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How to: Manage headshaking

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Background
Headshaking is a clinical sign where horses show repeated vertical or horizontal movements of the head and neck. There are many conditions or problems which may cause these clinical signs, for example bad riding. An important consideration is whether the horse is suffering facial pain. If the horse is suffering facial pain then this may be due to detectable pathology, for example dental disease. However in 98% cases (Lane and Mair 1987) no pathology is found. In these cases, a diagnosis of headshaking due to facial pain from an idiopathic trigeminal neuropathy is likely.

Idiopathic trigeminal neuropathy
Average age of onset for trigeminal neuropathy is 8–12 years (Roberts et al. 2009) and the condition may be more common in geldings (Madigan and Bell 2001). Headshaking is predominantly vertical (Roberts et al. 2009) and often larger movements are accompanied by sharp, vertical twitches/flashes. Headshaking is often accompanied by signs of nasal irritation such as snorting, rubbing the nose and striking at the nose (Newton et al. 2000; Roberts et al. 2009).

Signs may occur at rest but are often worse at exercise (Newton et al. 2000; Roberts et al. 2009). They may be seasonal and if so, this is usually spring/summer (Madigan and Bell 1998; Roberts et al. 2009). Signs may also be worse outdoors.

How to approach a case

1. History
This makes an important contribution to the index of suspicion for neuropathy. History should include signalement and a description of signs. This should include when the signs occur; for example whether signs are worse at exercise than rest and whether signs are seasonal. You should determine whether it occurs with other riders and in other environments. Certainly a horse which is headshaking outdoors but not indoors even on the same day or only headshaking part of the year, is unlikely to be doing so because of causes which would be present consistently such as back pain. You should also determine the date of last dental examination and check the fit of the tack.

Response to treatment can also give useful information. Use of a nosenet improves 25% of headshakers (Mills and Taylor 2003). While failure to respond to a nosenet does not rule out trigeminal neuropathy, a positive response would be suggestive of the condition. Neuropathic pain is not alleviated by the use of nonsteroidal anti-inflammatory drugs so if these give a positive response then other pathology would be more likely. An allergy would be expected to have been alleviated by use of corticosteroids.

2. Observation
Take time to observe the horse headshaking and see if signs are typical for idiopathic trigeminal neuropathy.

3. Clinical examination
A thorough clinical examination, including ophthalmic examination should be performed.

4. Diagnostic local analgesia
A positive result will confirm facial pain to be the cause of the headshaking, although a negative result will not necessarily rule it out. The horse must be headshaking consistently and in a repeatable situation (ideally exercise) prior to performing the technique.

Bilateral rostral infraorbital nerve analgesia is simple to perform but rarely informative (Newton et al. 2000). Bilateral caudal infraorbital nerve analgesia is more reliable (23/27 cases, Roberts et al. 2013) although only in the hands of an experienced operator (Wilmink et al. 2013).

Should a diagnosis of facial pain be made, then you need to determine whether there is a reason for the facial pain or if it is likely to be a trigeminal neuropathy.

5. Computed tomography
This can be performed standing and is the best imaging modality for the equine head at present. Whilst the majority of cases will be unremarkable, occasionally pathology will be found which was not detectable with radiography.

6. Endoscopy
Endoscopy of the upper respiratory tract including nasal passages and guttural pouches should be performed.

7. Oral examination
Thorough oral examination should be performed.

8. Other investigations
On occasions where signs seem to be induced by light using a Guardian mask or similar should confirm or refute this.

9. Treatment of idiopathic trigeminal neuropathy
A nosenet is cheap, noninvasive and can be used in competition so should be the first-line treatment. Results of medical therapy with carbemazepine and cyproheptadine, alone or in combination have been inconsistent (Newton et al. 2000; Madigan and Bell 2001) although may be effective for some individuals. There may be side effects of drowsiness and they would not be permitted for use in competition. Surgical caudal compression of the infraorbital nerve carries an approximate 50% long-term success rate (Roberts et al. 2013). Many develop side effects of nose-rubbing and sometimes worsening of headshaking post operatively. In the majority of cases these are transient but in 4/8 were so prolonged and severe as to warrant euthanasia. Therefore we recommend the procedure only in those cases where euthanasia is the only other alternative. This is unfortunately often the case for severely affected headshakers.

References
