

What's Your Radiographic Diagnosis?

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Figure 1 Lateral-medial and dorsopalmar radiographs of the 4-year-old, Quarterhorse, gelding presented for evaluation of carpal swelling.

Presentation

A 4-year-old, Quarterhorse, gelding was referred for evaluation of a swelling on the palmar side of the left carpus. The swelling had been present for 6 months. Previous aspiration and drainage of the swelling yielded clear fluid. A recurrence of the swelling initiated the referral to Iowa State University Veterinary Teaching Hospital.

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Physical Examination

Temperature, pulse, and respiration were normal. An approximately 3 cm diameter swelling was present on the palmar region of the left carpus. The swelling was warm but not painful. A mild enlargement of the tendons was noticed for a distance of 10 cm distal to the carpus. Lameness was not present.

A radiographic evaluation of the carpus was obtained (Figure 1).

Radiographic Findings

An approximately 1.5 cm projection of

bone arises from the caudal margin of the distal radius, at the mid-sagittal plane. Its surface is smooth although it has a stellate contour. It has a "stalk-like" attachment that blends into the radial cortex. This new bone has a uniform opacity. On the dorsopalmar view it appears as a small focus of increased bone opacity. A mild (fairly) uniform soft tissue swelling is present around the carpal region. However, the soft tissue swelling does not involve the joint cavities. No abnormalities are identified involving the carpal bones.

Radiographic Diagnosis

Distal radial exostosis is present. The location and appearance are consistent with solitary osteochondroma.

Discussion

Solitary osteochondroma, supracarpal exostosis, and supracarpal volar exostosis are terms used to describe an uncommon bony protuberance that develops on the distal caudal aspect of the radial diaphysis and metaphysis.¹⁻³ It is believed that this develops from an abnormal focus of cartilage in the metaphyseal/diaphyseal region. As the cartilage grows it undergoes endochondral ossification. The exostosis generally ceases to grow at skeletal maturity. Unlike hereditary multiple exostosis, the solitary osteochondroma is not known to have a genetic basis. A horse with a solitary osteochondroma often presents with a swelling at the carpus. On palpation the swelling may be localized to the common tendon sheath of the superficial and deep digital flexor tendons or may be generalized over the caudal carpal region. With deep palpation the exostosis may be felt. Pain may be elicited by deep palpation or strong flexion of

the carpus.

Diagnosis is based on radiographic identification. The exostosis typically has a stalk with well defined trabecular bone detail that blends with the normal medullary bone structure. The surface contour can vary in shape. Any cartilage tissue that may cover the exostosis would not be detectable radiographically. Although the exostosis can be located anywhere along the caudal distal radial surface, it is invariably proximal to the distal radial physeal scar. A radiographic evaluation of the opposite radius has been suggested to determine the presence of hereditary multiple exostosis.

Surgical removal is recommended for large lesions. Prognosis for return to service is considered to be good. Recurrence has not been reported.

In the case reported, surgical excision was done. Histologic evaluation revealed well differentiated bone with a few small foci of cartilage.

Reference

1. Auer J.A.: Equine Surgery, Philadelphia, W.B. Saunders, Co. 1992, p 1038-1039.
2. Stashak, T.: Adams' Lameness in Horses 4th ed. Philadelphia Lea & Febiger, 1987 pp 663-665.
3. Welch, R.D., In Colaham P.T., Mayhew I.G., Merritt A.M., Moore, J.N., eds: Equine Medicine and Surgery 4th ed, American Veterinary Publication, Inc. 1991, p 1449-1450.