

ON THE ABSENCE OF EVIDENCE FOR EQUINE TEMPOROMANDIBULAR DISORDER

Congratulations and thanks to Peter Ramzan for reviewing our knowledge of the equine temporomandibular joint (Ramzan 2006). The perspective provided - that as yet we know very little - should curb the enthusiasm with which equine temporomandibular disorder (TMD) is currently diagnosed. As Ramzan relates, "*Proponents of 'equine TMD'*" maintain that such a diagnosis is justified when a horse exhibits "*headcarriage or behavioural problems for which veterinary science currently holds no answer.*"

Diagnosis by a process of elimination is justified but not in the absence of evidence for the final choice. It is especially questionable when it overlooks an alternative diagnosis for which there is evidence. Veterinary science does have an answer. It is one that lends itself readily to testing and is located at the other end of the mandible.

The clinical signs that proponents cite as supporting a diagnosis of TMD comprise "*bitting, headcarriage and gait abnormalities, back pain/stiffness, sour attitude, incoordination, headshaking, and dysmastication.*" All these signs are consistent with a diagnosis of bit-induced pain (Cook 1999, 2002, 2005a,b, Cook & Strasser 2003). The 'bitting abnormalities' invoked are not one of a group of signs amongst many but are, in my experience, the cause of all the rest. As all bits are unnatural and intrinsically 'abnormal,' i.e., oral foreign bodies incompatible with the physiology of exercise, the collective term 'bitting abnormalities' is inappropriate. It suggests that horses are behaving abnormally when, in fact, they are simply exhibiting perfectly normal responses to pain; inconvenient though these may be to the rider.

I have now documented over one hundred clinical signs caused by the bit (Cook and Strasser 2003). They can be classified under the mnemonic of 'the six 'F's':' fright, flight, fight, freeze, facial neuralgia, and physiological confusion. Pain or fear of pain is the trigger for the first five. Some signs, such as bolting (flight response) and bucking or rearing (fight responses), are potentially fatal to both horse and rider. Facial neuralgia (the headshaking syndrome), though not fatal, often means loss of use. About a third of the signs are pathognomic (e.g. a horse that is overbent at exercise, opens its mouth, or lolls its tongue) but most of the signs are non-specific. Readers may protest that, as signs of bit-induced pain are so numerous and mostly non-specific, such a diagnosis is no more rigorous a differential than TMD.

There are, however, three criteria that differentiate bit-induced pain from so-called TMD or any other disease.

1. Confirmatory evidence from removal of the hypothesized cause:

A tentative diagnosis of TMD is difficult to support on the basis of evidence (eg., diagnostic tests, response to treatment or a post-mortem examination). In contrast, removal of the bit and its replacement by a painless, safer and more effective method of communication provides compelling evidence (often on day one) of a correlation between signs and hypothesized cause.¹

2. The relative ease with which confirmatory evidence can be obtained:

Whereas a diagnosis of TMD is tenuous at best and difficult to prove, even with sophisticated aids to diagnosis, a diagnosis of bit-induced pain is easy to prove. All

that is required is removal of the painful bit and its replacement with a painless method of rider communication.

- 3. Likelihood:** Whereas known causes of temporomandibular pain are rare (septic arthritis, luxation, and fracture), bit-induced pain is common. To cite the familiar adage, common things commonly occur. Indisputably, one or more metal rods are commonly present in the oral cavity of an exercising horse. Even in the best of hands, significant focal pressure is placed on the hard and soft tissues of the mouth by a snaffle bit. Leverage bits multiply the intensity of pressure logarithmically and curb chains add a thumbscrew action.

If, when presented with the clinical syndrome described, we resort to a diagnosis of TMD, we are – I submit – getting hold of the wrong end of the stick. We should, I suggest, first consider an evidence-based diagnosis at the rostral end of the mandible, before embracing an unsupported one caudo-dorsally. The principle of Occam's razor also applies, the medieval rule of economy in logic. If both simple and complex answers are available, we should prefer the simple.

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¹The Bitless Bridle. The Bitless Bridle Inc., 1200 Nursery Road, Wrightsville PA 17368 and online at www.bitlessbridle.com

References

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