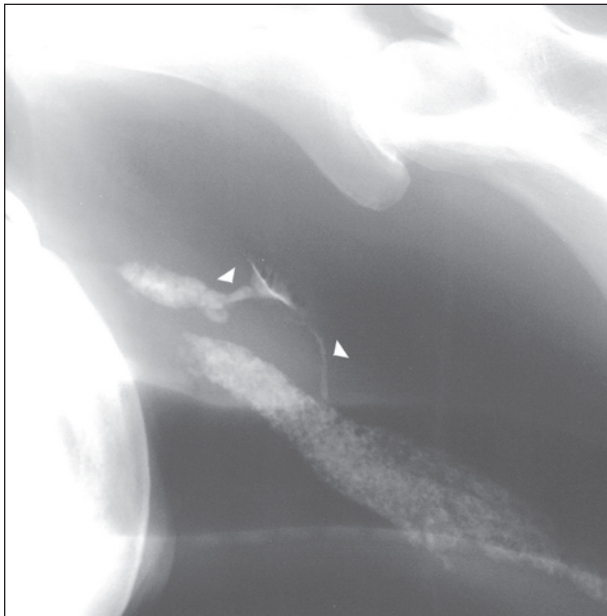


Figure 3—Fistulogram of the cranial portion of the cervical region of the horse in Figure 1. Notice the association of the draining tract with the mineral opacity (arrowheads).

Radiographic Findings and Interpretation

Radiopaque areas dorsal to and superimposed on the trachea are evident (Figure 2). These radiopaque areas have a honeycomb or stippled appearance suggestive of dystrophic mineralization of the soft tissue. Neoplasia is a possible differential diagnosis but not likely, considering the history of a chronic draining tract.

Comments

Fistulography revealed an association between the draining tract and mineralized areas (Figure 3).

Surgery was recommended to the owner to remove the mineralized tissue along the right side of the cervical region and the draining tract. The horse was positioned in left lateral recumbency. A combination of blunt and sharp dissection was used to separate the abnormal tissue from the surrounding healthy tissue. During surgical exploration, it was noticed that the mineralization was located in the sternocephalicus muscle and that the abnormal tissue felt gritty. The swollen tissue was in close proximity to the right carotid artery and adhered to the right jugular vein. During dissection, the right jugular vein had to be ligated to completely remove the mineralized tissue. The draining tract could be traced to the mineralized tissue and was also removed in its entirety. Tissue was submitted for histologic examination. The resultant dead space was packed with bulky bandage gauze,^a and a Penrose drain was placed. No complications were encountered during surgery or recovery of the horse. The bandage gauze and Penrose drain were removed 3 days after surgery. The horse was discharged 5 days after surgery. Results of histologic examination indicated that the mass was muscle tissue and there was connective tissue necrosis with mineralization. Two months after surgery, the horse was clinically normal; the surgery site had healed and a draining tract was not detected.

Dystrophic mineralization is the deposition of calcium salts in injured tissues and is not associated with any disturbances of calcium homeostasis. Dystrophic mineralization develops in cells that have degenerated or become necrotic because of vascular, toxic, metabolic, or inflammatory causes. However, the pathogenesis of dystrophic mineralization is poorly understood.^{1,2} The cause of dystrophic mineralization in this horse was not known. However, the degeneration of tissue led to the deposition of calcium salts. Radiographic characteristics associated with dystrophic mineralization include radiopaque areas with a honeycombed or stippled appearance caused by the calcium particles in the tissue that are irregularly rounded.³ In the horse of this report, 2 radiopaque areas in the right sternocephalicus muscle that had a honeycombed appearance were seen on radiographs. Grossly, the most common method of detecting calcification is to incise through the suspected area in search of a grating sound. The tissue also feels gritty when touched,³ as was detected in this horse. A draining tract was detected in association with the dystrophic mineralization. The necrotic tissue with mineralization may have been a nidus that resulted in formation of the draining tract. Fistulography revealed a communication between the mineralized areas in the right cervical region and the draining tract.

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1. Slauson DO, Cooper BJ. *Mechanisms of disease: a textbook of comparative general pathology*. 3rd ed. Philadelphia: Mosby Inc, 2002;69.

2. Jubb KVF, Kennedy PC, Palmer N. *Pathology of domestic animals*. Volume 1. 4th ed. San Diego: Academic Press Inc, 1993;14–15.

3. Jones TC, Hunt RD, King NW. *Veterinary pathology*. 6th ed. Baltimore: The Williams & Wilkins Co, 1997;57–59.