

Headshaking is a complex condition. Vet Ben Sturgeon of Castle Veterinary Surgeons, Barnard Castle, explains.

Much more to headshaking than behaviour

Headshakers are not being difficult, they are not being awkward, they do not have an allergy, they are not faking it. These horses have a very serious condition.

We think some, or all, headshakers suffer from a condition, trigeminal neuropathy, very similar in nature to the syndromes of facial pain encountered in people with multiple sclerosis, post herpetic neuralgia, cluster headache syndromes and trigeminal neuralgia.

This latter condition is considered either an abnormal firing of the trigeminal nerve, which runs from the brain to the eye, nose, upper and lower jaw, or more likely an abnormality in the brainstem,

which means it interprets messages from this nerve abnormally.

People with the condition usually report a sudden pain across the face, not unlike an electric shock. In all of the conditions, uncontrollable pain is the number one feature.

Specific trigger

In people, this pain occurs when they are exposed to a specific trigger factor, such as a light breeze on the face, or brushing teeth, or even breathing. The trigger stimulus is individual to them. It is described as the worst pain known to man, and without treatment, many sufferers commit suicide and so it has become to be known as the suicide disease.

In the 1970s and 80s equine

headshaking was often described as a 'behavioural' problem, often blamed on poor tack or horsemanship. We now know this is not only wrong, but is also a cruel and unnecessary approach to a seriously ill horse.

In horses the characteristic signs are seasonal, worsen with exposure to light and vary from involuntary, up and down movements of the head, through to nostril clamping, face rubbing and even striking at the face. The signs are often seen during defined activities, such as exercise or in defined circumstances not associated with exercise, such as exposure to rain, cold, dust or wind.

The condition is often reported to have an obvious abrupt onset of an apparent severe facial pain and owners will frequently call attributing the symptoms to a 'bee sting on the nose'.

Affected horses are often extremely distressed and many are unmanageable. They can cause themselves serious injuries in an attempt to relieve themselves of the pain and can present a physical danger to riders and stable staff.

In contrast, a few cases have a more gradual onset with a much milder head 'tic' being present for some weeks or even years before more obvious signs develop. The signs can be attributed to one side of the face or both and, when both, there may be significant dif-



The prognosis for headshaker horses is currently poor and the cause of the problem is also unknown.

Investigation

- Endoscopy
 - X-rays of the head
 - Scintigraphy (bone scan)
 - Computer Tomography (CT scan)
 - Ophthalmology
 - Nerve blocks
 - Herpes blood test
 - P2 - myelin sheath assay
- Generally less than 2 per cent achieve definitive diagnosis

Treatment

Management

- Nasal nets
- Face nets
- Tinted or Polaroid contact lenses
- Seasonal (avoidance) turnout considerations
- Back manipulations
- Fly control
- Bitless bridle
- Magnesium supplementation

Medical

- Cyproheptadine
- Carbamazepine (high doses)

- Hydroxyzine
- Potentiated sulphonamide and pyrimethamine antimicrobial (Protozoal Myelitis)

Surgical

- Involving the infraorbital branch of the trigeminal nerve

Prognosis

- Variable, generally grave, with less than 5-10 per cent cure although many improved

Prevention

- Largely unknown
- Herpes vaccination

Differential diagnosis

Headshaking is a 'presenting sign' of disease. It is a sign something is wrong and/or irritating the horse, probably in the head area.

Headshaking has been reported in horses suffering from nearly 60 diseases and conditions, including:

- Respiratory problems, e.g. sinus, guttural pouch infections
- Eye problems
- Central neurological problems and diseases

- Hormonal problems
 - Ear mite infestations
 - Harvest mite infestations
 - Middle and inner ear problems
 - Pain in the joints of the head
 - Back pain
 - Teeth problems
- All need to be considered and investigated fully before a true diagnosis can be made. In most cases 90 per cent are classed as 'Idiopathic, meaning no cause is found'

Classification

Headshakers can be classified according to the extent of seasonality, the presence or lack of intermittency of signs and their severity:

- **Seasonality** - Many headshakers show the signs only during a particular time of year, most commonly spring and summer. Seasonality can be explained by the occurrence of trigger factors such as pollen, insects, dust, warmth, cold, rain or wind. Light has been suggested, but this is now

largely discredited, as sunshine also accompanies many other factors which are more likely trigger factors

- **Intermittency** - Most headshaking horses show signs under defined conditions, such as exercise, bright light, rain, wind, cold, warmth, shade, or when exposed to pollen or insects. Almost every case has a different set of triggering environmental factors

- **Severity** - Some cases are very mild (grade one), where the

movement of the head is slight and almost imperceptible. The horse is not unduly distressed and both horse and rider may ignore it. Grade five headshaker horses are severely distressed and may be uncontrollable. Any attempt to restrain the horse is resented and even touching the face can trigger extreme resentment. It may rub its face so badly it causes sores and bleeding. These cases cannot be ridden safely

ferences in the severity of the signs between the two sides.

Some cases are tolerable, some are manageable and a few are treatable. Given horses are usually in considerable pain during episodes and many (24 per cent) worsen each year, euthanasia may even be justifiable.

The exact cause is unknown, although nerve pain has long been blamed for the cause of headshaking, and, as long ago as the late 1800s, vets were surgically severing the nerves in an affected horse's nose in an attempt to cure the problem.

There are many sources for potential nerve pain in the horse's head but it is thought branches of the trigeminal nerve, which conducts sensation from the muzzle and face to the brain, is the main source.

For some reason, parts of this nerve may be damaged and 'fire' inappropriately, causing painful sensations in a particular area, i.e. the nerves are telling the horse it is being hurt in this area when, in reality, it is not. So the clinical signs of headshaking represent a pathological exaggeration of a normal response.

A healthy horse will respond to a fly landing on its face with a toss of its head. A horse with trigeminal neuralgia behaves as though it is plagued with a swarm of particularly vicious biting flies which refuse to go away.

The syndrome is non-inflammatory, the pain, in other words, is 'perceived', deriving from the abnormal sensory function

rather than from inflammatory pain and so painkiller and anti-inflammatory drugs usually have absolutely no effect at all.

The cause of this neurological problem is currently unknown.

Treatment

The prognosis for genuine headshaker horses is currently poor. About 5-10 per cent can be resolved and more can be improved significantly but this is somewhat better than the zero prognosis which existed up to recently.

Treatment obviously depends on the cause, therefore no single consistently effective treatment is available. Options include a change of environment (try to avoid bright light, warmth or wind on the face), management or riding, nose masks, contact lenses and medical treatment, if appropriate.

Nose nets appear to be the most consistent non-surgical treatment to date - overall improvement in 70 per cent of cases. Improvements, however, may vary depending on the specific symptom. Occlusive masks with side ports are another option and may help up to 80 per cent of cases,

5-10%

Percentage of horses diagnosed with genuine headshaking which will be cured of the condition.

In the 1970s and 80s equine headshaking was often described as a 'behavioural' problem
BEN STURGEON

but these are often impractical. Some headshaking cases show significant improvement with a change of environment, but many develop the problem again within days of the move.

There is medication available, based on that used in people. However, it is expensive, causes drowsiness and horses cannot compete while on medication.

There are a variety of surgeries performed in people. That there are so many different types shows they do not yet have an excellent cure, as if they did, then there would only be one technique of choice. However, all these surgeries target the nerve as it exits the brainstem and use either a 'scarring' agent or more recently a coil to slowly compress the nerve. While results are encouraging, a complete cure is yet to be found.