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Summary:

Sinusitis

Sinusitis refers to inflammation or infection (acute or chronic) of one or more of the paranasal sinuses. It is classified as either **primary** when the infection is invading the lining of the sinus itself as a result of upper respiratory tract infection or secondary, when the infection occurs as a result of another primary cause, such as dental disease (last four cheek teeth mostly), bone fractures, granulomatous lesions, sinus cyst, or a neoplasia.

Signs and Symptoms

The most common sign of sinusitis (either primary or secondary) are:

- Nasal discharge, that may or may not contain pus, blood, or an odor
- Unilateral facial swelling or deformity
- Labored breathing
- Noisy breathing
- Dull percussion of the sinuses
- Coughing
- Foul smelling breath
- Subcutaneous emphysema, or air trapped under the skin
- Eye discharge
- Bulging or protruding eyeball
- Head shaking



Diagnostics

- **Clinical signs**
- **Complete physical and oral examination**
- **Endoscopy:** can help characterize where the nasal discharge is originating from the nasomaxillary opening.
- **Radiographs:** (X-rays) of the skull may reveal fluid lines, sinus cysts, solid masses, or lytic or proliferative bone associated with dental disease or neoplasia
- **Biopsies, aspiration, or a sinoscopy:** may be helpful to obtain a sample of fluid for cytologic examination, bacterial culture and antibiotic sensitivity testing.

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Treatment:

The goal of the treatment of sinusitis is to remove the discharge in order to restore your horse's normal drainage system. This can be achieved through:

- 1- Medication: Primary paranasal sinusitis usually resolves with systemic antibiotic therapy and lavage. The exception is when the exudate becomes inspissated and obstructs appropriate flow through the nasal passages. In cases of secondary sinusitis, the primary disease must be treated in order to fully resolve the sinusitis.
- 2- Surgery and irrigation if needed regardless of whether the sinusitis is primary or secondary, the goal of surgery is removing any exudate and providing additional drainage, and irrigation and flushing if necessary. The available surgical options involve



- **Trephination:** means removal of a small circle piece of bone (~10 mm) and insertion of a catheter into the hole and maintained for multiple days to facilitate regular irrigation with antibiotic solution and flushing of the affected sinus. When there is complete eradication of infection the catheter is then removed and the opening left to heal on its own.
- **Sinusotomy:** If the sinusitis persists or if good drainage is not able to be established, more aggressive surgical management may be required. A sinusotomy, or bone flap is created under general anesthesia into the affected sinus (Figure 6). The sinus may be cleaned and appropriate drainage into the nasal passage can be established. Bleeding can be a complication of sinus surgery, but this depends on the exact cause of the sinusitis. The sinus may be packed to help reduce bleeding, and this pressure packing is typically removed a few days after surgery through the nostril with the horse standing.

In cases of secondary sinusitis caused by dental disease, the affected tooth should be removed. The tooth alveolus is typically flushed and packed with a non-absorbable material after removal.

7-Epistaxis (bleeding from nostril)

It means bleeding from the nose that could be primary or secondary from either one nostril or both. The mucous membrane of nasal cavity is severely rich in blood supply

Primary or essential epistaxis: usually occur without any apparent lesion of nasal cavity but the only visible feature is the congestion of blood vessels from violent activity such as racing in ware weather or due to hemophilia or leukemia.

Secondary or symptomatically epistaxis: As results of other lesion such as traumatic origin, ulcerative tumors or even Glander.

In dog it may be the result of the presence of *Linguatula taenioides*, irritating dust getting into nasal cavity, foreign body or parasites.



Diagnosis

Should be distinguish from both

Haemoptysis (from lung) coughing up blood: blood is foamy and from both nostril and mouth.

Haematemesis (from stomach) from both nose and mouth, blood is clotted and blackish, like coffee-granules.

1-Rhino-laryngeoscop.

2-Mallein test can be considered when Glander is suspected.

Treatment

1-Cold application on face.

2-Injection of hot water, solution of alum or tannic into nasal cavity.

3- Keeping animal quiet and raising the head.

4-If bleeding is very profuse and from one side, packing of the nasal cavity with gauze.

5-When bleeding is from both nostrils, tracheostomy is performed first then packing nasal cavity with gauze.

6-giving normal saline.

7-rest of animal.

8-Other affections include: foreign bodies in the nostril and paralysis of false nostril.