Guttural pouch

Affection and treatment of Guttural Pouch

Anatomy

- Present only in equines

•GP – large mucous sac which is ventral diverticulum of the Eustachian tube located in cranial cavity

•It is covered laterally by the Pterygoid muscles, parotid and mandibular glands.

•The floor lies mainly on the pharynx and beginning of the Oesophagus.

•It connects the pharynx through the pharyngeal orifice of the Eustachian tube.

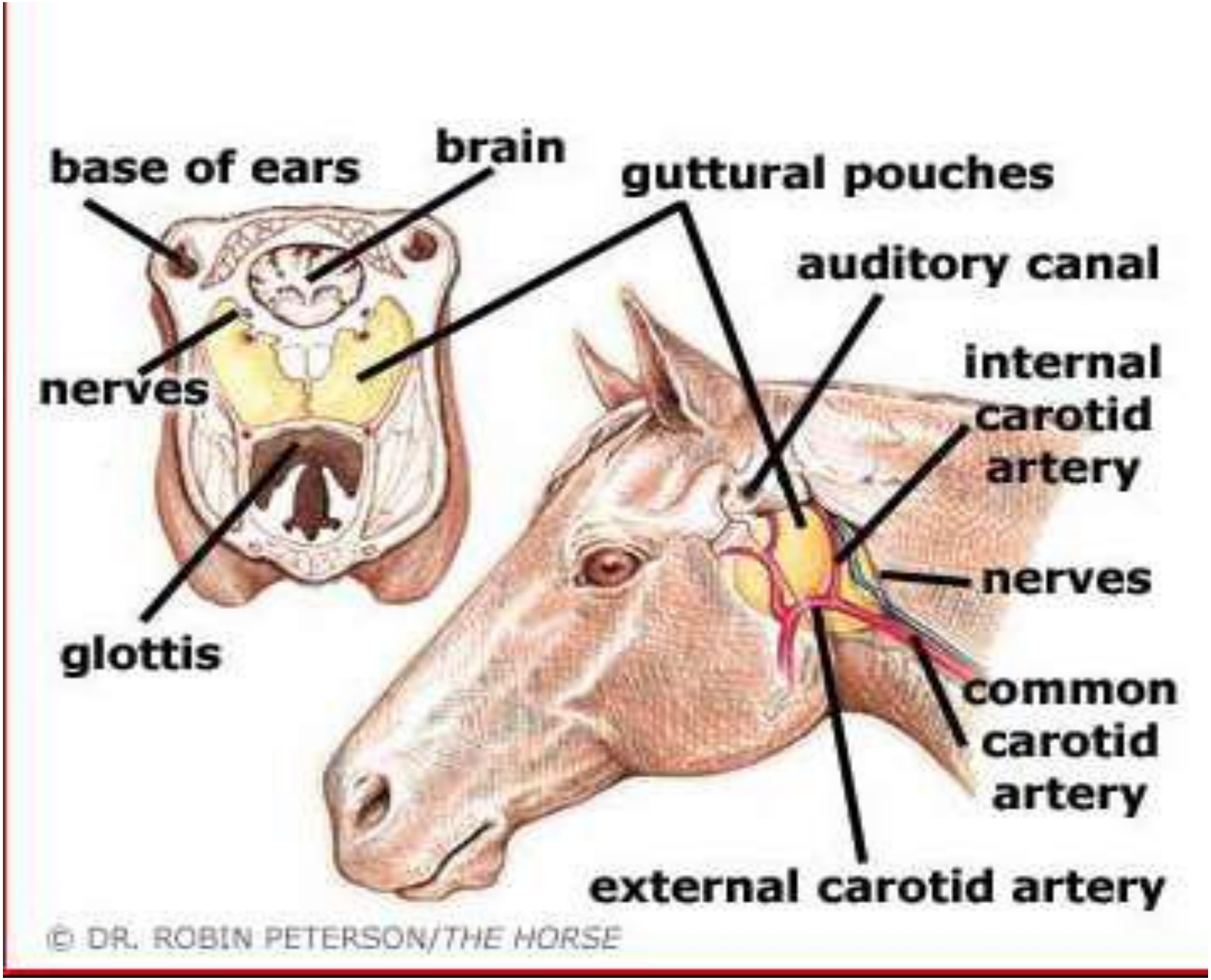
•The medial retropharyngeal lymph node lies between the pharynx and ventral wall of the pouches.

Medial Compartment:

- **Cranial nerves IX, X, XI, XII**.
- Continuation of the sympathetic trunk beyond the cranial cervical ganglion.
- **Internal carotid artery.**

Lateral Compartment:

- **Cranial nerve VII** - limited contact with the dorsal part of the compartment.
- **External carotid artery** crosses the lateral wall of the lateral compartment in its approach (as maxillary artery) to the atlas canal.
- The **external maxillary vein** is also visible.


base of ears
brain
guttural pouches
auditory canal
internal carotid artery
nerves
nerves
glottis
common carotid artery
external carotid artery
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Empyema

• Empyema of the guttural pouch refers to the **accumulation of exudates**

within a guttural pouch empyema should be considered whenever the

patient is affected with chronic mucopurulent nasal discharges.

Etiology:

– **Most often secondary to other disease process**.

– Respiratory tract infection caused by viral agents (Influenza), bacterial agents

(strangle) or combination of both.

– URT infections, especially caused by streptococcus equi

– Retropharyngeal abscess

– Trauma for example: stylohyoid fracture

Clinical signs

• Distention of guttural pouch forming a **palpable, fluctuating visible swelling behind the jaw**

• Head is kept lowered during feeding or drinking

• Massive distension will interfere with swallowing and breathing (**Dysphagia and dyspnoea**). Respiratory noise

• Pressure on the distended pouch may cause a **mucopurulent nasal discharge**

• Chronic cases may develop **chondroids** (inspissated pus with the appearance of cottage cheese)

• Pharyngeal paralysis and dysphagia may be complication of an advanced disease process.

Diagnosis

• Based on history and clinical example: chronic nasal (mucopurulent and serosanginous)

discharge, pharyngeal distortion and dyspnoea and cranial nerve dysfunction.

• **Pharyngeal endoscopy** (stream of mucopurulent exudates from pharyngeal orifice of

guttural pouch.)

• Direct endoscopic examination of guttural pouch

• **Centesis and lavage of the pouch:** Catheterization of guttural pouch may be accomplished

either through the pharyngeal orifice or by percutaneous technique

Diagnosis

Radiographic examination

• A standing lateral view of skull is suggested to obtain shape and size

• Radiographic signs that suggests guttural pouch disease includes **distension of the pouch and**

observation of fluid line within it.

• Contrast radiograph may facilitate identification of the involved pouch and may contribute to the

appreciation of space occupying lesions

Treatment

- In patient with acute GPE
- Systemic antimicrobial therapy may enhance the resolution of condition within

10-14 days.

- If systemic therapy is ineffective or the case of chronic GPE

1. The pouch may be treated locally by utilizing an **indwelling catheter.**
2. Daily lavage of the pouch with 500ml of antiseptic or antimicrobial solution should be

accomplished until nasal discharge oblates.

3. A variety of solution can be used including 5-10% povidone iodine or a dilute solution of

antimicrobials based on sensitivity test.

4. Concurrent systemic antimicrobials therapy is useful

Treatment

- When infection are refractory to systemic and local therapy, ventral drainage of the pouch should be established Surgically.
- In patients with inspissations or chondroids of guttural pouch- medical management be ineffective until the **incriminated** materials is removed from the pouch
- Once the pouch has been entered surgically, a spoon can be used to remove the foreign materials followed by copious lavage.
- Failure to remove all the semisolid materials from the pouch will predispose to reoccurrence of the condition

Prognosis

1. Favorable with early and vigorous treatment
2. In case of chondroids- respond favorably
3. In advanced case – gurded.

Tympanities or emphysema

• Characterized by abnormal filling and distension of the GP with air.

• Usually observed in young cells, supporting its congenital occurance

and appears to affect female greater than male

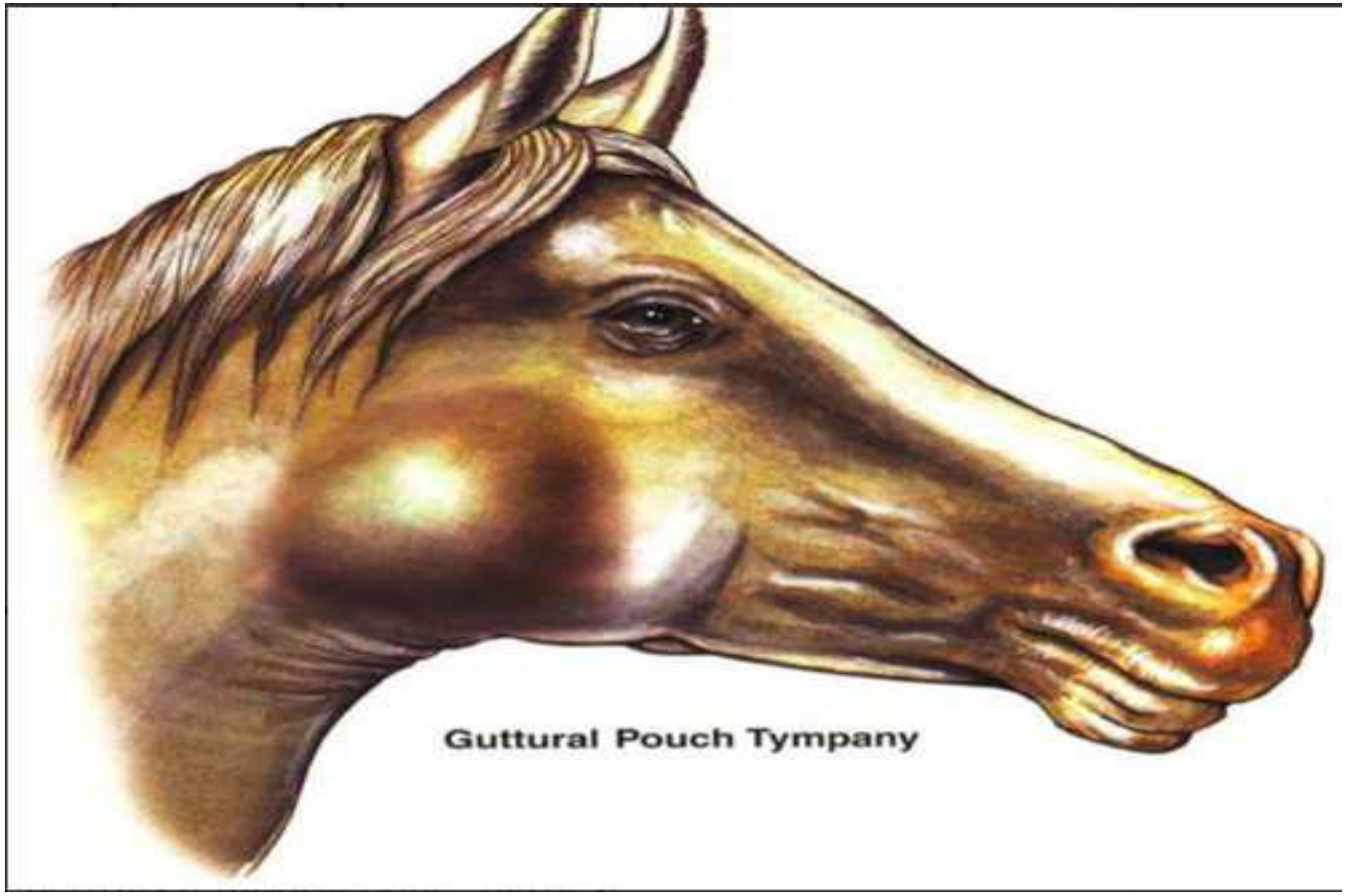
• Most often occurs as unilateral but sometimes may be bilateral.

Etiology:

• The air apparently enters the pouches during expiration or when the

animal is swallowing due to the formation of gas.

Guttural pouch tympany



Clinical signs

- Diffuse painless, elastic, tympanic swelling in the parotid region
- Unilateral distension of the pouch enough pressure on the

tissue to produce buldging in the area of the guttural pouch.

- In this case, if needle is inserted in previously distended pouch and air is removed – the swelling subsides on both sides.

Surgical entry and drainage of guttural pouch

Indication:

– Empyema

– Emphysema

– Food material in the pouch

Anesthesia and control

– Horse is controlled in lateral recumbency with the affected side up.

– Anesthesia is achieved either by-

• Local infiltration of local analgesics with tranquilizers or sedatives

• or general anesthetic agent.

Surgical approaches

Three surgical approaches for guttural pouch-

1. Viborg's triangle approach: for drainage of the guttural pouch in cases of empyema and for treatment of tympanities.

2. Hyovertebrotomy approach: provides access through the dorsolateral aspect of the guttural pouch and is used for removal of chondroids and inspissated pus; treatment

of guttural pouch mycosis.

3. Ventral or white house approach: provides the best surgical exposure to the dorsal aspect of the guttural pouch for procedures such as

1. Ligating the internal carotid artery within the pouch in the treatment of guttural pouch mycosis

associated with epistaxis

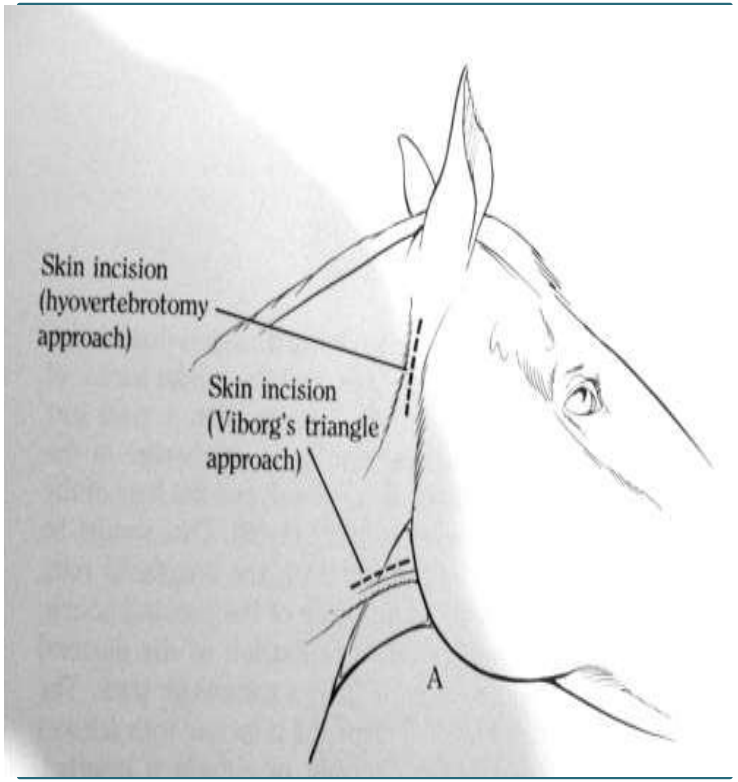
2. Tympanities

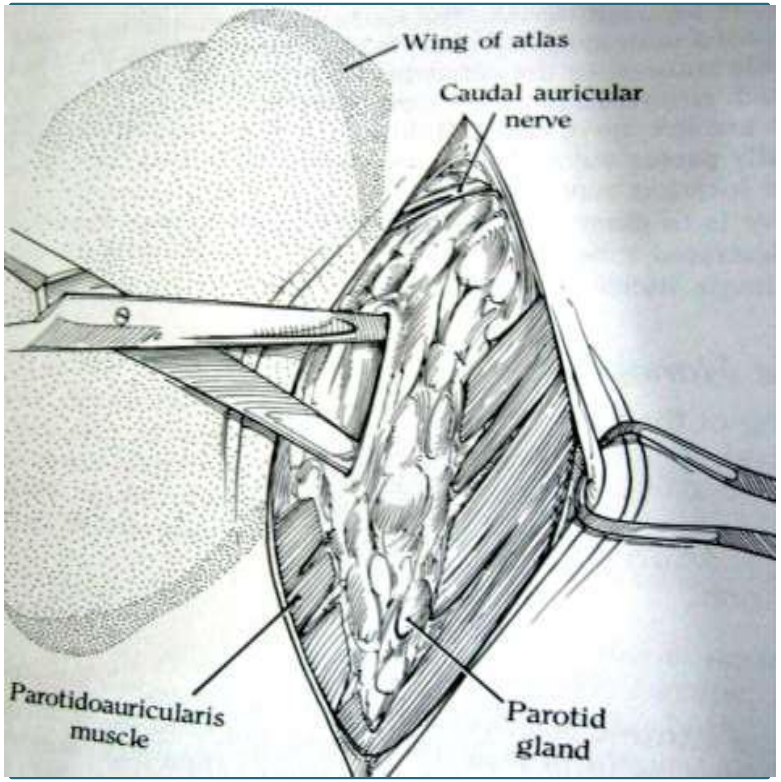
3. Empyema

Site of operation

1. Two centimeter anterior to and parallel with the anterior border

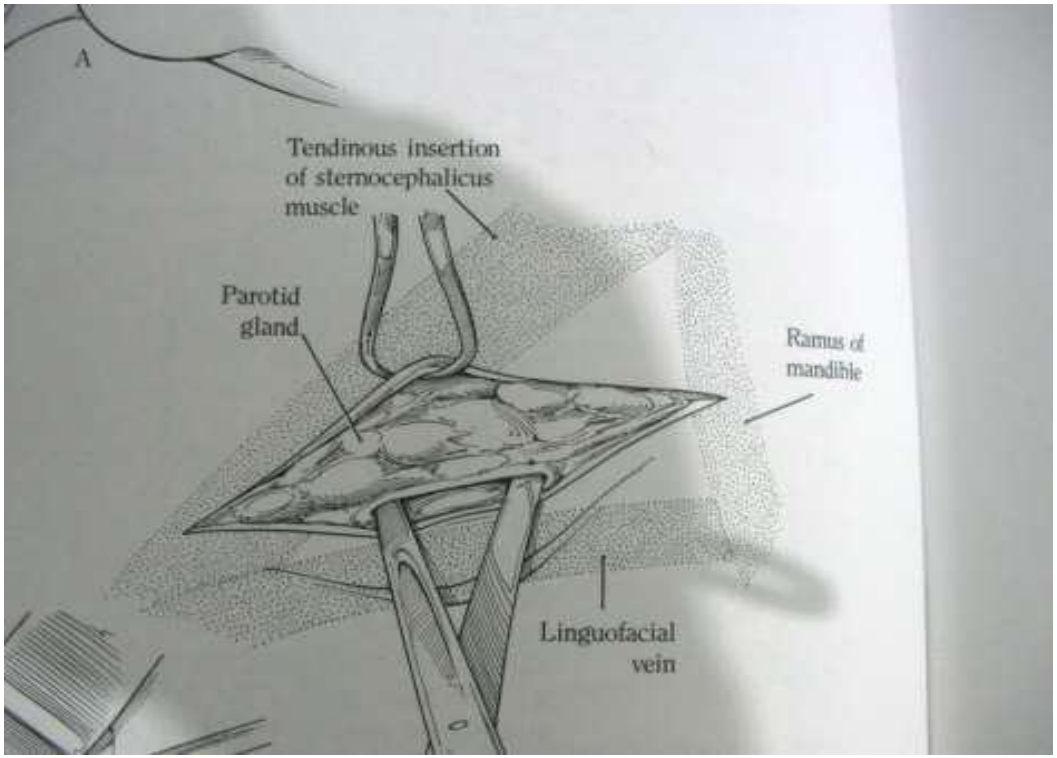
of the wing of the atlas (for **hyovertebrotomy**).





Viborg's triangle

- **Rostral**- caudal margin (ramus) of the mandible
- **Ventral-** linguofacial vein
- **Dorsocaudal**- tendon of insertion of sternocephalicus muscles



Surgical technique (hyovertebrotomy)

1. For removal of inspissated mass or chondroids or food materials

An incision of about 3-4 inches in length is made in skin and subcutaneous at 2cm anterior to and parallel with anterior border of the wing of atlas

↓

The facial attachment of the parotid gland to the wing of atlas is bluntly separated and reflected cranially.

↓

Guttural pouch is recognized just medial to the bifurcation of the carotid artery

↓

An incision is made through the lateral wall of guttural pouch

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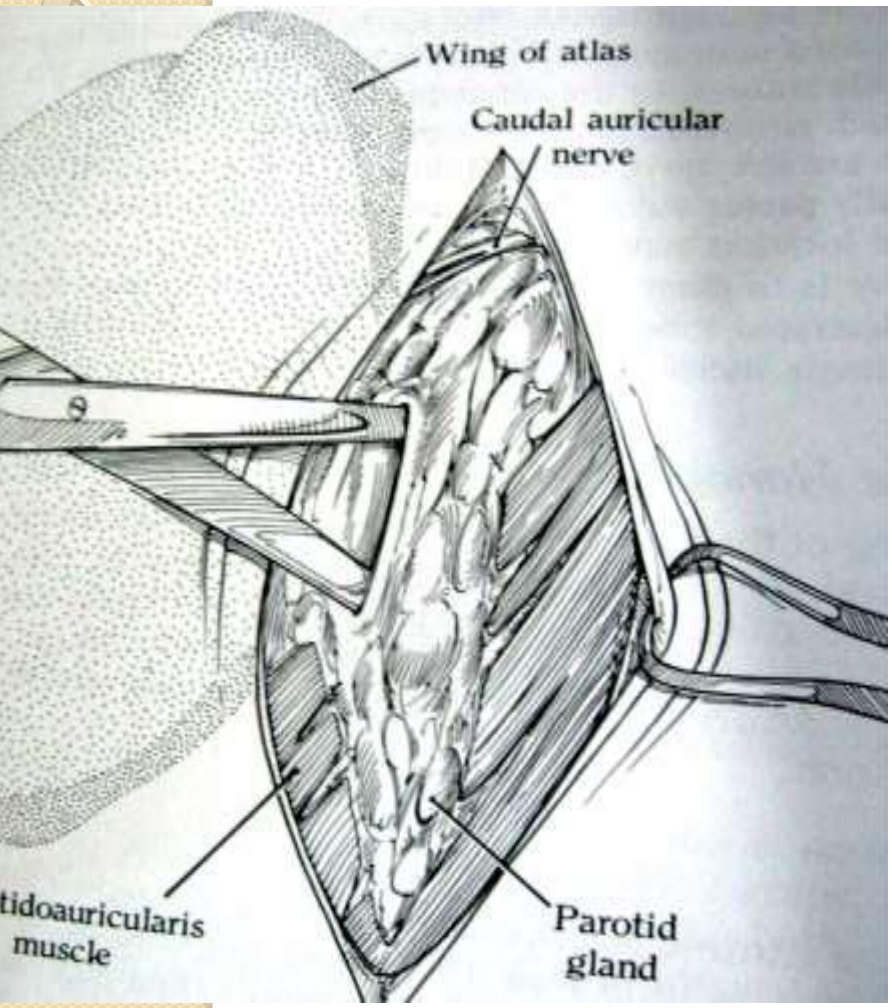
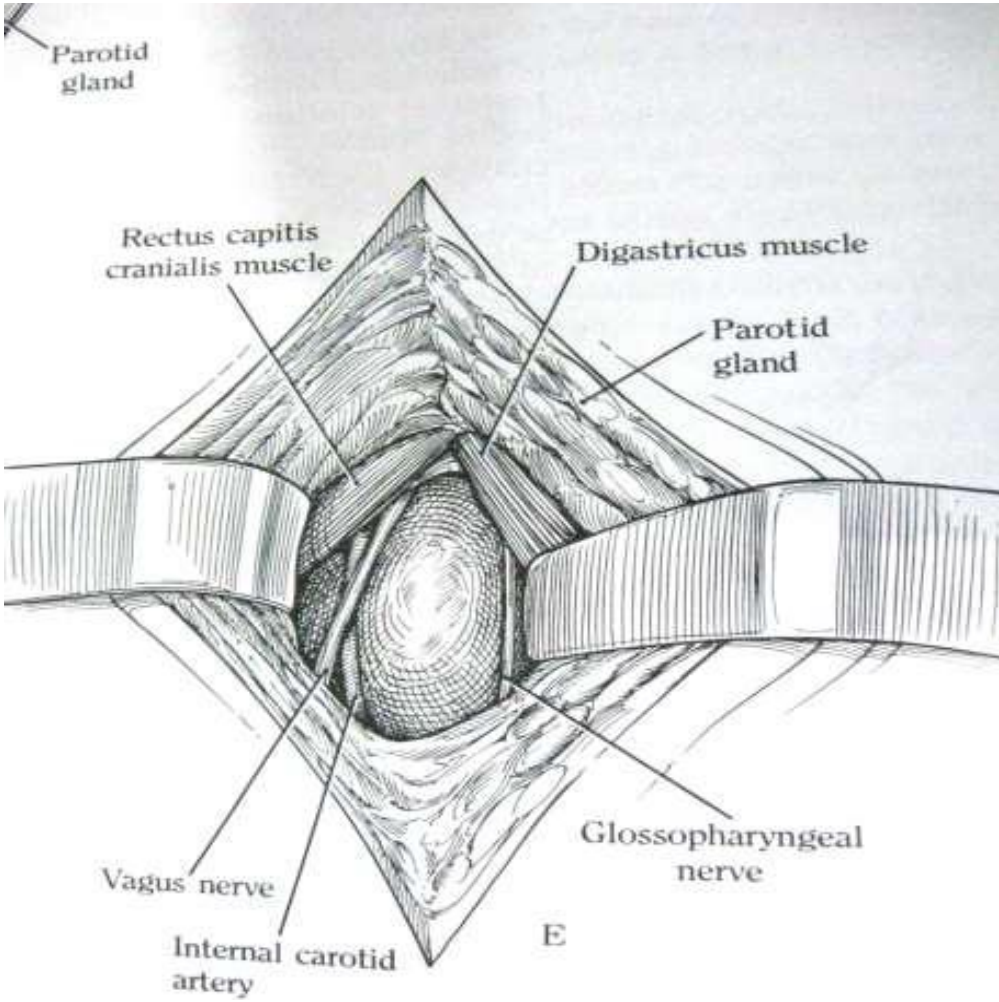
The incision is enlarged with the help of index finger sufficient to remove inspissated pus or food particles.

↓

Incision are not sutured and allowed to heal as an open wound.


Wing of atlas
Caudal auricular nerve
tidoauricularis muscle
Parotid gland


Parotid gland
Rectus capitis cranialis muscle
Digastricus muscle
Parotid gland
Glossopharyngeal nerve
Vagus nerve
Internal carotid artery
E

2. For drainage of pus and air removal from the guttural pouch (viborg's triangle)

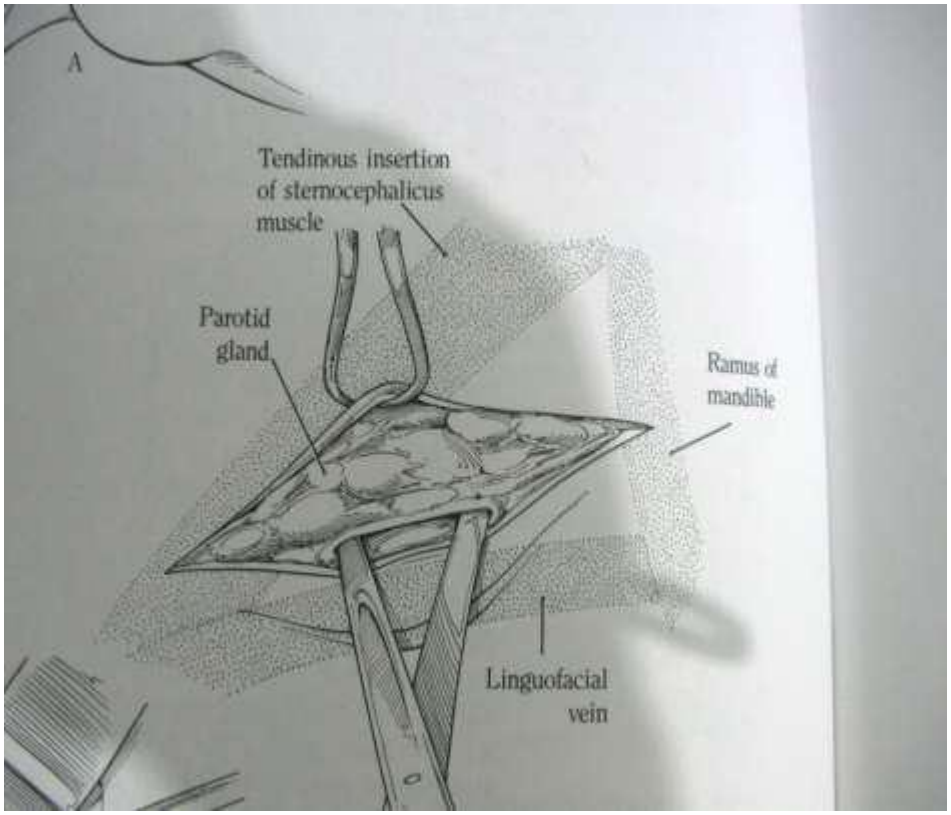
An incision of about 4cm in length is made at the viborg's triangle through skin and fascia.

Blunt dissection with the help of finger or blunt instruments is done between the externalmaxillary vein and ventral muscle of the neck (i.e omohyoides and sternohyoides)

The guttural pouch is identified and

Stab incision is made through the ventral wall of the pouch

The opening in the pouch may be enlarged to provide drainage


A
Tendinous insertion of sternocephalicus muscle
Parotid gland
Ramus of mandible
Linguofacial vein

Post-operative care

- Full course of antibiotics should be given
- Anti tetanus serum should be given immediately after

surgery

- Analgesics
- Animal should be given soft diet
- The pouch and the wound should be irrigated with non

irritant antiseptics solution daily until healing.

Thanks