

Equine Sinusitis

The most common clinical sign associated with sinus disease in horses is a unilateral (one sided) nasal discharge which is frequently foul smelling. Other less common signs include facial swelling, fever and signs of dental disease such as quidding or tooth fractures.

Causes of sinusitis

1. **Primary sinusitis:** Infection of the sinuses as a result of failure to clear an upper respiratory tract infection or virus, the lining of the sinus becomes thickened and drainage of infected fluid is obstructed. Older horses with PPID (Cushing's disease) may be at an increased risk of developing primary sinusitis due to immunosuppression.
2. **Dental sinusitis:** The roots of three of the upper cheek teeth are located within the maxillary sinuses. Infection of these tooth roots as a result of tooth fractures, dental caries or blood-borne infection may result in secondary sinusitis.
3. **Sinus cysts or tumours.** Sinus cysts contain a mucoid discharge and may cause facial swelling or distortion whilst tumours are more common in older horses.

Investigation

To make a diagnosis of sinusitis and investigate its cause a number of procedures may be carried out. These include careful dental examination, upper respiratory tract endoscopy to visualize parts of the upper respiratory tract and radiography (x-ray) to identify fluid or masses in the sinuses and examine the tooth roots. In some cases advanced imaging such as CT scanning is required. Once an initial diagnosis has been made some horses will undergo "sinoscopy" during which a small hole (trephine) is made through the frontal bone on the horse's head whilst the horse is sedated to allow the endoscope to be passed directly into the sinuses so that the lining and interior of the sinus can be examined directly using a video camera. A catheter placed into the trephine hole can subsequently be used to flush fluid through the sinuses as part of the treatment regime.



Sinoscopy being performed at Chine House through a small hole in the frontal bone

Treatment

Treatment with antibiotics alone is often unsuccessful, especially where there is poor or absent sinus drainage or an ongoing source of infection such as an infected tooth root.

Tooth Extraction

Dental sinusitis usually requires extraction of the infected tooth. If possible the tooth is extracted orally i.e. from the mouth since this approach has the lowest complication rate. In some cases it is not possible to remove the tooth orally due to pre-existing fracture of the tooth, fragmentation of the tooth during attempted extraction or age of the horse (young horses have very long teeth with strong ligamentous attachments). When oral extraction is not possible the tooth can be “repulsed” from the sinus into the mouth using a dental punch and mallet or removed through a bone flap. These techniques have a higher complication rate (up to 50% of horses will develop a complication of some description) because they cause more trauma to the tooth and its socket and are therefore avoided unless absolutely necessary.

Sinus bone flap

Bone flaps may be performed to allow removal of a mass or cyst, to assist with dental extraction and/or to remove solid concretions of pus from deep within the sinuses which cannot be accessed via a trephine hole.

Complications

Treatment of sinus disease can result in a number of potential post-operative complications.

1. **Patient non-compliance:** Many horses will tolerate oral tooth extraction and sinus trephines or bone flap surgery under standing sedation. However some horses require a general anesthetic.
2. **Infection of the surgical site:** Because the contents of the sinuses is infected and often includes solid concretions of pus there is always some contamination of the surgery site. Infection of the skin is common and is managed with antibiotic therapy and /or suture removal. Occasionally a small section of the bone flap becomes infected and may need to be removed.
3. **Dental complications:** Horses that have dental repulsions may develop sequestra (fragments of the dental socket bone) as a result of trauma to the bone, that need to be removed at a later date.
4. **Recurrence of sinusitis:** This occurs in approximately 25% of cases and may be due to loss of sinus drainage, a small fragment of bone or pus remaining or a secondary infection. **It is normal for all sinus cases to have some nasal discharge for up to 6 weeks post surgery.**
5. **Cosmetic blemish:** The majority of cases will have no discernible abnormality following a sinus trephine or bone flap, however, some horses have bone defects, bony reactions at the suture lines between bones or white hairs at the site of surgery.

If you think your horse may be suffering from sinusitis please contact the practice to arrange an examination. We have the latest diagnostic equipment including digital x-ray machines and endoscopes. Our surgeons have carried out many sinus surgery procedures and dental extractions over the years with great success.