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## **12<sup>th</sup> WEVA Congress 2011**

### **Treatment of equine sinusitis**

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#### **Surgical approaches to sinuses**

Surgical treatment of sinusitis is often performed in the standing horse (lower cost, no anaesthesia risk; and less intra-operative haemorrhage - due to the higher position of the horse's head). A common surgical approach in non-responsive chronic sinusitis cases is the use a large naso-frontal flap that is hinged medially in the standing or anaesthetised horse. This approach allows good access to the caudal maxillary sinus and thus to the ventral conchal bulla (caudo-dorsal aspect of the ventral conchal sinus), that can be opened (with minimal haemorrhage usually) and the adjacent rostral maxillary also explored, by resecting the maxillary septum if necessary. A search is made for inspissated pus which is removed if present. In older horses that have shorter reserve crowns and thus better access to the ventral conchal sinus, a maxillary sinusotomy can be performed (Fig 1) and indeed this approach (with a smaller osteotomy site) can be used with care in most horses.

Taking care not to damage any alveoli or the infraorbital canal, the septum between the caudal and rostral maxillary sinuses is removed if necessary and the latter cleared of any exudate that is present. It is worthwhile vigorously irrigating all of these sinuses during surgery – as often large hidden pieces of inspissated pus will be flushed out. Much of this lavage fluid should flow down the ipsilateral nasal cavity through the normal sino-nasal drainage opening. If this does not occur – this indicates obstructed sino-nasal drainage and the creation of a surgical fistula between the dorsal aspect of the ventral concha and the nasal cavity should be considered. This fistulation will cause much epistaxis that will need to be temporarily controlled by inserting a long (e.g. 5 metres) and wide bandage up the affected nasal cavity and into the affected sinus – where it is packed tightly in concertina fashion

The nasofrontal or maxillary bone flap is secured back in place using one or two steel sutures in pre-drilled holes in the bones. The subcutaneous tissues are closed in a continuous manner and the skin wound is stapled – sometimes leaving a small (1cm) dependent area of wound open for drainage. Post-operative lavage is performed for 1 week and absence of malodour a good indicator of success. Cases that do not respond to surgical treatment should be thoroughly re-evaluated for evidence of dental disease and other underlying causes of sinusitis.

#### **Primary sinusitis**

Acute cases of primary sinusitis will usually clear spontaneously and antibiotics may help some early cases. In more chronic cases where there may be compromised sinus drainage, surgical lavage of an empyematous sinus can be performed under sedation and local anaesthesia, using a trephine opening into the frontal sinus and if this caudal group of sinuses are not inflamed, by opening into the ventral conchal bulla. An indwelling catheter (>1 metre) with side-holes is inserted about 5 cm into the frontal sinus and sutured in place. Sinus lavage should be performed 2-3 times daily for about 1 week using 5 litres of lukewarm saline, very dilute povidine iodine or chlorhexidine solution.

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If the pus becomes inspissated in the sinuses, especially in the ventral conchal sinus (and/or rostral maxillary sinus), the sinusitis will not respond to lavage and will later require surgical removal under standing sedation or general anaesthesia.

#### **Dental sinusitis**

On occasions it will not be possible to determine definitively if a cheek tooth is infected; because the risks of removing a normal cheek tooth are very great, such cases should be treated as having primary sinusitis. If a diagnosis of apical infection is confirmed, removal of the affected teeth is indicated, preferably by oral extraction- where general anaesthesia is avoided and additionally, post-extraction sequelae are much less common than with repulsion. The evaluation and extraction of an infected cheek tooth, by any technique, are specialised procedures and should only be undertaken by experienced personnel with adequate instrumentation and facilities. Endodontic treatment may be possible in some cases.

#### **Sinus cysts**

The cysts should be surgically removed using an appropriate bone flap – sometimes the thinned sinus wall can be opened with just a scalpel. As much as possible of the cyst wall should be removed, but often parts will remain attached to intra-sinus structures - these residual parts are of no concern. The sinuses should be lavaged intra-operatively and a lavage system placed for post-operative lavage. There is an excellent prognosis after sinus cyst surgery.

#### **Sinus neoplasia**

Except for well defined fibro-osseous tumours, they are difficult to treat because it is impossible to ensure removal of all parts of the tumour from the very irregular crevices and diverticulae of the sinuses. Many of the epithelial tumours are highly malignant and deeply invade the normal surrounding structures. Consequently, the prognosis is generally very poor with sinus neoplasms.

#### **Mycotic Sinusitis**

Local irrigation of the affected sinus with the above named (nasal mycosis) agents including enilconazole or natamycin using an indwelling catheter is usually successful. If this treatment is not successful – a careful re-assessment of the case should be made for the presence of underlying lesions

