Case details

History

A three-year-old, 450kg, Thoroughbred filly was presented because of severe lameness of the right hind limb of three weeks' duration. The horse had been stabled prior to the onset of clinical signs and, although the lameness was acute in onset, a traumatic incident had not been observed. The horse was reported to be inappetant and to have lost a considerable amount of weight between the onset of lameness and time of referral. The horse had been treated prior to referral with orally administered phenylbutazone and intramuscularly administered procaine benzylpenicillin.

Clinical examination

The horse was in poor bodily condition, and it was grade three of five (0 being sound and five being non-weightbearing) lame on the right hind limb at the walk. The right tuber coxae was displaced ventrally, and subcutaneous crepitation was palpable over the area. During radiographic and ultrasonographic examination of the right tuber coxae, multiple, large, osseous fragments were detected. Several, large, necrotic fragments of the tuber coxae and a portion of the parent bone were resected, with the horse sedated and standing, following the administration of epidural analgesia and local anaesthesia. The filly was minimally lame, at the walk, within 36 hours after surgery, and the open wound created at surgery had contracted to half of its original size four weeks after surgery. Lameness was not apparent during clinical examination six months after surgery and the wound had completely healed.

Keywords

Horse, Fracture, Ilium.

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Removal of large necrotic fragments of the tuber coxae from a standing horse

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A Thoroughbred filly was presented because it was severely lame on its right hind limb at the walk. The right tuber coxae was displaced ventrally, and subcutaneous crepitation was palpable over the area. During radiographic and ultrasonographic examination of the right tuber coxae, multiple, large, osseous fragments were detected. Several, large, necrotic fragments of the tuber coxae and a portion of the parent bone were resected, with the horse sedated and standing, following the administration of epidural analgesia and local anaesthesia. The filly was minimally lame, at the walk, within 36 hours after surgery, and the open wound created at surgery had contracted to half of its original size four weeks after surgery. Lameness was not apparent during clinical examination six months after surgery and the wound had completely healed.
0.36 to 0.52L/L, and a mild leucocytosis (12.5 x 10⁶ cells/L; ref. 5 to 10 x 10⁶ cells/L), which was characterised by mature neutrophilia (8.2 x 10⁶ cells/L; ref. 3 to 6 x 10⁶ cells/L) and slight monocytosis (0.8 x 10⁶ cells/L; ref. 0 to 0.6 x 10⁶ cells/L). Biochemical analysis of serum showed that the horse was hypoalbuminaemic (46.3g/L; ref. 25 to 40g/L). The concentration of fibrinogen in serum was not determined. Other abnormalities were not seen during cytological and haematological analysis. The horse was discharged nine days after surgery. The day following surgery, the horse was not lame when walked but, when trotted in a straight line on a hard surface, the horse was grade one of five lame on its right hind limb. The wound had contracted to approximately half of its original size. Six months after surgery, the horse was not lame when walked or trotted in a straight line on a hard surface and it did not display lameness after flexion of the right hind limb. The wound had healed completely.

Discussion
Fracture of the pelvis of horses is relatively uncommon and accounts for 0.9% to 4.4% of all lameness (Hendrickson, 2002). Pelvic fracture of the horse can occur at the tuber coxae, ischium, acetabulum, or symphysis pubis, but fracture of the wing or shaft of the ilium is the most common type of pelvic fracture (Welch, 1999). The tuber coxae may fracture when struck, which may occur when a horse rushes through a door or gate (Wyn-Jones, 1988), or when a horse becomes cast in a stall (Adams and Fessler, 1986).

Fracture of the tuber coxae can result in only mild to moderate lameness (Ducharme, 1996). To accurately assess the position of the tuber coxae, the horse should be observed from behind, while it is standing squarely with equal weight on each hind limb. If the tuber coxae is fractured completely, it becomes displaced ventrally, and this displacement can be seen when the affected tuber coxae is compared with the tuber coxae on the contralateral side (King and Månsson, 1997). The combined traction of the internal abdominal oblique and tensor fascia lata muscles causes the fracture to distract ventrally (Wyn-Jones, 1988). An affected horse is described as having a ‘knocked down hip’. Fracture of the ilium anywhere along its shaft may also give a horse the same appearance (Adams and Fessler, 1986). The fractured ilium may protrude through the skin (Hendrickson, 2002). If an open wound accompanies the fracture, a sequestrum is more likely to form (King and Månsson, 1997), and a draining tract may develop (Hendrickson, 2002).

The horse in this report displayed the characteristic appearance of a horse with a ‘knocked down hip’, but its lameness was more severe than a typical lameness caused by uncomplicated fracture of the tuber coxae. The severity of the lameness was probably caused by the infection in the region of the fracture. The most likely cause of the infection was haematogenous inoculation of the fracture fragments by bacteria. Infection could also have been introduced by inoculation of bacteria through a puncture wound.
of the skin at the time of the injury but a cutaneous defect was not detected during clinical examination. Failure to obtain a positive bacterial culture result from a sample of the exudate taken at the time of surgery may have been due to the fact that the horse had received a three-week course of systemically administered procaine penicillin prior to referral. Anaerobic culture, which was not performed, may have yielded a positive culture.

Radiographic examination of the pelvis of a horse usually requires the horse to be anaesthetised (Little and Hilbert, 1987; Ducharme, 1996), but radiographic projections of the tuber coxae can be obtained with the horse standing (King and Mansmann, 1997). Ultrasonography is particularly useful in diagnosing fracture of the tuber coxae, because discontinuities of the cortical surface in locations accessible to ultrasonographic examination can be clearly identified (Reef, 1992).

Performing surgery with the horse standing, rather than anaesthetised and recumbent, eliminates the costs and risks attendant with general anaesthesia (Johnston et al., 2002). This, however, can be more demanding and often requires more surgical expertise than the same procedure performed with the horse anaesthetised.

In this case, the combination of epidural analgesia, local anaesthesia and sedation allowed surgery to be performed with the horse standing.

Morphine administered into the epidural space has been shown to relieve regional pain consistently in horses as far cranially as the ninth thoracic dermatome (Robinson et al., 1994). Horses with displaced fracture of the tuber coxae are usually treated conservatively, unless the fracture is complicated by infection (Adams and Fessler, 1986; Ducharme, 1996; Richardson, 1999). The prognosis for athletic performance is good (Ducharme, 1996; Welch, 1999).

In this case, the horse was sound when examined after six months of pasture rest following surgery. The horse’s prognosis for racing soundness, however, was considered guarded because of the degenerative changes present in the centrodistal joint of the right tarsus and also because a large portion of the ilium had been removed. The owner elected to use the filly for breeding purposes.

Acknowledgements
The authors thank Mr Peter Comerford, MVB for referring this case to the University Veterinary Hospital. Special thanks are due to Professor C.R. Bellenger for reviewing the manuscript.

References

FIGURE 1: Large fragment of the right tuber coxae within the surgical site. The combination of epidural analgesia, local anaesthesia and sedation allowed surgery to be performed with the horse standing.