Clinical Commentary

The diagnosis and treatment of progressive ethmoidal haematomas

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The Case Report by Smith and Perkins (2009) describes a horse that presented with a progressive ethmoidal haematoma (PEH), which invaded several of the compartments within the paranasal sinus complex and showed lesions in both left and right sides, and in the paranasal sinuses and nasal cavity. The use of cross-sectional imaging in the form of computed tomography facilitated accurate assessment of the extent of the lesions, which appeared to comprise components resembling both sinus cysts and progressive ethmoidal haematomas. This enabled careful planning of the treatment and a surgical approach from 3 different angles that enabled access to both paranasal and nasal components of the lesions. Despite this, the horse underwent re-examination after 4 weeks when a recurrence of the lesions and a secondary mycosis was discovered, necessitating revision surgery, which appeared to achieve remission, at least up until 15 months post operatively.

In man, cross-sectional imaging is standard practice for assessment of intracranial lesions (Yuca et al. 2006), following head trauma and to enable preoperative planning during any complicated maxillofacial procedures. Both computed tomography and magnetic resonance imaging are being used increasingly for imaging structures in the equine head as the availability of these modalities increases (Arencibia et al. 2000; Hopp et al. 2003; Noller et al. 2007). Despite the high cost and practical restrictions, it appears logical that these will become standard practice when imaging space-occupying lesions in the head of the horse in years to come. The limitations for 2D radiography to image lesions of the head and dental lesions are widely reported (Gibbs and Lane 1987; Lane et al. 1987a), even with the advantage of computed and digital radiographs. Particularly attractive is the possibility to image, any lesion such as a PEH suspected to invade the paranasal sinuses in 3 dimensions using reconstructed 3D images. This is particularly valid where there is suspected invasion into the sphenoidal and palatine sinuses, as seen by Smith and Perkins (2009), which lie very close to the cribiform plate.

Despite a surgical approach involving trephinations of both left maxillary and right frontal sinuses and a left frontonasal flap, and fenestration of the concha to retrieve nasal components of the lesion, recurrence was diagnosed after only 4 weeks, suggesting that complete excision was not achieved during the initial surgery. This is typical for such lesions (Greet 1992) and the difficult surgical access to the origin of the lesion remains challenging. The recurrence following medical treatments (Mariott et al. 1999) remains similar and surgical access to this region remains challenging even with the benefits of cross sectional imaging and minimally invasive surgical techniques, that are standard in man, and that were employed to effect here.

The aetiology of PEH lesions remains unclear (Tremaine et al. 1999), and although histologically they show chronic inflammatory changes, there has been little progress in understanding their aetiopathogenesis in recent years. Unusually in the case described here, a lesion more consistent histologically with a sinus cyst was diagnosed concurrently. It has been suggested that the 2 lesions share a common aetiology (Lane et al. 1987b), but histopathological evidence to support this remains elusive. In man mucocoeles which resemble sinus cysts occur sporadically (Kanagalingam et al. 2009) including following maxillofacial surgery.

The inaccessible site and high incidence of recurrence reported following treatment of these lesions by all methods warrants further investigation into their aetiopathogenesis and the subsequent development of more effective noninvasive medical techniques for treatment. As the dawn of the age of 3D imaging and endoscopic sinus surgery, which is standard technique in man (Di Pasquale et al. 2006; Toros et al. 2007), arrives in equine practice, it may be possible to diagnose these lesions much earlier in their progression, which would facilitate less technically complicated treatments that may offer a better outcome.
References


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