

Affections of the nasal cavity

1-Epistaxis

Epistaxis means bleeding from the nose. The distinguishing characteristic feature of epistaxis is the pure blood from the nostrils. If the blood is frothy it is usually from the lungs, and if it contains food particles it is probably from the stomach.

Etiology:

Trauma: As caused by a kick, a foreign body, parasite, stomach tube, laryngoscope or rhinoscope.

Tumours:

Of the nasal cavity as angioma, carcinoma or melano sarcoma may be a cause of epistaxis.

During the course of some infectious diseases as glanders, anthrax, infectious anaemia & canine distemper.

Poisoning:

As noticed in cases of mercury or phosphorous poisoning.

Severe rise in blood pressure:

As in cases of racing horses or horses used for hunting.

Treatment:

Vary and depend upon the source and severity of the haemorrhage:

Removal of the cause.

Raising the head of the animal.

Application of ice bags on the fore head.

When the bleeding is severe it is necessary to pack one nostril with a long piece of gauze to which a long enough suture material is attached. The gauze is packed by means of a stomach tube. The pack is removed after 24 hours. If the bleeding is bilateral it is necessary to perform tracheotomy before packing the two nostrils.

Injection of 5 gm of sodium citrate dissolved in 20 ml distilled water intravenously.

2-Parasites of the nasal cavity

Parasites of the nasal cavity in dogs and sheep cause inflammation of the mucous membrane resulting in a purulent discharge from the nostrils. The parasite found in sheep is the larvae of oestrus ovis and that of the dog is the liguatula rhinaria.

Treatment:

Trephining of the nasal cavities and extraction of the parasites.

3- Fracture of the nasal bones

Fracture of the nasal bones and septum nasi are mostly caused by a kick or from injury by barbed wire.

Symptoms:

The presence of injury with bleeding from the nose. The nose is usually deformed. The nostrils become mostly narrow i.e. stenosis of the nasal openings resulting in dyspnea.

Treatment:

Removal of the splinters of bone reached and elevation of the depressed parts. When necessary trephining is made. When there is dyspnea tracheotomy is indicated.

4- Tumours of the nostrils

Nasal tumours are mostly common in horses. One of the most common is the polypoid fibromata which occasionally occur just inside the anterior nares. They may be multiple interfering with breathing and causing a respiratory noise. When bilateral they cause more or less dyspnea. Cavernous angiomas of the septum nasi are rarely found. They tend to be usually ulcerated causing bleeding from the nose which can not be stopped.

Carcinomas and sarcomas of the nose are mostly secondary to tumours of the alveoli, orbital cavity or turbinate bones. They usually cause bleeding from the nose, thickening of the nasal bones and are characterized by severe swelling of the corresponding lymph nodes.

Treatment:

Polypoid fibromata must be removed surgically with the scalpel (total extirpation), or when impossible, with the ecraseur. It may be necessary to incise the nostril to make a space for the operation. Sometimes when there is severe dyspnea it may be necessary to make tracheotomy. Cavernous angiomas of the septum nasi are incurable. Sarcomas and carcinomas are also incurable.

5- Atheroma

A sebaceous cyst found in the false nostril of the horse. It develops between the mucous membrane lining the false nostril deeply and the skin superficially. Atheromas may occur unilaterally or bilaterally. They vary in size from that of a small pigeon egg to as large as a tennis ball. The content vary. It may be watery or thick, oily and gray material.

Symptoms:

The presence of the swelling in the false nostril.

When the atheroma is large, it may interfere with the air flow producing a respiratory nasal noise.

Treatment:

Aspiration of the content is transitory in effect, and the cyst will later again fill up with fluid.

Complete removal of the cyst without its opening. The area of operation is clipped, shaved, and prepped for aseptic surgery. S-shaped skin incision is made through the skin only; this will expose the wall of the cyst. The skin is reflected widely from the cyst by blunt dissection or by fingers until it is completely separated. Then the skin is closed but drainage is established into the false nostril until the skin healed.

Affection of the sinuses

Empyema of the sinuses and sinusitis

Sinusitis means inflammation of the sinuses. Empyema of the sinuses is the purulent inflammation of the sinuses and accumulation of pus in them. The frontal sinus is most commonly affected in cattle and the maxillary sinus in horses.

Etiology:

Purulent catarrh of the respiratory passages as the result of strangles is one of the causes.

One of the most important causes of empyema of the maxillary sinus of horses is the diseases of the teeth (alveolar periostitis and fracture of the teeth). In the course of alveolar periostitis the thin plate of bone which separates the alveolus of the tooth from the maxillary sinus is damaged by means of the purulent discharge so that a communication between the mouth and the sinus is established. Through this passage food particles can pass to the maxillary sinus. Therefore it is very necessary to examine the teeth in every case of empyema of the maxillary sinus.

Fractures of the bone of the face:

In these cases a spicule of bone may fall into the sinus and act as a foreign body.

New growths of the sinuses such as sarcoma and carcinoma are possible causes of pus in the sinuses.

Symptoms:

unilateral swelling of the affected sinus.

Muco-purulent discharge from the nostril of the affected side (very offensive in odour in cases of alveolar periostitis). Discharge sometimes streaked with blood and more copious during and after exercise.

Dull sound in bone percussion, indicating a sinus filled with fluid.

Epiphora on the affected side as a result of pressure induced by the affected sinus on the nasolacrimal duct leading to its stenosis or obstruction.

Sometimes the submaxillary lymph gland is swollen.

In cattle sometimes there is a brain disturbance as a result of pressure exerted by swelling on the calvarium.

Treatment:

Cases of purulent sinusitis successfully treated by penicillin. Under infiltration anaesthesia over the sinus. A skin incision 2 cm long is made and the desired sinus is perforated by means of a drill. Through this

opening inject 30 - 40 ml watery penicillin solution. The injection is repeated daily until the secretion from the nose stops. After about 3 - 5 injections the secretion usually stops.

Empyema of the sinuses, It must be opened again and wined.

Frontal sinus in equine:

Take a line connects the middle parts of the roots of the supraorbital processes and bisect it by another is treated as quickly as possible by trephining of the affected sinus. Then its irrigation with a mild antiseptic as potassium permanganate or H_2O_2 . It is very important to make a counter opening in the nasal cavity for draining the exudate to the outside. The treatment needs usually a long time about 2 months. When the trephine opening becomes narrow as the result of granulation tissue formation vertical median line. Operate in one of the inferior angles.

Suprior maxillary sinus in equine:

About 3 - 4 cm upwards from the lower edge of the facial crest and 2 cm inward.

Inferior maxillary sinus in equine:

About 2 cm inward from the lower end of the facial crest. A circular incision of the skin is made slightly larger than the crown of the trephine machine. The periostium is quartered, scraped and folded under the surrounding tissues. Insert the central pin in the center of the prepared area and work the instrument with contineous rotatory movements until the resistant is overcommmed. The disc of bone is removed from the crown of the trephine machine. The septum between the frontal sinus and nasal cavity is breaked by the finger and also the septum between the inferior and superior maxillary sinus. Irrigation is performed at first by boiled water until it comes clear and then by potassium permingnate 1/1000 or H_2O_2 1 - 4 %.

In cattle:

Postorbital part of the frontal sinus:

4 cm from the posterior edge of the orbital cavity and just dorsal to the temporal canthus.

The medial portion of the frontal sinus :

The opening is posterior to a line passing through the center of the bony orbit and 2 cm from the midline.

The turbinate portion of the frontal sinus:

Can be located by passing the thumb and forefinger up the nasal bones to just posterior to where the bone starts to diverge; here a trephine opening is made.

Maxillary sinus in cattle:

Just dorsal and posterior to facial tubercle.

New growths in the sinuses

Sarcomas, carcinomas and actinomycomas have been found in horses and cattle. Malignant tumours of the frontal sinus occur either primarily or secondary to tumours of the maxillary sinus or the orbital cavity. Carcinomas originate from the epithelium of the mouth cavity (hard palate or the alveoli of teeth). Sarcomas usually originate from the periosteum. These tumours usually infiltrate in the surrounding tissue causing damage to the bones. Sometimes they fill the sinus all together and open to the outside. When they reach the nasal cavity they may cause dyspnea. When they originate from the tooth they loosen it and there will be difficulty in mastication.

Treatment:

Sarcomas and carcinomas are incurable, although they can be removed by trephining, but because of their infiltration in the neighbouring structures, it will be impossible to remove all affected structures. Therefore affected animals can be used for mild work until they die. When there is dyspnea, tracheotomy can be done. Actinomycotic growths of cattle can be treated by iodine injections.

Affections of the larynx

Laryngeal hemiplegia roaring

Characterized by an inspiratory dyspnea due to an inability of the lumen of the larynx to dilate sufficiently during inspiration. The inability of the larynx to dilate results from the relaxation and atrophy i.e. paralysis of the intrinsic muscles of the larynx.

The intrinsic muscles of the larynx are supplied by the recurrent laryngeal nerve, a branch of the vagus (10th cerebral nerve).

The condition affects horses from 3 - 6 years and in 95 % on the left side.

Causes:

The pressure of the aorta when the pulse is strong in young horses during exercise (95 % on the left side).

Injuries from injections.

Pressure from an abscess or tumour along the course of the nerve.

Mechanical pressure from the string during operation.

Respiratory diseases associated by enlargement of the bronchial lymph nodes as infectious bronchitis.

Infectious disease, as a complication of strangles and influenza or as a complication of otitis media and tonsillitis.

Plant poisoning or lead intoxication.

Symptoms:

Whistling sound during inspiration. In slight cases the sound heard well after long exercise. In severe cases the sound can be heard during normal inspiration. In exercise dyspnea may ensue and the animal fall down.

Differential diagnosis:

Respiratory sound similar to those as in cases of roaring can be heard in the following conditions.

Fracture of the nasal or maxillary bone.

Empyema of the sinuses.

Retention cysts of the salivary glands (neck cyst).

Inflammation of the parotid salivary gland (parotiditis).

Oedema of the mucous membrane of the pharynx.

Tumours of the mucous membrane of the pharynx.

Deformity of the tracheal ring.

Fracture or collapse of the tracheal ring.

Guttural pouch infection.

These cases can be differentiated from roaring by:

1. Clinical symptoms.

2. Laryngo-scope.

3. The sound is heard during inspiration and expiration.

In normal condition the left and right arytenoid cartilage should dilate simultaneously and equally and completely exposing the laryngeal opening. In affected cases the arytenoid cartilage has little or no lateral movements during inspiration. Vocal cords appears shorter and vibrated during inspiration.

Treatment:

Many procedures have been attempted to alleviate the condition including:

Ventriculectomy.

Corpectomy.

Ventriculo-corpectomy.

Soft palate resection.

Arytenoidectomy.

Attempts to reconstructing the nerve supply of the intrinsic muscles.

Non of the previous surgical procedures is always successful.

Laryngeal ventriculectomy:

It is the removal of the mucous membrane from the laryngeal succules.

Preoperative technique:

The seat of operation is the ventral aspect of the larynx. The surgical site extend from the 6th tracheal ring anterior to the laryngeal opening and laterally to the masseter muscle. The area should be clipped and shaved and prepared for aseptic operation.

Anaesthesia:

The operation can be done in a standing position using local anaesthesia. Or can be done in recumbant position under local infiltration anaesthesia or narcosis.

Operative technique:

An incision is made through the skin and subcutaneous tissues from the first tracheal ring to the anterior aspect of the larynx.

The sternohyoid and omohyoid muscles are dissected through it.

The cricothyroid notch is palpated and identified as a triangle bounded posteriorly by body of the cricoid cartilage, laterally by the wings of the thyroid cartilage. The notch contains the cricothyroid ligament.

An incision is made in the cricothyroid ligament extending anteriorly to the thyroid cartilage and posteriorly to the cricoid cartilage. The incision is widened by a wound dilator.

A blattenberg burr is inserted into the affected laryngeal saccule and engaged into the mucous membrane of the saccule is relieved through the lateral ventricular opening.

A long forceps is inserted into the sac and clamped the mucous membrane of the saccule between its jaws.

A curved scissor is then passed deep and the mucous membrane of the saccule should excised.

The mucous membrane is placed over the thumb to determine whether enough has been removed.

The ventricle opening can be sutured by 00 catgut or may left without suturing allowing it to granulate closed and permitting the arytenoid cartilage to adhere laterally to the medial face of the thyroid cartilage.

Soft palate may be simply trimmed by a soisser.

When the left side is involved operation was done in this side only. But when the right side is affected both succules are removed.

The cricothyroid ligament is sutured and subcutaneous tissue and skin is sutured.

Tracheostomy is indicated in oedema of the larynx.

Antitetanic serum and antibiotic are indicated for 4 days.