

In their article on the treatment of epiglottal entrapment, Russell and Wainscott (VR August 11, 2007, vol. 161, pp.187-189) state that the cause is unknown. I beg to disagree. A hypothesis that I first began to develop 31 years ago and which crystallized in 2000, explains its occurrence. The great majority of epiglottal entrapments are caused by the horse's bit (Cook 1989, 2000, 2007a, b, Cook and Strasser 2003). Cleft soft palate, recurrent laryngeal neuropathy, subepiglottic cyst, or epiglottal hypoplasia may account for a few instances but the causative mechanism is the same.

The horse is a nose-breathing animal that, in the wild, runs with its mouth closed and lips sealed. When running, the oral cavity and the oropharynx are potential cavities only. They contain no air. In the racehorse, however, the bit acts like a surgical retractor on the lips. A jockey, in rating his horse, often stretches the lips to twice their normal length. The presence of one or more bits, a tongue-tie and rein traction breaks the lip seal and permits air into the oropharynx. Coupled with bit-induced movement of the tongue, this leads to elevation of the soft palate and breaks what should be an airtight seal at the ostium intrapharyngium (Cook 1981). The end point of a cascade of bit-induced effects can be dorsal displacement of the soft palate. But although epiglottal entrapment does occur in conjunction with dorsal displacement of the soft palate (DDSP), more often it occurs independently. Simple elevation of the soft palate is enough, without displacement. Nevertheless, the bit is also the most common cause of DDSP (Cook 2002, 2005). The basic

mechanism is the same, i.e. an abnormal communication, at exercise, between nasopharynx and oropharynx.

A slack ostium intrapharyngium exposes the abundant and pliable mucosa in the oropharynx to powerful suction forces generated in the nasopharynx on inspiration at fast exercise. As a result, mucous membrane in the vallecula of the oropharynx and ventral face of the epiglottis gets pulled in the direction of the lungs. At first the mucosal creep is temporary but, with persistent exposure to suction forces, it forms a permanent hood over the dorsal surface of the epiglottis.

The bit is a cause of over 40 different diseases, 22 being exclusive to the bit (Cook 2007a). For example, in addition to epiglottal entrapment and DDSP, it is a major cause of asphyxia-induced pulmonary oedema ('bleeding') and the headshaking syndrome (Cook & Strasser 2003). Use of the bit causes over 100 behavioral aberrations in the ridden horse. Most of the signs are triggered by pain or the fear of pain (Cook 2007b).

A bit does not control a horse. On the contrary, it is often the cause of complete loss of control. Bit pain triggers flight, fight and freeze responses. The cross-under bitless bridle, developed 10 years ago, provides painless, safer and more effective communication for all disciplines (Cook 2007b). Cruelty is defined as the infliction of avoidable pain (Morton 1983). As bit pain is now avoidable, the bit has to be reclassified as cruel and incompatible with the physiology of exercise in the horse (Cook et al 2006).

Regarding the prevention of bit-induced diseases and behavioral problems, the cross-under bitless bridle is not currently permitted for racing in the UK. However, the Veterinary Committee of the Jockey Club has recently recommended a six-month trial of the bridle for training purposes. A number of flat and steeplechase trainers in the UK are now collecting evidence in order that the committee can review the HRA ruling.

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