

Understanding Equine Osteochondrosis

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Many equine athlete owners worry about bone and joint problems as their four-legged partners age. But these issues are just as important in young developing horses as they are in mature horses. One of the most common and potentially damaging developmental orthopedic disorders is osteochondrosis. Earl M. Gaughan, DVM, Dipl. ACVS, clinical professor of large animal surgery at Virginia Tech's Virginia-Maryland Regional College of Veterinary Medicine, discussed this common developmental orthopedic disease at the 2012 Western Veterinary Conference, held Feb. 19-23 in Las Vegas, Nev.

Gaughan explained, "The overarching umbrella term 'osteochondrosis' appears to apply to the results of abnormal endochondral (within cartilage) ossification," or, simply put, the process by which soft cartilage cells transform into hard bone cells. He described several locations within the equine body that osteochondrosis favors:

- A joint surface or in subchondral bone (under the bone surface within a joint); these lesions are termed osteochondritis dissecans (OCD);
- Deep beneath a joint's surface (called subchondral bone cysts); and
- At the physes (growth plates) of long bones and vertebrae.

Although osteochondrosis is considered a developmental orthopedic disorder, not all lesions develop on the same "schedule," Gaughan said.

"The cause or pathophysiology of osteochondrosis is not fully understood," he stated, adding that there are several factors veterinarians and researchers believe impact the disorder's development including:

- Excessive mechanical forces on still-growing bones and joints;
- Dietary factors, including excessive caloric ingestion and imbalances of calcium/phosphorus or zinc/copper; and
- A potential genetic predisposition (Gaughan noted that while researchers don't believe genetics is a sole cause of osteochondrosis--they think it simply plays a role in disease development--they do discourage breeding affected horses).

Gaughan noted that most osteochondrosis lesions are easily detectable via radiography (X rays); however, ultrasound and magnetic resonance imaging (MRI) might enable detection of lesions located entirely within joint surface cartilage and deep below a joint's surface, respectively, that might be missed on radiographs.

"Treatment of osteochondrosis ... is dependent (on) the location and nature of each lesion," Gaughan said, listing several treatment options:

- Lesions located on joint surfaces can respond well to surgical debridement (in which loose or detached tissue is removed and the defect site is debrided down to healthy tissue);
- Subchondral bone cysts, while treated aggressively in the past, are now treated with minimal debridement and regenerative medicine (such as stem cells); and
- Physal lesions respond well to a combination of rest, non-steroidal anti-inflammatories, a restricted diet, and "occasional surgical interventions to correct asynchronous (uneven) limb growth."

Gaughan noted that for horses treated early and appropriately, the prognosis can be "favorable." Delaying treatment, however, can reduce the chances for the horse to mature sound.

Take-Home Message

While the origins of osteochondrosis remain unclear, in most cases veterinarians are able to treat and manage the disease effectively and affected horses go on to a sound athletic career. Researchers and veterinarians continue to advance their understanding of treatment and prevention methods. "Techniques and applications are rapidly improving so there appears to be valid reason for optimism about future case management," Gaughan concluded.

Disclaimer: Seek the advice of a qualified veterinarian before proceeding with any diagnosis, treatment, or therapy.