Clinical Commentary

Cervical arthropathy, myelopathy or just a pain in the neck?

M. J. Martinelli*, N. W. Rantanen† and B. D. Grant††

California Equine Orthopedics, San Marcos, California; †Fallbrook, California; and ††Bonsall, California, USA.

In the paper by Birmingham et al. (2010) in this issue, the authors document their experiences treating cervical arthropathies with intra-articular medication. They bring to the attention of the reader that horses suffer from cervical issues that may affect performance in many ways.

The first author of this Clinical Commentary (M.J.M.) admits that 20 years ago he considered the equine neck as inconsequential to performance issues, functioning merely as a place holder between the bit and the rider's hands. More accurately, the cervical spine should be considered the conduit for all signals travelling from the control centre of the brain to the rest of the body, particularly all 4 limbs. In the horse, issues associated with the neck may be related to its gravitationally challenged anatomical construct, functioning as a horizontally positioned bony column supported by the elastic nuchal ligament (Denoix and Pailloux 1996). During exercise, particularly in disciplines that require the horse to assume a collected cervical frame, excess stress may be placed on these articulations, either between the cervical bodies or the facet joints.

Cervical issues in people are commonly reported in orthopaedic practice and are often associated with weakness and pain in the appendages or local pain restricting movement. Most often the clinical signs are described verbally to the attending physician, while the gold standard for imaging of cervical lesions in the human patient is MRI (McCormack and Weinstein 1996; Prakash 1999). Due to the limitations of magnet design, however, it is not currently, and may never be, feasible to image the caudal cervical region of the horse. Therefore equine clinicians are limited in their imaging capacity to radiology, ultrasound and nuclear scintigraphy. In cases where compression is suspected, myelography enhances the radiographic study, but must be conducted under general anaesthesia (van Biervliet et al. 2004).

In our opinion, any horse with mild ataxia, intermittent or unrelenting forelimb lameness or obscure hindlimb lameness should be investigated for cervical issues. Furthermore, any time a generalised decrease in performance is noted without corresponding lameness, a problem affecting any part of the axial skeleton should be ruled out. The pathophysiology associated with an obscure lameness may be due to a proprioceptive deficit, nerve root compression or pain. Proprioceptive deficits may be described by the trainer or rider simply as 'being heavy on the forehand' or feeling 'disjointed' between the fore- and hindlimbs. Recurrence of appendicular lameness following successful treatment may also be indicative of an underlying issue with the axial skeleton (Ricardi and Dyson 1993).

The physical examination of the axial skeleton of the horse is subjective and may be considered limited compared to examination of the limbs. Assessment of the neck includes observation of muscular development or atrophy, the response to passive cervical manipulation and dermal stimulation. In the majority cases of cervical arthropathy, muscular atrophy is noted. Most horses that exhibit abnormal cervical manipulation either resist lateral flexion totally or avoid lateral flexion by offering a more ventral flexion of the head and neck. The rider often describes resistance to lateral bending, being 'heavy on one rein' or resistance to achieving the frame desired. In some cases, particularly with upper level dressage horses, the avoidance of this desired frame can result in hypertrophy of the affected muscles along the topline.

Problems along the entirety of the axial skeleton range from cervical arthropathy to overriding dorsal spinous processes to sacroiliac issues. It is difficult to rule these issues out without the screening tool of nuclear scintigraphy as these areas are easily highlighted by increased radiopharmaceutical uptake (IRU). Although IRU is commonly present at the facet joints of C6-7 and may not be associated with overt clinical signs, it is our opinion that it should not be considered normal (Fig 1). More importantly, IRU noted in association with the articulation between other vertebrae often carries clinical significance. This seems to be especially relevant if there is IRU seen at C4-5 or C5-6 with none observed at C6-7. In the case of myelopathy, no IRU may be noted in the cervical

*Author to whom correspondence should be addressed.
As outlined by Birmingham et al. (2010), radiography is used to document some cases of cervical arthropathy. Radiography can highlight enlarged facets, previous trauma, such as fracture, or entheseous bone formation and narrowing of the spinal canal, although these findings may not always carry clinical significance (Down and Henson 2009). Findings on ultrasound may include periartricular osteophytosis/enthesiophytosis not seen radiographically. Ultrasound is also used to identify the facet joint and to guide the needle for proper intraarticular therapy (Fig 2).

Successful treatment with intra-articular corticosteroids, as in the paper by Birmingham et al. (2010), seems to imply that the cervical pathology is somehow related to articular or periartricular inflammation. Similar to the aforementioned paper, most of the injections in our caseload have been with corticosteroids, however recent applications have included the use of autologous conditioned serum (ACS; Orthokine). In a paper by Becker et al. (2007), ACS has been successfully used in people suffering from lumbar radiculopathy. Other treatments for cervical issues may include acupuncture, massage, manipulation or shockwave therapy.

Return to function following treatment of a cervical arthropathy can be difficult to quantify, particularly because the clinical signs may be considered obscure to begin with. And in some situations the treatment has been combined with other therapies aimed at concurrent appendicular issues. Birmingham et al. (2010) designed an extensive questionnaire to be completed by the owner or trainer to determine response to treatment. In cases where ataxia is noted, return to exercise should only be following a recheck neurological examination and with stern warnings and limitations for the safety of the rider and for legal reasons. In moderate to extreme cases of cervical compression or unrelenting pain associated with the cervical arthropathy, cervical body fusion has been successfully employed (Trostle et al. 2003). Regression of the enlarged facet joint has been documented with plain radiography and myelography following cervical stabilisation.

Examination of the authors’ last 150 cervical facet injections (CFI) revealed that 70% received a bone scan prior to injection. This represents a very different approach to the work-up of a cervical case compared to the paper by Birmingham et al. (2010), when only 31% received a bone scan. In 74% of the cases only the facet joint at C6-7 were injected, while 21% (32/150) had C5-6 and C6-7 injected. In 5% (7/150) of the cases the facet joints at C4-5, C5-6, and C-7 were injected. Of these 7 horses that had 3 sets of facet joints injected, 6 of the 7 horses were engaged in the discipline of dressage. Only 8 out of the 150 horses treated by CFI exhibited mild signs of ataxia, with the other 95% being treated for varying degrees of decreased performance, lameness, stiffness or pain. These numbers would seem to indicate that CFI is used in our practice more for cervical arthropathy than for cervical myelopathy.

Unpublished observations by the first author (M.J.M.) in horses with cervical arthropathy is that they often display what has been described as an ‘inappropriate’ spookiness to the surrounding environment. In other words, the affected horse suddenly chooses to react to an object that has been present in the horse’s environment for an extended period of time, acting like it is brand new and never been there before causing the horse to spook. Personal communication with a colleague recently undergoing surgical management of cervical stenosis revealed unexplained feelings of anxiety and apprehension. Such findings would be difficult to document in the horse. However, over the years of treating cervical arthropathy one of the most common observations of the owners and trainers post treatment is that the horse is no longer ‘spooky’ and is willing to work in a more normal fashion.

The diagnosis and treatment of cervical issues in the horse can represent a significant challenge to the equine...

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Manufacturer's address

1ORTHOGEN Veterinary GmbH; Düsseldorf, Germany

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