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**REGIONAL SURGERY (SURG 402)**

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**FINAL COMPLETE**

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BEST OF LUCK !!!

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## Affections of Horn

**Horn:** It is the continuation of cornual process of frontal bone. Cavity of horn core is continuing with frontal sinus and the horn core is covered by horn proper that is secreted by coreum at the base.

### Affections of Horn

- a) Avulsion of Horn
- b) Horn Cancer
- c) Fracture of Horn

#### a) Avulsion of Horn

In this condition, the horn proper is separated from horn core. It may be resulted by any traumatic injury.

##### **Treatment:**

- ▶ First challenge is to control the bleeding.
- ▶ Try to control bleeding by applying tourniquet at base horn for half an hour or until there is no bleeding. Usually bleeding stops in half an hour.
- ▶ After that wash this wound with antiseptic like perchloride of mercury and acriflavin (never apply irritant). Then place moist bandage on the horn core.
- ▶ On second day remove this bandage and apply some ointment like sulfonamide or penicillin ointment and then change the bandage on alternate days.
- ▶ If ointment is not available, apply mixture of penicillin and vaseline.
- ▶ After few days there will be appearance of thin horny layer. Then smear the horn with protective layer of tar and the horn will develop in few months.

#### b) Horn Cancer

It is a common condition. In this condition, horn becomes shaky and sometimes, may fall off. There is foul smelling and permanent purulent discharge from nostrils (because of association with frontal sinus) (the foul smelling is very characteristic). If the horn fall off or is amputated, you will find the cauliflower like growth at the base.

##### **Treatment:**

No satisfactory treatment in this condition. If we timely amputate the horn then it may be controlled. For amputation, cornual nerve is desensitized by infiltrating anaesthesia in the ring shape at the base of the horn.

#### c) Fracture of Horn

In the horn fracturing, there are two possibilities.

- a) If there is incomplete fracture of horn involving the distal portion, we can easily fix or immobilize it and there will be healing.
- b) But there is complete fracture and the lower portion of the horn is involved, then it is very difficult to immobilize. So it is better to remove the horn. When there is fracture of horn, there will be blood seepage from nostrils and there are chances of sinusitis (infection of sinus).

##### **Treatment:**

If possible, immobilize the horn otherwise amputate it.

## Affections of Hoof

### (1): Corn

It is the contusion of the area formed between bar and wall of the hoof.

#### Types of corn:

There are four types on the basis of degree of severity of corn.

- a) **Dry corn:**  
There is slight capillary damage. Bluish to reddish area due to echymotic hemorrhages.
- b) **Moist corn:**  
There is accumulation/collection of inflammatory exudates beneath the horny tissue.
- c) **Suppurative corn:**  
If by chance, fissure or crack develops in the hoof, then infection may develop due to entry of microorganisms which ultimately lead to the pus formation.
- d) **Complicated corn:**  
Suppurative or infectious corn may spread infection to the surrounding tissue and then, called complicated corn.

#### Causes:

- ▶ Naturally foot conformation is wrong Over trimming of hoof at heel portion also puts pressure on the seat of corn and leads to corn.
- ▶ Improper shoeing (i.e. too short or too long). In case of too short branches of shoe the tip of seat of corn will be damaged. Similarly in case of too long shoe there will be trapping of some material.

In cattle it occurs when animal walks continuously on hard ground; there will be wear and tear of horny tissue and soft tissue will be exposed.

#### Diagnosis:

Lameness, depends on the degree of severity. Animal walks on toe and check ground surface of the hoof. Strike seat of corn with hammer, sensation of pain by animal confirms corn.

#### Treatment:

In case of dry corn; give rest to the animal, remove shoeing causing trouble for animal. In case of suppurative and complicated corn, first drain the pus and then give an antiseptic foot bath and do antiseptic dressing.

### (2): Sand Cracks

These are fissures / cracks on the wall of the hoof which may extend from the coronet region to the toe region.

Sand cracks are classified in different ways; like

- ▶ On the basis of wall of hoof involved in the cracks (either complete or incomplete)
  - a) Complete cracks
  - b) Incomplete cracks
- ▶ On the basis of wall thickness involved (either superficial or deep tissue involved)
  - i) Superficial cracks
  - ii) Deep cracks

In case of superficial cracks; there will be no lameness while in case of deep cracks, there will be lameness due to pinching of sensitive tissue come inside the cracks during walking.

#### Causes:

Predisposing factors for sand cracks are;

- ▶ Development of thin wall of hoof
- ▶ Excessive rasping of wall of hoof

- ▶ Alternate drying and moist conditions for hoof
- ▶ Improper growth of wall of hoof

**Treatment:**

Two Strategies are used as follows:

**(1): Immobilization of crack:**

Cracks are immobilized by:

- Application of bandage
- Plugging the crack with a piece of wood
- Suturing of the crack
- Making the groove across the crack.

➤ **Suturing:**

This suturing is done with the help of nail. Make groove on both sides of crack and insert nail in it. So that edges become close in apposition. (The pointed nail extended outward is called clunch.)

➤ **Plugging the crack with the piece of wood**

Grasp the hoof from inner side, make a place and then place the wood that will avoid the pressure. It is not so effective.

**(2): Promote the growth of the wall of hoof:**

It grows inch in one month. Stimulate the growth by applying blister on the coronet region.

**Complete Growth of:**

Toe wall takes	9-12 months
Quarter wall takes	6-8 months
Heel wall takes	3-5 month

**(3): Thrush**

It is the degenerative condition of frog (weight-bearing structure of hoof).

**Causes:**

Unhygienic condition, if hoof not clean properly.

In case of thrush, there will be foul smelling, grayish to blackish discharge may come out and in later stages due to entry of flies and maggots, myiasis problem may develop.

**Treatment:**

Give antiseptic foot bath and apply antiseptic dressing. Thrush responds quickly to the treatment.

**(4): Canker**

It is a chronic, hypertrophic, moist pododermatitis. It is a degenerative condition of wall, sole and frog. There is vegetative growth and small papillae formed.

Lameness may be seen in long standing cases of canker.

**Treatment:**

Remove the degenerative portion of the hoof and apply antiseptic dressing after foot bath. Use trisulphate powder ( mixture of copper sulphate, ferric sulphate and zinc sulphate) on the affected portion . Canker respond very slowly (less response) to the treatment.

## Affections of Digestive System

### Choking

Obstruction of esophagus due to swelling of large sized objects. Sometime in cattle buffalo and equine turnips or tomato are swallowed that lodges into the esophagus causing choking. In dogs there is partial choking due to swallowing of sharp objects. Sometime choking is due to stricture (narrowing of esophagus) due to tumour in surrounding area or due to esophagotomy. Choking may be cervical or thoracic.

In case of cervical choking there is lodging of object just behind pharynx in anterior portion of pharynx and in thoracic lodging in between first pair of rib or thoracic inlet.

In horse and other equines the posterior third portion of neck is narrow so mostly thoracic choking. But in cattle and buffalo anterior portion is narrow so mostly cervical choking. In dogs esophagus is usually of uniform lumen.

Clinically animal is unable to take feed and if feed swallowed the swallowed material comes partly from nostrils and if comes out then complete obstruction. Animal shows anxious expressions along with restlessness and there will be cough, vomiting attempts, gulping movements and salivation and sometime animal feel difficulty in breathing due to pressure on trachea.

► In ruminants there is development of head edema due to pressure on jugular vein and tympany may develop due to stoppage of eructation process. In case of ruminants tympany is prominent sign and there is lowering of head and salivation.

► In equines, arcing of neck is the characteristic sign.

► In dog there is anxious expression, salivation and vomiting attempts (differential diagnosis with rabies is important). In horse there is arching of neck and attempt to vomit.

### Diagnosis:

Diagnosis is based on clinical signs. If choking in cervical region you can palpate it.

Probang is used for confirmation. This will push the choke material into the stomach. With the help of stomach tube or probang you can identify the position of choking and also confirm choking (sometime paralysis). If obstruction is partial animal is able to drink water but can not eat. In chronic cases animal will be dehydrated.

In case of dog a test called as meat ball test. We offer a piece of meat to dog. Animal will take it and it suddenly comes out in case of choking. We can also go for radiography.

### Treatment:

Either obstruction is taken out or put into stomach. First try is to treat it with the help of medicine; you try to increase peristaltic movements with help of medicines like pilocarpine, arecoline. But observe if choking is just behind the pharynx; try to take it out with hand or forceps. Second option is to push the choking into stomach by probing. In case of dog and cat you can give apomorphine to induce vomiting. In cattle/equine try to push in stomach by probing or stomach tube. As a last resort go for esophagotomy.

### Stricture of Esophagus

Constriction of esophagus due to constriction of cicatrix contractions. during healing process scar is formed and contraction occurs due to which lumen narrow and decrease in elasticity. It may be due to injury or inflammation of esophagus and most common complication if esophagotomy. It is incurable leading to next condition.

## **Dilatation of Esophagus**

This mostly occurs above stricture of esophagus. It may be uniform or there may be development of diverticulum. When there is development of diverticulum, there will be rupture of muscular coat due to which mucous membrane protrude out and called as esophageocele. Clinically there is accumulation of food material into diverticulum and obstruction. When animal take feed there is regurgitation. If in cervical region we can palpate/feel it. Usually there is no pain in this case as its development is very slow. If put pressure on trachea, there is difficulty in breathing. After the food material passes down the stomach, animal becomes normal. There is progressive debility.

### **Treatment:**

In this case surgery is not successful. Manage condition by offering semi solid food. If there is esophageocele, first of all incise outer epithelium. Repair the muscle layer by suture and then suture the skin.

## **Paralysis of Esophagus**

This condition arises when there is damage to the nerve. There is no tonicity and peristaltic movement in the esophagus. Difficulty in swallowing and swallow food comes from nostrils and mouth. It may be confused with the choking but there is no obstruction and it is confirmed after passing a probing.

### **Treatment:**

No successful treatment for it.

## **Foreign Body in Abomasum**

It occurs in young animals. Usual cause is obstruction of abomasums due to hair balls (phytotrichobezore). Seat of obstruction is pyloric end of abomasum and due to obstruction abomasum becomes impacted with food material.

Clinical signs include acute tympany and there may be fits. For confirmation you go for exploratory laprotomy. Treat with abomasotomy.

## **Left Abomasal Displacement (LAD)**

This occurs in case of cows and buffalos mostly in females. Abomasum moves to left side on the floor of abdomen. Cause is not clear. Its incidence is very low in calves and bulls. Whenever animal is pregnant the abomasum is forcefully moved to left side forward and downward by gravid uterine horn and displaced portion of abomasum is depressed. All the clinical signs are due to this depression. It occurs before few weeks of parturition. After parturition there are no signs. There will be ketonemia, general depression, restlessness, and anorexia for 2-3 days. When rumen is empty animal starts eating. Characteristic symptoms include asymmetry of anterior portion of abdomen particularly on left side when seen behind the animal. Left anteroventral aspect of abdomen may be seen distended. This condition may confuse with acetonemia and traumatic pericarditis.

### **Treatment:**

- Keep animal off feed for 2-3 days so that rumen becomes empty and then manipulate animal by putting on dorsal recumbency. Put pressure on anteroventral aspect of abdomen and abomasum may go to normal position.
- Go for rumenotomy and remove ingesta, it will reduce pressure on abomasum.
- Go for laprotomy on left or right side through flank to replace abomasum in normal position.

## Conditions of Teeth / Jaw

### Brachygnathism

Congenital condition in which upper jaw is long than lower and upper incisors goes beyond the lower ones. When animal close mouth, lower incisors damage the roof of the upper palate and upper teeth will damage lower surface. It is called "Parrot teeth". Mostly seen in horses; not used for breeding.

**Treatment:**

No sure and satisfactory treatment is there. Intermittent rasping of teeth is done. Apply boroglycerine or somogel on the sore part of the mouth.

### Prognathism

It is a congenital disorder of jaw; which is reverse to the brachygnathism. It is also reported in the bulls. There is pig like appearance of the animal so called "Pig Mouth" or "Sow Mouth" or "Undershot".

**Treatment:** Same as in above condition.

### Pravinathism

In this condition, outer border of the table surface of upper cheek teeth and inner border of table surface of lower cheek teeth become so prominent that they overlap just like blades of scissor. So there is no lateral movement of jaw: also called "Scissor Mouth".

**Treatment:**

Rasping of teeth is done.

## Conditions of Mouth and Oral Cavity

### Smooth Mouth

In this condition, table surface of the molar teeth becomes smooth. Normally it is rough.

**Cause:**

It occurs due to excessive wear and tear process of teeth.

In this condition, animal is unable to grind the feed properly. So there is no proper digestion.

**Treatment:**

Animal must be provided with soft diet.

### Supranumerary Teeth

Syn: Extra Teeth

**Teeth Formulae: (Bovine)**

$$\text{Temporary Teeth: } 2 \left[ \begin{array}{ccc} \mathbf{I} & \mathbf{C} & \mathbf{Pm} & \mathbf{M} \\ \mathbf{0} & \mathbf{0} & \mathbf{\frac{3}{3}} & \mathbf{\frac{0}{0}} \end{array} \right] = 20$$

$$\text{Permanent Teeth: } 2 \left[ \begin{array}{ccc} \mathbf{I} & \mathbf{C} & \mathbf{Pm} & \mathbf{M} \\ \mathbf{0} & \mathbf{0} & \mathbf{\frac{3}{3}} & \mathbf{\frac{3}{3}} \end{array} \right] = 32$$

When temporary teeth are replaced by permanent teeth, then supranumerary teeth may erupt.

These supranumerary teeth mostly arise on: incisor and molar dental arcades.

There are no counter teeth of these extra teeth. Due to which, these teeth damage the oral mucosa and cause hinders in the normal mastication process.

Supranumerary teeth develop as a result of:

- (i) ramification of normal teeth
- (ii) on medial side of the normal teeth.

**Treatment:**

- Rasping of the supranumerary teeth
- Teeth extraction: cut the teeth by blocking alveolar nerve

## **Gnathitis**

It is the inflammation of interdental space.

Metal mouth piece or bridal is normally used to restrain/control the animal. Due to its friction, there is inflammation, lesion develop on the interdental space.

Sometime, it may affect the peri-osteum of the mandible. Animal keep its head at one side while mastication due to pain.

**Treatment**

- Give rest to the animal
- Application of ointment having analgesic effect like: lignocaine, boroglycerine, & somogel.
- Feed the animal on soft diet for 1 to 2 weeks.

## **Irregular Molar**

This condition may arise due to less wear and tear process of teeth. Due to this, elongated edges of the table surface of molar teeth formed.

Un-chewed feed is also found inside the cheeks.

This condition mostly seen in donkeys.

**Treatment:**

- Apply mouth gage and do rasping of the molar teeth.

## **Lampas**

Syn: Palatitits

It is a condition of hard palate.

A ridge of inflammation is developed on the surface of the hard palate posterior to the upper incisor. It is a normal physiological process result into formation of inflammation ridge during dental replacement.

Blood rushes where teeth has to erupt, due to this inflammation ridge develop.

In a wrong practice, animal owner or quacks puncture or scratch the ridge with the help of a blade to subside the inflammation and to exclude the fluid. As a result of exfoliation, animal become more prone to infection (This exfoliated area provide best site for entry of pathogens).

**Treatment**

- Inflammatory ridge (palatitits) is automatically resolved itself after 1-2 weeks.
- Give rest to the animal.
- Provide soft diet to the animal.
- Provide intermittent (3-4 times) supply of cold water to the animal to drink– cold therapy
- If ridge has been punctured, then give injection of ATS and treat the condition promptly.

**BEST OF LUCK ----- END OF FINAL COURSE**