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Sinusitis – Not just a snotty nose

What is Sinusitis

The sinuses are air filled cavities within the head of the horse. There are 6 pairs of paranasal sinuses. They are part of the respiratory system and are lined by the same respiratory epithelium as the rest of the respiratory tract. The sinuses also accommodate some of the molar tooth roots (upper cheek teeth).

Many of the sinuses communicate with one another; mucus produced by the sinus lining flows through the sinuses and drains into the nasal passages. Any impairment to drainage results in stagnation of the mucus in the sinus cavities, and this will then overflow and drain into the nasal cavity and will present as a nasal discharge (snotty nose).

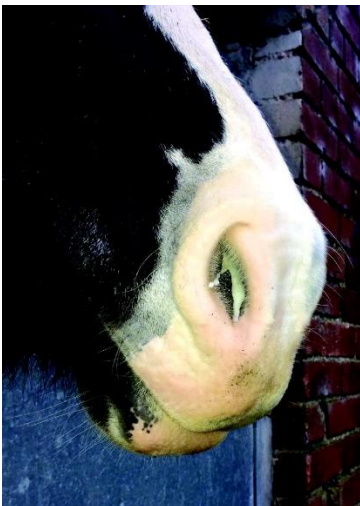
The term sinusitis refers to inflammation of one or more of the paranasal sinuses in the horses head. It is unusual for sinusitis to be bilateral (on both sides) so a nasal discharge associated with sinusitis is usually present in only one nostril, on the same side as the affected sinus.

Many cases of primary sinusitis occur due to an infection of the horses' upper respiratory tract. Many of these cases will resolve without treatment, or with medical treatment including antibiotics.

Secondary sinusitis can also occur. The roots of the last 4 upper cheek teeth are contained within the maxillary sinus, and so dental problems such as a tooth root infection can also result in an inflamed sinus and nasal discharge. Cysts, tumours and injury to the head are less common causes of secondary sinusitis.

What are the symptoms of sinusitis?

The most common sign of sinusitis is a one sided nasal discharge. This can be profuse or slight, clear or purulent (thick and discoloured), and often is foul smelling. In some cases there may be swelling of the face, and swelling of the lymph nodes (glands) in the throat region



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How do we treat sinusitis?

Some cases will resolve spontaneously, or with antibiotics. If the nasal discharge or odour does not respond to treatment, or recurs after a period of time, then further investigation will be required. It is important not to delay further investigation because a long standing sinusitis can be difficult to treat. We might also suggest testing older horses for Cushing's disease (PPID), as horses with Cushing's disease frequently have recurring infections.

Examination of the nasal cavity using an endoscope allows us to inspect the sinus drainage site and nasal passages. It is not possible to visualise the sinuses directly from the nasal passages as the opening into the sinuses are too small, but we can make a small hole in the bone directly over the sinus (called a trephine hole), and examine the inside of the sinus directly using an endoscope. This is done under standing sedation.

Sinuses are normally air filled, but if there is free fluid in the sinuses, as occurs in primary sinusitis, this can be seen on an x-ray (radiograph) as a fluid line. X-rays are also taken of the cheek teeth, as tooth root infection can cause secondary sinusitis.

A combination of radiography and endoscopy usually provides a definitive diagnosis.

The aim of treatment is to restore the horse's sinus drainage. A trephine hole into the sinus allows the sinus to be flushed with large volumes of saline, which will physically clear the stagnant mucus. Flushing is then performed daily for several days via a catheter, which is left in the trephine hole. The saline drains out through the nasal cavity, confirming that normal sinus drainage has been restored. Once the catheter is removed, the trephine hole heals, normally with a good cosmetic result.

If the sinusitis is secondary to a tooth root abscess (apical infection), the affected tooth may need to be removed, in addition to treatment outlined above

Case report

George was recently successfully treated in our clinic for sinusitis. George is a 12 year old horse used mainly for hacking. He had a right sided nasal discharge which was yellow and foul smelling. The nasal discharge went after a course of antibiotics. It recurred however after 2 months, so his owner brought him to the clinic at Somerford Park for further investigations. We performed an endoscopic examination, and X-rayed his head. The X-ray showed a fluid line in the frontal sinus (see image 1 below).



An x-ray of the head showing a fluid line in the sinus (red arrow).

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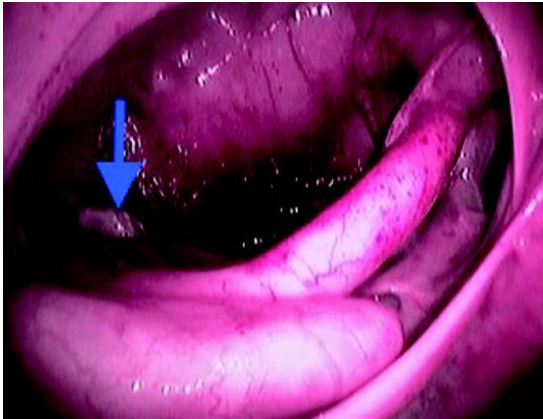
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On endoscopic examination of the nasal passages discharge could be seen draining from the sinus. We then performed a trephine (10mm hole) directly into the frontal sinus. A large amount of liquid pus was flushed out via a catheter, and then a large piece of inspissated pus was found in the sinus (see image 2 below).



A view of the sinus throughout the trephine hole showing inspissated pus within the sinus (blue arrow).

Inspissated pus is pus which becomes thickened and solid by a process of dehydration over a period of time, this was preventing the normal drainage of mucus from the sinus. We removed the solid material and then flushed the sinus daily for 5 days with saline through an indwelling catheter. The nasal discharge resolved, and there has been no recurrence of the nasal discharge. George is back to enjoying his hacks, and no longer has 'just a snotty nose'.

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