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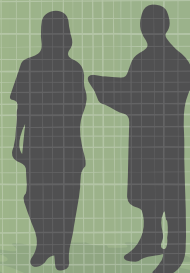
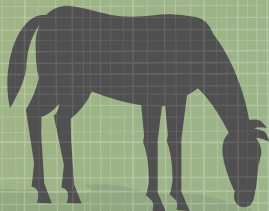
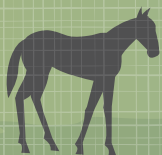
Championing the Equine Vet



60th



Handbook of Presentations



NEUROLOGY

Chair: Bettina Dunkel

16.00

Headshakers – a headache for all involved

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Overview

This talk will consider:

- Is head-shaking a headache for the owner (impact)? This means consideration of prevalence of head-shaking and within that, TGM head-shaking.
- We will consider the headache to the vet as a result of head-shaking – that is the challenge of diagnosis and treatment.
- We will consider published causes of head-shaking, most of which involve pain (an ache for the horse, if not always in the head!) We will consider TGM head-shaking in more detail, looking at the evidence for neuropathic pain, the clinical signs, and the role of diagnostic local anaesthesia in investigation and possible treatment of neuropathic pain.

Headache for the owner (the NHS and the economy)

Tension-type headache is the most common type of headache in the human [1]. The exact mechanism is unknown but the role of pericranial myofascial input (tense neck and shoulder muscles) seems important. If input is sustained, this can lead to CNS sensitisation and chronic headache.

Headache makes up 3% of all GP admissions with a £250 million direct cost to the NHS and £2.25 billion absenteeism losses [1].

So how many owners might be affected by tension-type headache because of their horse's head-shaking? The prevalence of owner-reported head-shaking in the UK equine population is 4.6% [2]. Few causes of head-shaking have an easy, quick fix. This could result in ~43,000 UK horse-owners being affected by tension-type headache...

Headache for the vet

Major work-related stressors in UK veterinary practice include high effort at work and low reward along with the demands of client expectations [3]. It can be hard to diagnose the cause of head-shaking and then to treat, so these cases might give you a headache too...

Causes of head-shaking (headache for the horse)

Published causes include: ear mite infestation; otitis media-interna; cranial nerve dysfunction; cervical injury; ocular disease; guttural pouch mycosis; dental periapical osteitis [4]; protozoal myeloencephalitis [5]; sinusitis [6]; behavioural or rider issue [7]; and musculoskeletal pain [8].

Trigeminal-mediated (TGM) head-shaking made up 98% of head-shaking cases diagnosed in a hospital population [4] and in an unpublished Bristol and B and W hand-tally, 90%. TGM head-shaking signs are usually classic: vertical shaking; accompanied by sharp vertical tics; signs of nasal irritation; and bilateral. It may be seasonal (complex environmental interaction) and may occur at rest but is worse at (any) exercise. There are clinical similarities to some migraine and cluster headache.

In people, neuropathic pain manifests as allodynia, hyperalgesia and paraesthesia (varying severity of tingling, pins-and-needles, burning, shooting, stabbing, electric-shock like pain). There is often poor response to treatment. Chronic pain doubles suicide risk [9] and trigeminal neuralgia in people is known as the 'suicide disease'.

We assume TGM headshakers experience neuropathic pain. The trigeminal nerve has become sensitised, firing at a lower threshold than in a normal horse [10-13]. Some cases can respond to treatment for neuropathic pain.

There are clinical signs of pain and we are working with the University of Hannover to develop a head-shaking score, including pain face evaluation. Diagnostic local anaesthesia of the maxillary nerve can be used in diagnosis after a risk-benefit analysis, with a positive response confirming facial pain, although not why, and a negative response not advancing knowledge of the case.

Some TGM headshakers will respond to treatment for neuropathic pain. Considering pharmaceuticals, neuropathic pain does not respond to NSAIDs. Cyproheptadine and/or carbamazepine gave mixed results [14,15]. Gabapentin is published for neuropathic pain in the horse but not head-shaking [16] and there is work on pharmacokinetics. There is work on pregabalin pharmacokinetics in the normal horse [17]. Use of a nosenet may give up to 70% relief in 25% cases [15], working by gate control theory. EquiPENS™ neuromodulation gave 52% of 168 horses remission [18]. Results of electroacupuncture have been published in six horses, with median remission of 2.5 weeks after the third procedure [19].

Take home messages

There are few causes of head-shaking which are quick and easy to treat. Most causes involve pain and they can have significant welfare, economic and emotional impact. Head-shaking is worth a thorough investigation. A diagnosis of TGM head-shaking is of exclusion and clinical suspicion, which has limitations. TGM head-shaking involves neuropathic pain. There is varying individual response in people to neuropathic pain treatments. In horses, evidence suggests to start with a nosenet; if that fails, EquiPENS™ neuromodulation, and if that fails, a pharmaceutical trial. Magnesium supplementation may be used as an adjunct [20]. There is a lot more research to be done. We need to discover the aetiopathogenesis of TGM head-shaking. We need to further explore potential similarities to migraine, cluster headache and trigeminal neuralgia in people and the role of receptors in the trigeminal nerve and ganglion. Most causes of head-shaking involve pain. We need to raise awareness of this. Encourage and support your clients to seek veterinary attention for head-shaking, which is only sought in 25% cases of head-shaking [2] and this is likely to be a welfare issue.

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