PAIN MANAGEMENT IN THE HORSE

PAIN IS A BAD FEELING. It is a signal that something is going wrong and it leads to alteration in behaviour.

Often this is protective – like when a lame horse rests the limb that is injured by taking more weight on the healthy ones – but sometimes it can lead to further damage, as in a colic case where the horse rolls violently, injuring its back or head. Pain initiates a homeostatic mechanism that can work to preserve the individual or may be part of its demise. The horse alters its activity in response to pain in an attempt either to alleviate the pain or to avoid it.

Physical pain usually has an emotional content; the pain can start in one place – a sprained tendon, for example – but it will involve the whole body. Pain can be acute, often associated with injury; or chronic, usually linked to degeneration. It can be slight or severe. The response to pain can be masked by the animal’s mental state; if the horse is in flight mode, excited, it may not show pain in the same way that it would if it was relaxed. Conversely, pain can cause panic and severe emotional distress.

Take a horse fly bite. I am riding in the forest in summer and my horse gets bitten by a fly. It hurts and hewitches his skin. The next bite makes him turn his head to brush off the fly. Ten bites later and he starts to panic and resists going on. I can either apply pressure or pain to keep him going or if I am attentive to his signals I can take him home and take him out of the pain zone. If I ignore his distress and he continues to react to the stimuli, I might get bucked off or run away with.

Pain is the communication between parasite and host and between horse and handler. How the pain is managed is the foundation of a conditioned response. We may not be aware of it, but our interaction with animals is largely composed of habituated behaviour patterns. If the horse associates pain with our approach, he will back off or even become aggressive. Giving repeated injections can build this pattern – we are all familiar with the needle-shy horse.

The horse in pain communicates its problem by behaving differently. The human response depends on noticing what is going on and then interpreting it. A pony rolling in the paddock can be normal or in the beginning of colic. The observer may be a “good stockman”, someone who is keenly interested in his animals – whether for financial or emotional reasons – and who has experience of problems and outcomes.

On the other hand, the horse’s caretaker can be an amateur whose attachment to the animal is more emotional than practical. Knowing the capabilities of the client helps the veterinary surgeon assess the situation from the first contact.

The acuity of observation depends on innate skill which is fuelled by interest and experience and founded on specialist knowledge. The jump from assessing symptoms to making an accurate diagnosis depends on how much one knows; interpreting pain requires an awareness of the pathological process.

Observation is supported by listening to the caretaker’s account of the problem and taking note of the patient’s environment.

Location of the source of pain uses nearly all the senses: touch in palpating the board-like muscle in a tied-up horse or performing a rectal examination; hearing, with or without a stethoscope, for gut sounds, respiratory sounds, or the rhythm of a horse trotting on tarmac; smell in detecting necrotic tissue.

Identification of the cause of pain is the core of clinical examination. Pain is very often associated with inflammation, but it can be neurogenic. The key lameness question is: “is it orthopaedic or is it neurological?”

Resolving this sort of dilemma involves a whole range of techniques – from imaging to nerve blocks and physiological tests. For example, the pain may be coming from a fracture, or a tumour, or perhaps even both.

Treatment

Once the pain is defined, treatment can be started. The non-steroidal anti-inflammatory drugs (NSAIDs) are the pharmacological pillars of pain control, but there is also the physical side: splints, bandages, application of heat or cold and acupuncture. Surgery is often needed to remove the source of the pain.

There is a dilemma in blocking pain when the progress of the condition needs to be evaluated, as in colic where the masking of symptoms by efficient analgesia may make the decision of whether to go for surgical intervention more difficult.

Managing the horse in pain requires good nursing care based on understanding of the pathology of the condition. It may be hard to persuade an owner that a fat, laminate pony needs frog support and a month’s box rest on shavings to correct his weight and stop his feet becoming progressively deformed.

Comfort aids recovery. It is imperative to realise that skeletal pain upsets body symmetry and therefore the function of the whole animal even if only one limb was involved.

The performance horse needs more than cessation of pain to recover its ability as an athlete. Injury can often have an emotional component, as in the event horse which has fallen in competition and needs a programme of physiotherapy, physical rehabilitation and confidence building to get it back to its full athletic potential.

Acupuncture is under-used. It can locate pain where all else has failed and prolong the life of a horse that has been through the full gamut of medical care without resolving its problem. Pain is the key to many of our clinical cases and managing it is pivotal to the outcome of our treatment.

Facial expressions research aims to develop tool to improve welfare

DR Sue Dyson, head of Clinical Orthopaedics at the Animal Health Trust, reports that her team has developed an ethogram to help identify signs of pain from a horse’s facial expressions when being ridden.

Stage 1 of the development involved testing an ethogram to describe facial expressions in ridden horses and to determine whether individuals could interpret and correctly apply the ethogram with consistency among assessors.

An ethogram was developed by reference to previous publications and photographs of 150 lame and non-lame ridden horses, and a training manual was created. The ethogram consisted of a catalogue of facial expressions including the ears, eyes, nose, muzzle, mouth and head position.

Thirteen assessors underwent a training session and, with reference to the training manual, evaluated still lateral photographs of 27 training heads. Features were graded as “Yes”, “No” or “Cannot see” (when it was not possible to determine the presence or absence of a feature). The ethogram was adapted and, after further training, the assessors blindly evaluated 30 test heads from non-lame and lame horses. Intra-class correlation (ICC) and free-margin Kappa tests were used to assess consensus among assessors.

The ethogram was applied blindly to a trained analyst to photographs (519) of the head and neck of lame (76) and non-lame (25) horses acquired during ridden schooling-type work at both trot and canter. These included 30 images of seven lame horses acquired before and 22 images after diagnostic analgesia had abolished lameness. A pain score was applied to each feature in the ethogram, based on published descriptions of pain in horses. A total of 27,407 facial markers were recorded, with those giving the greatest significant difference between lame and sound horses including ears back, eyes partially or fully closed, an open mouth with exposed teeth and being severely above the bit. Pain scores were higher for lame horses than non-lame horses (p<0.001). Total pain score (p<0.05), total head position score (p<0.01) and total ear score (p<0.01) were reduced in lame horses after abolition of lameness. Severely “above the bit”, twisting the head, asymmetrical position of the bit, ear position (both ears backwards, one ear backwards and one to the side, one ear backwards and one ear forwards) and eye features (exposure of the sclera, the eye partially or completely closed, muscle tension caudal to the eye, an intense stare) were the best indicators of pain.

Application of the ethogram and pain score could differentiate between lame and non-lame horses, and assessment of facial expression could potentially improve recognition of pain-related gait abnormalities in ridden horses, Dr Dyson reports.

She adds that the importance of facial expression for pain recognition in horses, and its potential use across the industry, has been highlighted by this study; the next stage of the project is already under way with the development of a whole horse ethogram and its application to non-lame and lame horses, to help to differentiate between manifestations of conflict behaviour, in response to the demands of the rider, and pain.

Dr Dyson believes recognition of changes in facial expression could potentially save horses from needless suffering and chronic injuries, by enabling those working with horses to recognise pain sooner, and to get these horses the veterinary care that they need. Development of a practical tool for recognising facial expressions, similar to that of a body condition score chart, could dramatically improve the health and welfare of all horses.