Epiglottic entrapment in horses

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Safia Barakzai discusses the clinical signs in equines with this disorder and treatments to release the epiglottic cartilage from its entrapping membrane

THE normal equine epiglottic cartilage is leaf-shaped and ventrally curved, with prominent blood vessels visible on its pharyngeal surface and serrated lateral margins (Figure 1).

It is connected to the lateral aspect of the arytenoid cartilages by the fleshy aryepiglottic folds, which attach to its caudolateral margins. The aryepiglottic folds are continuous with the sub-epiglottic mucosal folds (glosso-epiglottic folds) that cover the hyoepiglotticus muscles and ligaments, and extend ventrally to the base of the tongue.

Epiglottic entrapment (Figure 2) occurs when the epiglottic cartilage becomes entrapped within the subepiglottic (glosso-epiglottic) and aryepiglottic mucosal folds. Epiglottic hypoplasia predisposes horses to this disorder, but epiglottic entrapment is also frequently seen in horses with normal epiglottic size and appearance. Other abnormalities, such as subepiglottic cysts (Figure 3) and epiglottitis, also predispose horses to developing epiglottic entrapment. The disorder is also often seen in horses with a cleft palate or palatal hypoplasia.

Clinical signs

Horses with epiglottic entrapment may be asymptomatic or demonstrate a range of clinical signs. During fast work, affected horses may make a vibrant expiratory noise caused by “ballooning” and vibration of the entrapping mucosal fold during expiration. Occasionally, how-ever, affected horses make both inspiratory and expiratory noises or may make no abnormal noise.

In some cases, epiglottal entrapment does not appear to impair ventilation, even at maximal exercise, and some horses with epiglottic entrapment are reported to have successful racing careers (Saulez et al, 2009).

The variation of presenting signs in horses with this disorder may be related to individual variation in the tightness of the entrapping fold of mucosa.

Occasionally, epiglottic entrapment may occur only during exercise. It is then known as “exercise-induced” epiglottic entrapment, and requires dynamic endoscopy (on a tread-mill or ridden where images are recorded in a backpack worn by the rider) to make a diagnosis.

Abnormalities seen during endoscopic examination of affected horses include loss of the normal prominent vasculature and serrated lateral margins of the epiglottis, which are replaced by the smooth mucosa of the entrapping membrane (Figure 2).

In chronic entrapment, inflammation and ulceration of the entrapping fold of mucosa is common. Secondary dorsal displacement of the soft pal-ate commonly occurs during exercise in horses with epiglottic entrapment, but also may hap-pen when the horse is resting.

Some horses experience intermittent epiglottic entrapment and may, therefore, appear normal when resting endoscopy is performed on a single occasion. Prompting the horse to swallow several times during the course of an endoscopic examination is imperative to try to recreate the entrapment. Swallowing may also allow identification of subepiglottic cysts, which can be intermittently located under the soft palate.

Treatment

Several methods are available for releasing the epiglottic cartilage from its entrapping membranes. Axial division is preferable to resection of the folds (unless the folds are very thickened) because excessive resection of the folds is thought to be associated with subsequent development of permanent dorsal displacement of the soft palate.

The entrapping fold can be divided under general anaesthesia by sharp dissection per-formed via a laryngotomy incision. Alternatively, it can be axially sectioned using a hooked bistoury passed per nasum, which should be performed under general anaesthesia to eliminate the risk of the horse swallowing during the procedure and causing severe damage to its soft palate.

The bistoury can also be used per os in standing sedated horses, after topical anaesthesia of the epiglottic area. An endoscopically guided per os technique has been described by Perkins et al, 2007.

Alternatively, axial division of the fold using transendoscopic laser surgery may be performed (Figure 4

), but great care should be taken not to damage the underlying epiglottic cartilage with the laser (Figure 5) – severe chondritis and irreparable epiglottic deformity may result.

If the entrapping membranes are extremely thickened and ulcerated, axial sectioning may not be sufficient to release the epiglottic cartilage, and such cases require resection of these tissues via a laryngotomy incision.

Pre-existing epiglottic deformities may be revealed after release of a chronic epiglottic entrapment, where the tight entrapping mucosa has caused remodelling and/or ulceration of the underlying cartilage.

References and further reading

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