

Fracture of the third trochanter of the femur

A Thoroughbred gelding racehorse was referred to Clyde Vet Group Equine Hospital with a history of severe left hindlimb lameness that had appeared following strenuous work. The lameness was reported to resolve following 3 weeks box rest but reappeared on the resumption of hard work. The referring veterinary surgeon had undertaken an ultrasound examination of the pelvis that did not reveal any evidence of a fracture to the shaft or wing of the ilium.

Clinical examination

Examination when led in-hand on a firm level surface revealed the horse to be 7-8/10 lame on the left hindlimb. No joint effusion, area of heat or pain was evident on examination of this limb. The horse was noted to be bilaterally poorly muscled in the crus and thigh areas. Due to the history and particularly considering the horse's occupation, there was a risk the horse may have suffered a stress fracture and he was admitted for a nuclear scintigraphy (bone scan) examination.

Imaging

Scintigraphic examination revealed significant increased radiopharmaceutical uptake (IRU) in the region of the left third trochanter of the femur (Fig 1&2). No other abnormalities were noted in either hind limb.

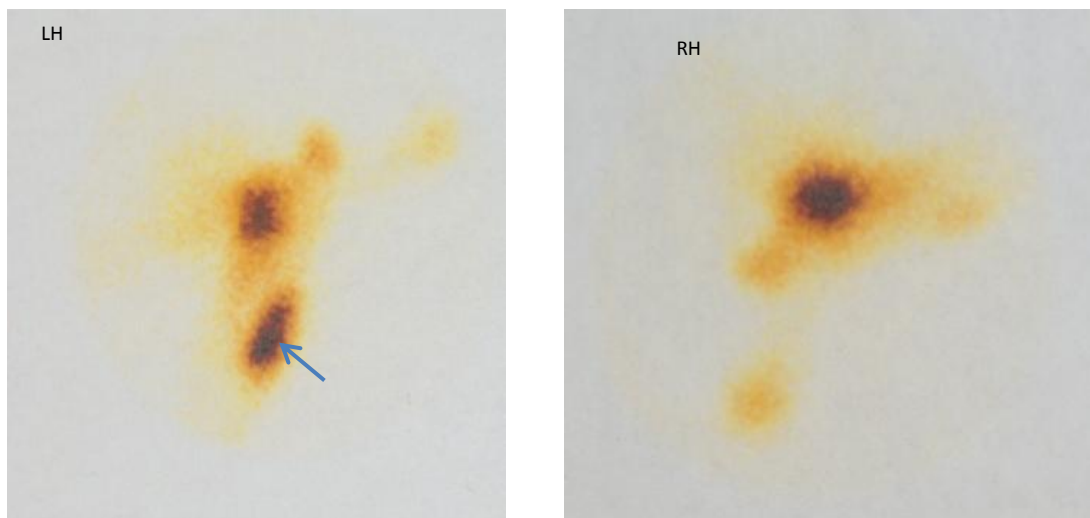


Fig 1 and 2. Scintigrams of the left and right hip regions demonstrating increased radiopharmaceutical uptake in the region of the 3rd trochanter of the left femur (blue arrow). Caudal to the right on both images

Following removal of the horse from the nuclear scintigraphy suite it was possible to obtain a craniolateral-caudomedial oblique radiograph of the left proximal femur. Whilst the quality of the image was relatively poor it did show evidence of a slightly displaced fracture of the third trochanter. The displacement was greatest in the distal portion of the fracture. (Fig 3). Periosteal reaction (assumed to be callus formation) was present at the distal margins of the fracture.



Fig 3. Cranio(20)lateral-caudomedial oblique view of the left proximal femur. This is an area of the horse that it is not usually possible to radiograph however in this case the horse was poorly muscled and we were able to obtain an image
Whilst the quality of the radiograph is not good it does show an irregularity and periosteal reaction at the distal portion of the third trochanter.

Ultrasonographic examination of the area revealed evidence of periosteal reaction at the junction of the third trochanter and the left femur; this was greatest at the distal portion of the trochanter. (Fig 4,5 and 6). The reaction was not present in the contralateral limb.

It was recommended the horse have 6-9 months rest. The horse resumed racing some 7 months later.

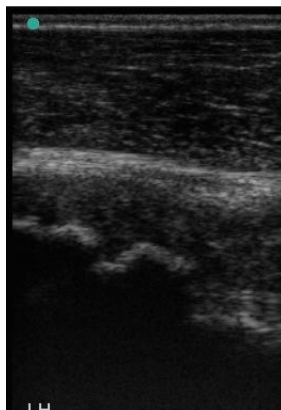
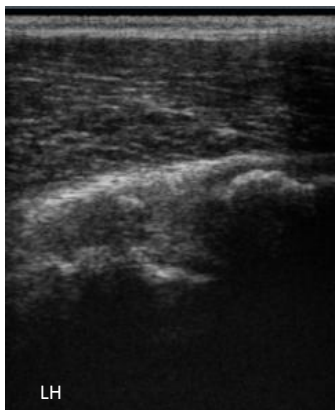


Fig 4 &5 Longitudinal ultrasonograms of the left hind proximal lateral femur (distal to the left) demonstrating considerable periosteal roughening indicating callous formation.

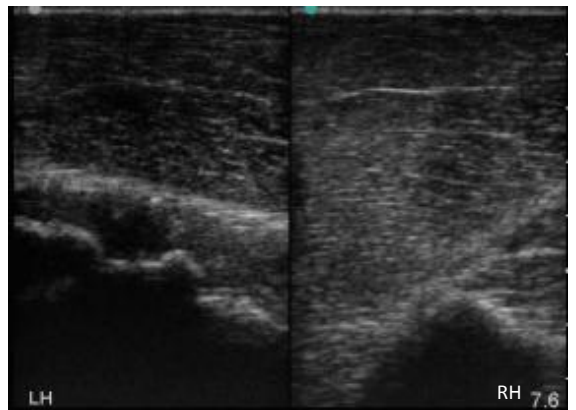


Fig 6. Transverse ultrasonograms of the left and right hind proximal femur regions demonstrating periosteal reaction at the distal end of the left third trochanter that is not present on the contralateral limb.

Discussion.

Third trochanter fractures are a rare injury in the horse that has been only briefly recorded in the veterinary literature (Geissbuhler *et al* 1998). They are thought to be a form of avulsion fracture following excessive muscle pulls. The displacement present on our radiographs may suggest that was the case in this horse.

We were particularly lucky in this case to obtain a diagnostic radiograph of the area as usually femoral radiographs in the standing horse are of limited diagnostic quality. This horse had particularly poor musculature over the femoral area that allowed these images to be made.