Clinical aspects of subchondral bone pain in the fetlock in racehorses and sports horses.

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For the purposes of this abstract the subchondral bone refers not only to the subchondral bone plate, but also the underlying trabecular bone. Although there are some overlaps between the injuries seen in flat racehorses and sports horses, their clinical presentations are often different and are therefore considered separately.

Flat racehorses
Subchondral bone pain is often the result of a stress-adaptation mismatch injury involving the condyles of the third metacarpal/metatarsal bones, frequently involving both forelimbs or both hindlimbs, or all four limbs. Therefore the presenting complaint is usually loss of action or decline in performance, rather than overt lameness. The horse may have a short scratchy trot and prefer to canter than to trot. However, if the hindlimbs are involved the canter may lack hindlimb impulsion, the horse tending to bunny hop behind. However, less commonly the horse may present with an overt unilateral lameness, but following diagnostic analgesia contralateral limb lameness may become apparent. Increased mineralisation of the trabecular bone may predispose to fracture resulting in acute-onset, severe lameness, but frequently poor action preceded this.

There are usually no localising clinical signs and diagnostic analgesia is required. Results can be confusing. Palmar (plantar) nerve blocks performed at the base of the proximal sesamoid bones have the potential to remove pain from the fetlock, presumably because of proximal diffusion of local anaesthetic solution. Occasionally palmar/plantar digital nerve blocks have resolved fetlock region pain. Lameness is usually substantially improved by palmar/ plantar (at the junction of the proximal three-quarters and distal one-quarter of the metacarpus/metatarsus) and palmar/plantar metacarpal/metatarsal nerve blocks (‘low-4-point-block) or by intra-articular analgesia of the fetlock. However, in some horses subcarpal/ subtarsal analgesia of the palmar metacarpal/plantar metatarsal nerve blocks are required to abolish lameness associated with primary fetlock joint pain. In hindlimbs of horses with injury of the lateral condyle of the third metatarsal bone a lateral plantar metatarsal nerve block distal to the ‘button’ of the fourth metatarsal bone may improve lameness.

Radiography is often unrewarding, unless disease is advanced. Definitive diagnosis is achieved using nuclear scintigraphy or magnetic resonance imaging. Because there is a continuum from physiological scintigraphy to pathological injury, the presence of increased radiopharmaceutical uptake or abnormal mineralisation in the trabecular bone is not synonymous with pain causing lameness. These findings must be interpreted together with the results of diagnostic analgesia.

Sports horses
Although similar lesions of the condyles of the third metacarpal/metatarsal bone do occur in sports horses and racehorses, in sports horses the distribution of lesions is more varied, and
injuries are more commonly unilateral resulting in overt lameness. Forelimb injuries are more common than hindlimb injuries. Lesions may be restricted to the subchondral bone plate, especially in the proximal phalanx or may extend into the underlying trabecular bone. There is usually no effusion in the joint, but passive flexion may be resented and flexion may accentuate lameness. Lameness is often acute in onset and ranges from mild to severe. The responses to diagnostic analgesia are similar to those described for racehorses. However, it is important to recognise that intra-articular analgesia is not specific and can resolve pain associated with suspensory branch or proximal oblique sesamoidean ligament injuries, which can be present with no localising clinical signs.

Lesions of the subchondral bone plate of the proximal phalanx may be identified radiographically, and less commonly lesions of the distal aspect of the third metacarpal bone. More commonly nuclear scintigraphy or MRI are required for definitive diagnosis.

Further reading


