

# Disorders of the Guttural Pouch

A PowerPage Presented By



The guttural pouches (GP) are diverticula of the eustachian tubes and are a unique anatomic feature of the horse with, as of yet, undefined function. A variety of disorders can affect the GP; because of the vital structures that are associated with the GP, pronounced clinical signs can be observed. This PowerPage will briefly discuss the anatomy of the GP and then review some of the more common disorders related to this structure including GP tympany, GP mycosis and GP empyema.

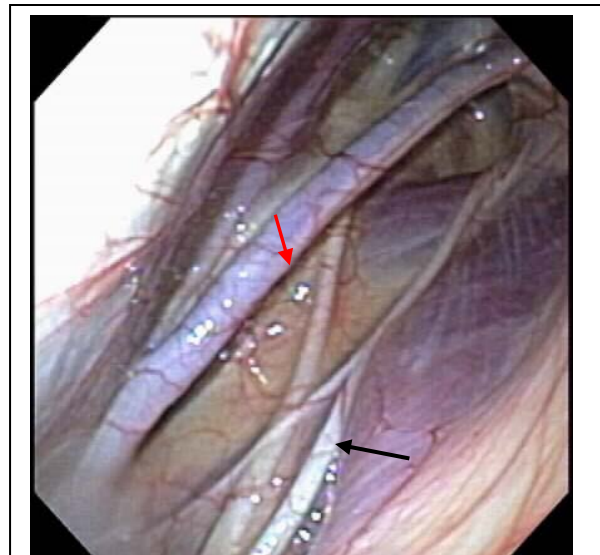
## Key Points

- The GP is a unique anatomic feature of the horse and contains several vital vascular and neural structures
- Diseases of the GP are infrequent but, when they occur, can result in significant clinical signs
- GP tympany is typically congenital and results in a non-painful air-filled swelling in the throat-latch region of young foals/horses
- GP empyema results in the accumulation of purulent exudate secondary to upper respiratory infections, especially *Streptococcus equi* (strangles) infections
- GP mycosis is associated with fungal plaques that cause either severe hemorrhage and/or neurologic signs such as dysphagia

## Anatomic considerations

The **GP communicates with the pharynx** and can be visualized endoscopically through the pharyngeal orifice of the horse. In the average-size horse, the GP will hold approximately 300-500 mLs and is divided into the lateral and medial pouches by the stylohyoid bone. The medial pouch is larger than the lateral pouch. Vital structures associated with the GP include:

- Neural Structures –
  - **Cranial nerves IX, X, XI, and XII**
  - **Sympathetic trunk**
- Vascular Structures –
  - **Internal carotid**
  - **External carotid**
  - **Maxillary arteries**



Endoscopic image of the medial compartment of the left GP. Note the internal carotid artery (red arrow) and cranial nerves (black arrow).

## Guttural Pouch Tympany

**Congenital** GP tympany is typically observed in foals and is characterized by **non-painful distension of the GP with air**. This distension of the GP produces noticeable external swelling of the throat-latch region of the foal. GP tympany may be unilateral or bilateral

### Pathogenesis:

- The cause of GP tympany is unknown but potentially may be related to an abnormal or excessive mucosal flap at the pharyngeal orifice. The flap may serve as a one-way valve allowing air to get trapped in the GP

### Clinical Signs:

- Soft, non-painful swelling in the throat-latch region of a foal. If distension is significant and/or bilateral, respiratory stertor, respiratory difficulty and occasional dysphagia and associated aspiration pneumonia may be observed

### Diagnosis:

- Based on signalment, clinical signs and radiographic evidence of an air-filled GP

### Treatment:

- Surgical correction is typically necessary. For unilateral tympany, fenestration of the median septum that separates the two GPs will alleviate the problem. If bilateral, resection or modification of the pharyngeal orifice may be necessary

### Prognosis:

- Uncomplicated cases have a good prognosis. Horses with dysphagia or aspiration pneumonia have a fair to guarded prognosis

## Guttural Pouch Empyema

GP empyema refers to the accumulation of purulent exudate within the GP and is not an uncommon problem in the horse

### Pathogenesis:

- GP empyema usually results secondary to an upper respiratory infection, typically *Streptococcus equi* or *zooepidemicus*. Alternatively, empyema can result from rupture of a retropharyngeal lymph node into the pouch. The horse may have difficulty in clearing the accumulation of bacteria and exudates from this location

### Clinical Signs:

- Nasal discharge, regional lymph node enlargement and (less commonly) dysphagia may be observed. Nasal discharge may continue even after apparent resolution of a respiratory infection. Inspissation of exudate may occur with chronic infections resulting in firm masses called **chondroids**

### Diagnosis:

- Based on history of upper respiratory tract infection, physical exam findings and clinical signs.  
**Confirmed via endoscopy (exudate in GP) or radiography (fluid line in GP)**

### Treatment:

- Medical therapy includes aggressive lavage of the GP involved and administration of local and systemic antimicrobials. This may have to be repeated frequently for several days until the bulk of the exudate is removed. If medical therapy fails, surgical lavage and drainage may be necessary, particularly if chondroids are present. Due to the highly contagious nature of Strangles, one should use caution and maintain isolation protocols if *S. equi* is suspected



**Prognosis:**

- Good to excellent

**Guttural Pouch Mycosis**

GP mycosis is characterized by the development of fungal plaques in the GP that result in clinical signs due to the involvement of vascular and/or neural structures. The plaques are typically present on the dorsal aspect of the guttural pouch

**Pathogenesis:**

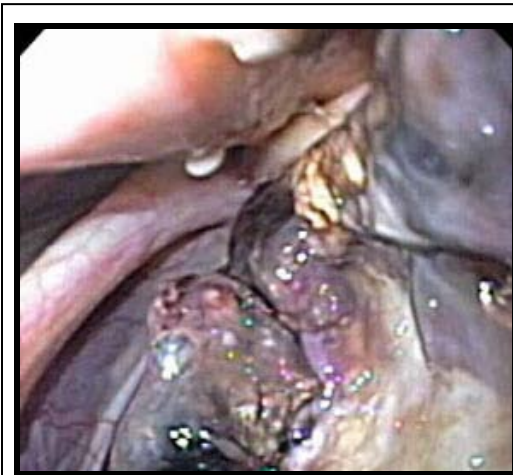
- The exact reason why some horses develop GP mycosis is unknown. *Aspergillus* appears to be a commonly associated pathogen with GP mycosis. Erosion of the wall of one of the arteries by fungal plaques within the GP **results in epistaxis while dysphagia results from damage to the cranial nerves** within the GP

**Clinical Signs:**

- Depend on the structures involved. If one of the arteries is involved, hemorrhage is the characteristic clinical sign. Epistaxis, at times severe, is observed in episodes. If severe enough, the **hemorrhage can be fatal**. Alternatively, dysphagia, Horner's syndrome or facial nerve paralysis may be observed if neural structures are involved

**Diagnosis:**

- Based on clinical signs and confirmed via endoscopy. If hemorrhage or a blood clot is present at the guttural pouch orifice within the pharynx, further exploration into the GP is not necessary and may result in disruption of the clot and further hemorrhage. If neurologic deficits are observed, plaques within the GP may be visualized



Endoscopic image of a horse with GP mycosis. Note the dark fungal plaques on the dorsal aspect of the GP.

**Treatment:**

- Spontaneous resolution of GP mycosis may occur but therapeutic intervention may facilitate recovery, especially when epistaxis or dysphagia are observed. Surgical occlusion of the affected arteries appears to be an effective therapy, even if only neurologic signs are present. Administration of anti-fungal medications can be attempted but is less efficacious

**Prognosis:**

- Guarded to fair. The presence of dysphagia may worsen the prognosis as it may take a prolonged time for the neural structures to recover

