ELVIC FRACTURES are a common cause of hind limb lameness in the young racing thoroughbred. If Only They Could Talk

The pelvic bone function is to connect the hindquarters of the animal to the rest of the skeleton by connecting to the spine. The pelvis comprises two symmetrical halves with the sacrum in the middle. Joints are the connections between bones and the pelvis has three.

The first one joins the right and left halves of the pelvis together at the pubic symphysis, and in adult horses this becomes a bony union. The hip joints on each side are the second, connecting the pelvis to the upper limb via the head of the femur. The third joint is formed between the pelvis and the sacrum, which connects to the spine, and is known as the sacroiliac joint. This joint is spanned by very strong fibrous connective tissue and has minimal movement.

Each half of the pelvis consists of three bones: 1. Ilium 2. Ischium 3. Pubis

Together these bones form the platform on which the muscle mass of the hindquarters originate, and exert their incredible propulsive forces. Fractures can occur anywhere on the pelvic bone. However, the forces involved in locomotion create predilection sites for fractures. These sites depend on the strength of the forces acting at load bearing during speed, the inherent structure and the shape of the bone.

Diagnosis of a pelvic fracture

Firstly, the horse should be examined standing still in the yard. Assessing the hindquarters for any obvious disturbance to the symmetry of the bony extremities of the pelvis. Only the bony extremities of the pelvis can be palpated because of the large muscle mass of the hindquarters covering the pelvis. Sometimes if a fracture of the pelvis has occurred there can be a disturbance to the symmetry, and the palpable bony landmarks. A ‘knocked down’ hip can occasionally be visualised. Pain on palpation of the pelvic musculature can also give an indication as to where the lesion may be.

Fractures of the ischium can occasionally be manually palpated, but these often cause acute haemorrhage and swelling. As the swelling subsides with time a hollowness of the rump contour can be noted due to muscle wastage. Finally the tail and anus should be assessed for tone as fractures of the pelvis can cause paralysis of these structures.

It must also be remembered that the pelvis can fracture on both sides at the same time. Rectal examination allows assessment of the pubis, internal surface of the wing of the ilium, and the underside of the sacroiliac joint. The horse should then be assessed to determine the degree of lameness. This can vary in horses with pelvic fractures from being hardly lame at all to non-weight bearing, and depends on the type and the extent of the fracture.

Treatment of horses with pelvic fractures

The initial treatment of all pelvic fractures is to control the pain and assess the severity of the fracture to try and establish if you are dealing with a serious fracture that may displace and become fatal. Recumbency in the box would be the most dangerous situation for a displaced pelvis. Therefore, a horse that has a major pelvic injury should be laid up by the head with enough rope length to allow the horse some movement, but not enough to encourage it to lie down. Horses should ultimately not be tied up for longer than 4 weeks.

Surgical repair of pelvic fractures is not a realistic option in the adult horse. Fractures are treated with a period of box rest and subsequent controlled exercise regimes while judged by regular ultrasound scans to assess healing. Healing of the fracture generally takes between two and three months. This does depend on the degree of displacement of the fracture, and the subsequent distraction of the fracture fragments by muscle contracture. But many horses will make a return to athletic function and racing.

Tuber coxae fractures are often described as ‘knocked down hip’. These can heal by fusing back onto the pelvic wing, although there can be a risk that the sharp end of the fracture fragment can wear through the skin and not heal.

Fractures of the ilial wing are generally the most common type of pelvic stress fracture encountered in the TB racehorse. They rarely displace and the horse becomes sound quickly. Rehabilitation is quicker and horses often start walker exercise after 2-4 weeks’ box rest and return to trotting at six weeks post-injury.

Ilial shaft fractures are common after a fall but can also occur during training or racing. These fractures are extremely painful and generally result in non-weight bearing lameness. Horses can also suffer from rapid blood loss from the large blood vessel that traverses the ilial shaft. Combined with the severe pain, horses can go into shock and die from these fractures very quickly. Ilial shaft fractures that initially are incomplete, when rested can become complete and cause collapse of the pelvis. Invariably this type of fracture carries a grave prognosis.

Fractures of the pubis and ischium are relatively uncommon. These can occur during training or when a horse rears and falls over backwards.

In order to avoid further orthopaedic injuries, when a horse returns to exercise it is important to understand that a horse that has undergone a prolonged period of box rest has become skeletal naive due to the substantial bone demineralisation that occurs during disuse. When training resumes this should be gradually built up as the skeleton takes about one month at each gait to adapt to the loads placed on it.