

# Guttural Pouch Empyema in Horse- An Overview

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## INTRODUCTION

- Empyema is the accumulation of purulent material in one or both guttural pouches.
- Initially, the purulent material is liquid, although it is usually viscid, but over time it becomes inspissated and is kneaded into ovoid masses called chondroids (cottage cheese app.). Chondroids occur in approximately 20% of horses with guttural pouch empyema.

## ETIOLOGY

- Most often to secondary to other disease.
- URT infections, especially caused by *Streptococcus equi*.
- Retropharyngeal abscess.
- Trauma for example: stylohyoid fracture (Impaired drainage of the pouch through the pharyngeal opening of the eustachian tube).

## EPIDEMIOLOGY-

- All ages of horses.
- All equids, including asses and donkeys.
- The case-fatality rate is approximately 10%, with one-third of horses having complete resolution of the disease.

- Guttural pouch empyema occurs in approximately 7% of horses with strangles.

## PATHOGENESIS

Secondary to strangle it is usually attributable to the rupture of abscessed retropharyngeal lymph nodes into the medial compartment than continued drainage of the abscesses. Protective mechanisms of the guttural pouch, allowing bacterial colonization, influx of neutrophils and accumulation of purulent material. Swelling of the mucosa, especially around the opening to the pharynx, impairs drainage and facilitates fluid accumulation in the pouch than causes distension and mechanical interference with swallowing and breathing. Inflammation of the guttural pouch mucosa may involve the nerves that lie beneath it and result in neuritis with subsequent pharyngeal and laryngeal dysfunction and dysphagia.

## CLINICAL FINDINGS

- Purulent nasal discharge.
- Swelling of the area caudal to mandible and ventral to the ear.
- Carriage of the head with the nose elevated above its usual position.

- Dysphagia and other cranial nerve dysfunction.
- Respiratory stertor
- Bilateral disease, and the resultant neuritis and mechanical interference with swallowing and breathing, may cause discharge of feed material from the nostrils, dysphagia and respiratory stertor.

### DIAGNOSTIC CONFIRMATION

- History and clinical example: chronic nasal (mucopurulent and serosanguinous) discharge, pharyngeal distortion and dyspnoea and cranial nerve dysfunction.
- Bacterial culture - *S. equi* (30% of cases) and *S. zooepidemicus* (40% of cases).
- Pharyngeal endoscopy (stream of mucopurulent exudates from pharyngeal orifice of guttural pouch.). Endoscopic examination of the pharynx reveals drainage of purulent material from the pharyngeal opening of the Eustachian tube of the affected side. The guttural pouch contains a variable quantity of purulent material, although in severe cases the quantity of fluid may be sufficient to prevent adequate examination of the pouch with an endoscope.
- Radiographic examinations - presence of radiodense material in the guttural pouch, sometimes the presence of an air-gas interface (fluid line) within the pouch and distension of the pouch with impingement into the nasopharynx. Chondroids are evident as multiple circular radiodensities.

### DIFFERENTIAL DIAGNOSIS

- Guttural pouch tympany
- Guttural pouch mycosis
- Sinusitis
- Recurrent airway obstruction (heaves)
- Pneumonia
- Esophageal obstruction
- Infection by *Mycobacterium avium* complex organisms causes nasal discharge and granulomatous lesions in the guttural pouch.

### TREATMENT

- The principles of treatment are removal of the purulent material, eradication of infection, reduction of inflammation, relief of respiratory distress, and provision of nutritional support in severely affected horses.
- Systemic antimicrobial administration. The antibiotic of choice is penicillin G (procaine penicillin G, 20,000 IU/kg intramuscularly every 12 hours for 5-7 days), although a combination of sulfonamide and trimethoprim (15-30 mg/kg orally every 12 hours for 5-7 days)
- Topical application of antimicrobials into the guttural pouch is probably ineffective because they do not penetrate the infected soft tissues of the pouch and retropharyngeal area.
- NSAIDs such as flunixin meglumine (1 mg/kg intravenously or orally every 12 hours) or phenylbutazone (2.2 mg/kg intravenously or orally every 12 hours) are used to reduce inflammation and pain.