

VETERINARY COLLEGE AND RESEARCH INSTITUTE , NAMAKKAL

FIELD VETERINARIAN NOTES



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krenoz

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1. Ruminal lactacidosis

Diagnosis / clinical signs :

Acute stage - anorexia , diarrhea (after 8 hours) , respiratory distress , severe dehydration (due to lack of HCO_3) , drunken gait , **fluid splashing sound** , rumen **pH below 5** , no protozoa .

Chronic stage - laminitis (due to release of histamine by lactic acid) , **hepatic abscess** , fungal ruminitis .

Line of treatment :

- **Evacuation of the ruminal content** by stomach tube
- Supplement of **NaHCO_3** mixed with normal saline in intravenous use only ($0.3 \times \text{base deficit} \times \text{body weight}$)
- **Anti-histamine** : chlorpheniramine maleate (0.025-0.5mg/kg)
- **B-complex** injection to regulate the rumen eco-system
- **Anti-biotic** - to kill the *s. bovis*
- **Oral antacid** - aluminium hydroxide , magnesium oxide, magnesium hydroxide,
(trade name - Gelucil, De-blota ,Bufzone ,Rumibuff , Acibuff)
- **Cud transplantation** - rumen liquor from any animal
Large ruminants : 3-4 litres orally , sheep- 500-1litre orally

Contraindication :

Advice to owner don't allow the animal to drink

In initial stage with respiratory disturb don't give ringer's lactate , after correcting the respiratory distress you can give RL for correcting the bicarbonate deficit .

In ruminal acidosis case , affected animals are look “drunken appearance”



	Dose rate	Availability	Label
NaHCO ₃	Ruminants 1ml/kg		
Chlorpheniramine maleate	Ruminants 0.25-0.5mg/kg		
B-complex	Ruminants Large: Sheep/goat:		
Antibiotics			
Oral antacid			
Cud transplantation			

2. Traumatic Pericarditis

Diagnosis / clinical signs :

First one is jugular vein enlargement , followed by muffled heart sound (fluid filled sound) ,follows congestive heart failure(due to arrest complete filling) , edema in the brisket and submandibular region.

Diagnosis : **1.slope test** – make the animal to walk on the slope area . If the animal is walk very slowly , that indicate animal having some pain in the thorax – positive for TP .

2.pole test – keep the pole under the chest region, suddenly rise the pole by the help of the attendant . If the case is positive animal should evinced the pain.

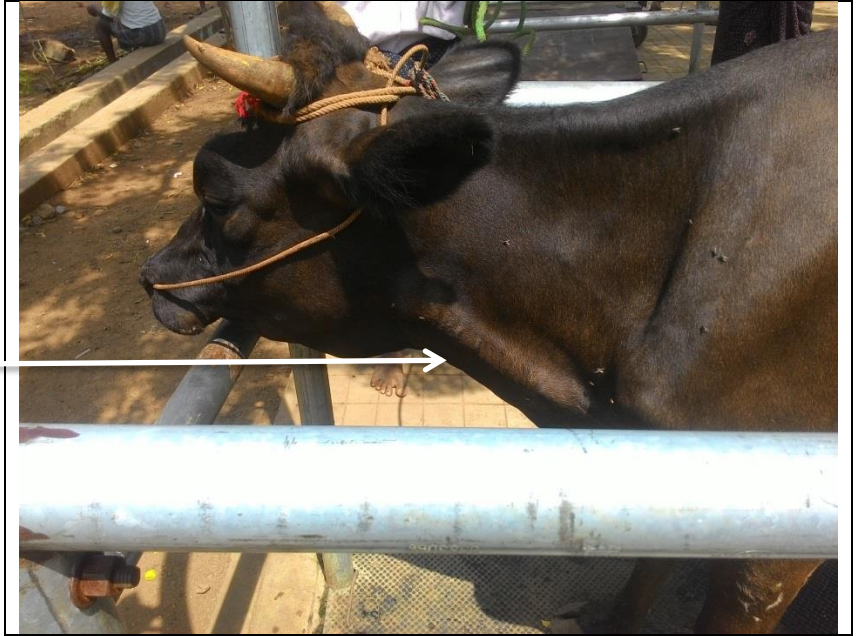
3. positive venous stasis

4. pericardiocentesis

Treatment : No specific treatment .

This case is going to die(grave) .

Enlargement of jugular vein



3. Snake envenomation

Clinical signs :

swelling at the biting area , necrosis , dilatation of pupils , **epistaxis**, muscular weakness, paralysis, swallowing paralysis , fang mark .

Diagnosis :

WBCT – Whole Blood Clotting Time

collection of blood from jugular vein of the cattle , pour it into the glass tube . Wait for **20 mins** . if the blood is not clot , that indicate snake venom present in the blood . Check it every 6 hours .

Line of treatment :

- Connect snake venom antiserum (20ml) two vial mixed with Normal Saline /DNS . After 6hours check WBCT , if blood is not clot , again go for second dose of snake venom antiserum.
- Tetanus toxoid – 0.5ml (I/M)
- Metronidazole (for gram negative bacteria)-I/V
- Streptopenicillin (10,000-60,000 i/u)I/M
- Furosemide -0.5-4mg /kg (I/M)

Contraindication :

- Avoid administration of chlorpheniramine maleate . It cause synergistic reaction of snake venom .

- Don't use tourniquet
- **Corticosteroids**: Actually Steroids did not produce any side effect. No use in snake bite.

Use steroids when anaphylactic shock is noticed during administration of antivenin, Steroids are compulsory use.

Advice to farmer :

1. Suspected snake bite cattle milk is **fit for human and calf consumption.**
2. If the animal is pregnant, may be the chance for **abortion.**
3. The venom excreted in the **all body fluids.**

Some practical clue :

1. **Indian cobra** : (நாகப்பாம்பு) **neurotoxic** – no swelling at the biting area, produce severe pain at biting site.
2. **krait** : (கட்டு விரியன் பாம்பு) **neurotoxic** – same like cobra.
3. **Viper** : (விரியன் பாம்பு) **haemotoxic** – produce swelling at biting area, epistaxis, dilated pupils.

MAJOR VENOMOUS SNAKES OF INDIA



Cobra



Common Krait

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Russel's Viper



Saw scaled Viper

Cobra bite

Clinical signs

Severe swelling and necrosis of the biting area.

4. Actinomycosis in ruminants (lumpy jaw)

Clinical signs:

Initially painless swelling , hard immovable bony swelling on mandible , pus through opening , in appetite , salivary secretion ,swelling of the head in chronic stage .

Line of treatment :

- ✓ *Surgical opening* of the swelling region and evacuate the pus materials.
- ✓ Cavity cleaned with **potassium permanganate** solution .
- ✓ Cavity is packed with **seton** (*gauze impregnated with tincture iodine in first day,second day gauze is impregnated with povidine iodine*)
- ✓ Oral administration of **potassium iodide -10g** mixed with water /put in deoiled rice bran make a ball like structure and give it to animal for daily once.
(Availability of potassium iodide -100 g , cost around 700/-)
- ✓ **Streptopenicillin** -5g I/M
- ✓ **Fluid therapy** (RL /NS) – because animal did not taking feed and water /anorectic .
- ✓ **Chlorpheniramine maleate** – 0.25-0.5mg/kg (I/M)
- ✓ **Cryo-therapy** (liquid nitrogen) also effective .
- ✓ **Supportive therapy** (**tribivet, B complex**)-5-10ml (I/M)

Caution :

- After lancing the mass , don't suture it . Follow seton replacement day to day around 10days .

(**potassium iodide** – it also act as a **expectorant** (சளி நீக்கி) , after administering the potassium iodide orally , the mucoid discharge occur from the nostrils –don't bather about ,go for administration of **chlorpheniramine maleate** . Potassium iodide did **not cause abortion** in pregnant animal.)

- Continue the fluid therapy around 6-7 days /until animal taking feed and water properly . Daily the cavity is cleaned with potassium permanganate .

Swelling of mouth ,nasal region . Animal cannot able to see , cannot able to open the mouth properly.



5. Ephemeral fever

Clinical signs :

High fever , muscular shivering , animal in standing position with dull and depressed , stiffness of all four limbs , **lameness**, enlargement of lymph node , respiratory distress , anorexia , definitely animal have **hypocalcemia** , some time diarrhea , congested mucus membrane.

Line of treatment :

- Non-steroidal anti-inflammatory :
 - *flunixin meglumine* – 1.1-2.2mg/kg (I/M)
- *Enrofloxacin* – 7.5-12.5mg/kg (I/M)
- *Chlorpheniramine maleate* – 0.25-0.5 mg/kg (I/M)
- *Fluid therapy* (RL /NS/DNS/D20) –I/V
- *Calcium borogluconate* – 1g/45kg –I/V

(Generally without treatment animal recover within 3 days.)

Caution :

1. Avoid to oral drenching – because susceptible animal did not having swallowing ability .

Advice to farmer :

- This disease **not spread** through the **direct contact** , only by arthropod .
- Avoid oral drenching .

6. Tetanus

Clinical signs :

Muscular rigidity , stiffening of limbs start from the hind leg to forelimb ,extended head and neck , hyperesthesia, respiratory distress, erect ear , fixed eye ball , **recumbent bloat** , finally convulsions and death is due to respiratory failure .

Line of treatment :

- Elimination of bacteria : *streptopenicillin* -5g (I/M)
Dose rate : 10,000-60,000 iu/kg
- Neutralize the toxins : *tetanus toxoid* 0.5-1ml (I/M)
- Control of muscular spasm : *diazepam* – 0.5mg/kg (I/M) or *magnesium sulfite*
- *Fluid therapy* (RL/NS)-10ml/kg (I/V)
- Feed by introduce the stomach into the rumen – cannot able to swallow .

Advice to farmer :

7. Milk fever (parturient paresis)

Occur before or after parturition

Clinical signs :

Anorexia , scant faeces , muscular weakness leading to **sternal recumbency** with lateral kink of neck , circulatory collapse , weak pulse, dry muzzle , **subnormal temperature** , weak pulse , weak heart sounds .

Diagnosis : To collect the calving history , therapeutic diagnosis .

Line of treatment :

- ❖ Calcium borogluconate – 1g/45kg -I/V
- ❖ Fluid therapy (Ringer's lactate ,DNS -10ml/kg)
- ❖ Vitamin A,D3,E&H – 5ml (I/M)
- ❖ Phosphorus injection (ultraphos) –
- ❖ Calcium chloride gel orally

Animal is response to treatment:

It shows the *Muscle tremors*,
Defecation ,
Urination .

Advice to farmer :

1. After correcting the blood calcium level – avoid suckling of young for 3 days .
2. Give calcium supplement diet .
3. Avoid milking for human and young consumption.

Cautions:

- Avoid administration of calcium drug fastly . It administer **only drop by drop** . Otherwise it cause **bradycardia** that leads to **animal collapse** .

Treatment for calcium induced bradycardia :

- ✓ Atropine sulfate – 0.02-0.2mg/kg ()

In case of milk fever :

Animal keep their neck on lateral side.

(lateral kink of neck)



8. Bloat

I. Free gas bloat :

It is due to obstruction of the oesophagus (choke) - no eructation process will occur – leads to accumulation of the air in the rumen .

(or) Tetanus (only free gas bloat occur)

Clinical signs / Diagnosis :

1. Enlargement of left paralumbar fossa (in severe case bilateral enlargement of abdomen)

2. Auscultation exhibit - drum like sound (pung sound)

3. Anorexia

Treatment :

1. Palpation of the esophagus , if any palpable mass present or not .

If choke in esophagus – animal cannot able to engulf the feed material and saliva also - so animal omit the more amount of saliva - if you hold the esophagus tightly definitely animal omit the more amount of saliva that indicate choke .

Diagnosis of choke : palpation of the esophagus area from the larynx to bottom .

Treatment of choke : if the mass is present in the **cervical part of esophagus** - 1. Push the mass into inside the rumen by using stomach tube.

2. If hard masses cannot go inside the rumen by stomach tube . Using Mouth gag to open the animal mouth . Any one person move the mass from bottom to mouth . VAS inserting the hand into mouth to capture the choked mass and remove it.

3. if the hard mass present in the **thoracic part of oesophagus** . Inserting the stomach tube to push the mass inside the rumen.

(Note: If you cannot able to push the mass inside the rumen by mild pressure. Don't give high force to push , because it leads to erosion of esophagus / rupture of esophagus/ wound - it affects the animal feeding habit.)

Esophagotomy - done when stomach tube method and manually push the content is failure .

4. Administer any antibiotics like streptopenicillin , Enrofloxacin , Gentamicin.

5. Anti-inflammatory

Meloxicam - dose rate is 0.5mg/kg body weight (I/M).

6. Antihistamines

Chlorpheniramine maleate – 0.25 to 0.5 mg/kg (I/M).

2. Froathy bloat

Clinical signs

1. Enlargement of left paralumbar fossa (in severe case bilateral enlargement of abdomen)

2. Anorexia

Diagnosis : by introducing the stomach tube inside the mouth into rumen - collect the material from rumen - find out froathiness .(bubbles like gas)

Treatment :

1. Removal of rumen ingesta by introducing the stomach tube .

2. Use mineral oils like coconut oil /mustard oil/ sunflower oil.

Dose for mineral oils – 1litre for 300kg body weight .(once daily)

Half litre for 150kg body weight.(once daily)

Administer mineral oils until symptoms will subsided.

3. silican dimethicone = trade name – D-blota , Megablota
(it reduce the surface tension)

Dose = 300ml for 300kg body weight (once in a day)

4. Tribivet – 10 ml (I/M) for 300kg body weight

5. Administer any antibiotics like streptopenicilline ,
Enrofloxacin , Gentamicin ,

6. If dehydration occur , give a fluid therapy (any fluids)
It should decided by veterinarian .

Advice to farmer :

1. Don't give any green fodder to the animal . Only fed
with dry fodder.

(**Note:** in recumbent bloat - u should think about *Tetanus* ,
Diaphragmatic hernia , *Vagal indigestion*)

9. Photosensitization

Agent should cause photosensitization

1. Lantana camera
2. Piperazine anthelminthic
3. Blue – green algae
4. Parthenium plant



These agents are causing photosensitization

Clinical signs :

1. Erythematous lesions on the superficial skin (which part expose to sunlight)
2. peel of superficial skin
3. All vital parameters are relatively normal

Treatment :

1. First separate animal from the direct sunlight

2.symptomatic treatment :

Vitamin – A is important for replace of affected skin.

3.Hepato-protectant tonic

4.Fluid therapy (any fluids for rehydration)

Advice to farmer :

Don't allow the animal in the late morning / afternoon.
Keep the animal away from the sunlight / keep the animal under the tree.

Allow the animal only early morning and late evening.

10. Post parturient haemoglobinuria

Most commonly occurring in cattle, buffalo in last 2-3 months of calving. (sometimes it occurring in 8-9 months pregnant animals - I had the experience in our ward)

Before / after parturition.

Etiology: *Phosphorus* deficiency

Clinical signs / diagnosis:

1. All vital parameters are relatively normal.
2. 10 - 20 days continuously haemoglobinuria will occur
3. It leads to anemia, pale mucus membrane, (\downarrow RBC)
4. Animal in sternal recumbent

Treatment:

Phosphorus:

1. Sodium dihydrogen orthophosphate

Dose rate - 60g (I/V) once in a day, it should be mixed with normal saline until clear dilution. (approx. 60g diluted with 200ml of normal saline)

At the same time give 60g (S/C) once in a day.

So, 120g of sodium dihydrogen orthophosphate is required.

Availability = 500g, 1kg, 2kg

2. Use injection of

Urimin

Ultraphos



But require more ml of phosphorus
around 300ml .

In emergency condition / powder form of phosphorus is not available . At the time we should use this .

Diseases of calf

1. Day old calf: after calving within **6-8hours** the colostrum should be fed to calf . colostrum is very important for **immunity development** .

10% of the body weight it should be fed.

ZINC SULPHATE TURBIDITY TEST :

This test is used to find out whether the calf is fed with colostrum or not . It's a simple procedure applicable to the field . collected the blood from the calf – separate the **serum** from the corresponding blood- it **mixed** with **zinc sulphate** in the test tube – keep the test tube close to **the white paper**- if the white paper letters are **clearly visible** through the test tube –that indicate the calf **did not feed colostrum**.

2. Atresia ani

The new born calf did not pass dung within the **first 12hours** that indicate atresia ani .

This case is treated surgically

3.Cleft palate

New born consume milk – but it expelled out through the nostrils – that indicate cleft palate – this case also correct by surgically.

4. Vitamin-A deficiency

The new born calf having **staggering gait** due to **no colostrum** feeding – that calf affected with hypovitaminosis A (vitamin A deficiency) .

Treatment : administer only vitamin a containing injection

Dose rate : **440IU/kg** body weight.

5. Navel ill :

Immediate after calving , the calf navel cord is **cut upto 2inches**, put immediately **povidine iodine** on the navel cord. otherwise maybe the chances for occurrence of navel ill.

6. Hypoglycemia :

In case of new born calf : hypothermia is more common, cannot stand well , did not consume milk properly/completely that indicate calf having hypoglycemia .

Treatment : Dextrose solution (DNS , D20)

Symptomatic treatment – give **vitamin A,D3,E&H**

7.Hypovitaminosis -A

The new calf present with history of staggering gait , convulsions, **rotation of head** , falling down that indicate hypovitaminosis -A

(one more thing rotation of head is also due to hydrocephalus)

Treatment : Give vitamin-A injection alone (440IU/kg) for 2-3days.

Cautions: Don't give the vitamin-A injection intravenously .
It strictly intramuscular injection only.

8. E.coli infection :

The calf with the history of **white diarrhea ,foul smelling ,severe dehydrated** that indicate calf is affected with E.coli infection. (note : diarrhea incase of calf/young one is a serious problem , don't take careless , because it cause rapid fluid loss that leads to sudden collapse of the young one)

Treatment : Give electrolyte (**glucose /sugar mixed with salt solution drench it into orally**)

Or use human preparation **ORS solution**(oral rehydration solution)

In severe case : endotoxaemia with increased heart rate

Give fluid therapy : 1.**Ringer's lactate** or normal saline mixed with NAHCO₃ in intravenously.

2. Broad spectrum antibiotics : **amoxicillin**

3.**flunixin meglumine** also very effective in endotoxaemia cases. The treatment should follow 2-3days animal recover quickly.

9. Over feeding /over milk consuming :

New born calf having diarrhea , no dehydration, cloudy diarrhea, abdomen full means that due to over feeding/milk consuming .

Treatment : give lemon juice is mixed with water / acetic acid is drench it into orally that cause diarrhea .

Following the treatment give the fluids to replace the electrolyte imbalance .(mainly use Ringer's lactate for electrolyte)

10. Salmonellosis :

Calf present with the history of showing straining during defecation , blood with mucus diarrhea and tenesmus that indicate calf is affected with salmonellosis .

Treatment : fluid therapy – Ringer's lactate
Broad spectrum antibiotics-

11. Coccidiosis :

Calf present with the history of dysentery with blood , but no mucus coat (rainy season)that indicate calf is affected with coccidiosis .

Treatment : sulfadimidine , sulfatrimethoprim (oriprim), amprolium,

Caution : over dosage of **amprolium** cause thiamine deficiency – vitamin-B1 deficiency – that leads to **poliencephalomalacia** .
more common in goat.

Clinical signs of **poliencephalomalacia** : neurological signs with nystagmus .

Treatment : vitamin B1 injection

Deworming schedule of the calf

Start from **2-3 weeks** after birth .

Ist – ideally use to give piperazine

(it available in the powder and liquid form) it only active against the nematodes specifically .

Iist – use to give **albendazole** -

Fenbendazole-

Pyrantel pamoate –

Axependazole –

- **First 6 month after birth :**
 - Every month you should deworm the animal
- **After 6 month after birth:** (once in 3 month)
 - Every 3 month you should deworm the animal
- **1 year after birth :**
 - Every 6 month you should deworm the animal.

Except , day old buffalo calf - **deworm the buffalo calf at time of birth** – because new born buffalo calf are more prone for **toxocara vitulorum** infection .Use **piperazine** for day old calf . **Dose rate-100 to 150mg/kg (PO)**.

After calving you should deworm the cow also , to prevent the transcolostral transmission of parasitic infection .

Note : Adminster the piperazine in day old buffalo calf only at evening time . If you administer the piperazine at morning /afternoon time it cause **photosensitization** (it's phenothiazine derivatives)

If photosensitization occur due to piperazine Treatment is

1. Separate the **buffalo calf** from the **sunlight** .
2. Withdraw the **piperazine** drug
3. Administer the **vitamin -A injection** (promote the superficial skin)

If you deworm the calf , after 4 hours of deworming , administering the magnesium sulfate (MgSO₄) -25-30g orally drench it – it act as a purgatives- to clean /remove the intestinal parasite from the digestive tract .

(note: don't give deworming agent along with mgso₄ that leads to animal collapse . So give deworming agent and mgso₄ alone)

12. Calf pneumonia :

2 weeks to 1month calf present with a history of severe respiratory distress with high fever .

Calf pneumonia - that occur any time .

Its due to many factors like aspirate the amniotic fluid , diminish the immunity .

Treatment :

- Amoxicillin , gentamicin antibiotics .
- Give steroids – dexamethasone
- Give bronchodilators –theophyline continue the treatment 3-5 days .
- Any respiratory distress animal give furosemide (Lasix) and chlorpheniramine maleate .

Caution :

- **Don't give the fluid therapy** in any respiratory distress case .
- **Handle** the animal **very carefully** , otherwise animal will collapse at the time of physical examination .
 - **Don't transport the animal in open vehicle** may be chance for death due to respiratory distress .
- **Don't insert the stomach in the open breathed** animal

13. peel of superficial skin of the new born around 1 month age calf

That indicate moulding of old skin transfer into the new skin, holding the skin by hand in any area of calf body it will peel off.

Its not a abnormal , it's a normal one . No need the take skin scrapping and treatment .

Give **vitamin -A injection** to promote the superficial skin growth.

Note : if any scales / thickening of the skin lesions is present . That indicate mite infestation . From forelimb , hindlimb and tail region have the same scale/ thickening lesion that indicate mite infestation.

Treatment of mite infestation : neem oil mixed with turmarind powder apply on the skin lesion until the lesion should subsided.

14. Joint ill / navel ill

Most commonly occur in below one week calf / kid .

Clinical signs: *Initially,*

Mild painful swelling in knee and hock joint ,
increased temperature , anorexia , very painful during palpation .

Chronic case: hard swelling transfer into abscess
formation .

Treatment of navel ill :

Initially : Any broad spectrum antibiotics ,

Amoxicillin , gentamicin

Corticosteroids – **Dexamethasone** injection continue until
the swelling is reduced.

Chronic case : Use iodine ointment (**vetodex**) for ripening of
swelling mass – iodine ointment rubbing over the swelling area
until produce heat , that promote very good action – after 2 or 3
days the hard swelling is convert into the soft fluctuating swelling
– make a incision over the mass – evacuate the all pus material –
then apply **MgSO₄ + glycerine** paste gauze in the lancing wound –
because magnesium sulfate absorb all the pus material , that
promote quick heal – after swelling is reduced you should apply
povidine iodine instead of **MgSO₄ + glycerine** paste until it curable.

15. Maggot wound

In calf maggot wound mostly occurring in umbilical
region (most common) , tail , hoof . In case of female calf mainly
occurring in vaginal tract .

Adult cow : After parturition a small hole present in the vulval lips
with hardening of surrounding area , that indicate maggot
present in the vulval lips (small hole)

Treatment of the maggot wound:

- This is the wound only curable within a 1 or 2 days without any antibiotics, with proper cleaning of maggot in the wound .
- Use forceps to remove the maggot from the corresponding site. If any live maggots are present keep the povidine gauze inside the wound . OR
- Use a turbendine oil / any ectoparasitcites like cybermethrin (butox) apply these oil , wait for few minutes and cleaned with KMNO4 solution , after thoroughly cleaning apply ointment like vetbacin / Lorexane . OR use negasund powder instead of ointment .
- In severe case of maggot wound administer the ivermectin is very effective .

16. Hypomagnesemic tetany

Differential diagnosis : Rabies

Because the clinical signs are same like rabies , very difficult to differentiate the hypomagnesemic tetany with rabies .

A 45-50kg body weight calf more prone for hypomagnesemic tetany . Because calf once attain this much of body weight change milk feeding into the grazing . Calf should consume milk upto attain 45-50kg body weight definitely it affected with hypomagnesemic tetany , because milk is poor source of magnesium .

Clinical signs :

- Salivation (froathy),
- Hyperaesthesia ,(calf hear any sound , start convulsion)

- Bellowing ,
- Convulsion

If the rabies is suspect keep the animal under the observation for 10 days . If rabies is positive animal died within 10 days .

Treatment :

- Administer the magnesium
- MIFEX – trade name
- 10% MgSO₄ solution – I/V

It immediately response to the magnesium treatment . If it is not response to the magnesium treatment you suspect Rabies .

17.Worm infestation

6 month old calf walking few meters suddenly falldown and recumbent due to anaemia .

The calf did not deworm upto 5-6months , after 5-6months deworm the calf in the first time may chance for occurrence of shock is due to worm infestation . (removal of more worm from the intestine leads to shock)

Udder affections

1.Mastitis :

There are two types of mastitis :

- 1.clinical mastitis
- 2.sub-clinical mastitis

1.clinical mastitis :

Obivious clinical signs like swelling , heat , redness , presence flakes in the milk /watery milk.

2.sub –clinical mastitis:

No any clinical signs are noticed in the udder and milk also normal without any flakes .

Diagnosis of subclinical mastitis:

1. first think is based on the history ;

- Reduction in the milk yield ,
- Salty taste milk,
- Formation of thread after boiling of milk.

2. **CMT test** – Colifornia Mastitis Test

Procedure :

- Collect the milk in the milk pad
- Add 1to 2 drops of CMT reagent
- Formation of gelly , that indicate animal is affected with sub-clinical mastitis. No gelly formation that indicate normal milk (negative of sub-clinical mastitis)

(**note :** in field practice you can use any homely use detergent like Rin , surf exel , instead of CMT reagent)

Note : 1. Early lactation (or) colostrum milk = false negative
2. late lactation

These two period don't use CMT test ,because it will give a false positive result. Not only for subclinical mastitis , the gelly should form at the period of early lactation /colostrum and late lactation .So, carefully do the test and tell the prognosis.

Care and management of subclinical mastitis:

Use **teat dipping** (commercially available) /use tumbler for teat dipping –povidine iodine pour it into the tumbler / teat dipping instrument - immerse the all quarter teat after milking . In large size farm use chlorhexidine component instead of povidine iodine. (or) use any **teat spray** instead of teat dipping.

Treatment :

1. continue the antibiotics for one week.
2. trisodium citrate give orally (it's a pH modulator)

2. leptospirosis :

A farm animals present with the history of sudden drop of milk yield , first we should think about leptospirosis , then followed by subclinical mastitis.

Colour of the milk is - reddish

2. PHYSIOLOGICAL UDDER EDEMA:

Physiological udder edema most commonly occurring in the first calving due to sudden drop of blood into the udder , leads to seepage of the edema in the udder.

But the milk / colostrum are normal in colour and consistency.

(**But its a normal physiological process**)

Palpation of udder : in the first day it will become very hard in nature . swelling at the level of the umbilicus.

Treat 1 or 2 days it will become soft in consistency .

Treatment :

1. Furosemide - 2-4mg/kg of body weight

2. Acidazolamide tablet (it's a human preparation for diuretic)

3. Ice foamentation

4. tribulus terrestris (நெரிஞ்சி முள்) - put it into one litre water - boil it and cool it- pour it into the drinking water – give to animal for drinking . It act as

5. Dexamethasone

6. Furosemide =2-4mg/kg

(**Note** : single dexamethasone injection does not decrease the milk secretion to the milk animal, so don't worry about it)

Note : in some cases the swelling udder was noticed upto the hock joint . It correlated with physiological udder edema and prepubic tendon rupture .

In these type of case treat the animal 2days for physiological udder edema . If the animal is not responsible for after 2days treatment of phy. udder edema - it definitely prepubic tendon rupture. Because within 2days udder swelling is reduced incase of physiological udder edema , but prepubic tendon rupture case it is not possible.

Complication of prepubic tendon rupture is ventral hernia . In this case nothing can be done . so tell the prognosis to the owner .

Physiological udder edema present in the 2nd and 3rd calving , but the swelling is lesser than the first attempt .

Principle of physiological udder edema :

No need to treat the animal with antibiotics , but in field practice need antibiotic treatment .

Some clue for prevention of udder edema:

- Reduced by allow the calf to suckling the milk

3.haemaggalactiae : (rose milk)

Commonly noticed in the recently calved animal. Because sudden withdraw of milk from the udder. That cause minute capillary damage .

Differentiate the mastitis milk & haemaggalactiae :

Mastitis milk	Haemaggalactiae
Centrifuge : collect the milk in the test tube and centrifuge it. After centrifuge the blood is not settle down and milk colour is red / rose colour that positive for mastitis milk.	Centrifuge : collect the milk in the test tube and centrifuge it. After centrifuge the blood is settle down of the test tube with clear milk that indicate haemaggalctiae .

Treatment of haemaggalactiae :

Strip kit ,
Adenochrome ,
Stopchrome ,
Texableed ,
Striptochrome (2ml ampoule)

These drugs are used to treat the haemaggalactiae . If the animal is not responsible for the

treatment for 2 to 3 days (if blood in milk is not control) going to use calcium borogluconate (I/V)

IN RECURRENT CASE OF HAEMAGGALACTIAE :

Use formalin 20ml into one litre of water with two spoon salt thoroughly mixed – drench it (avoid aspiration)

100% the case is curable .

Advice to farmer : administration of formalin in orally - animal does not take feed and water for 2-3days because of formalin.

Contraindication : don't use intramammary infusion into the mammary gland incase of haemaggalactiae.

4.MYCOPLASMA :

No swelling but milk is creamy in nature , udder is look like atrophied – that also indicate “**mycoplasma**”

Milk creamy in consistency without discolouration that indicate Mycoplasma . line of treatment is tylosine _10mg/kg.

Avail. 100ml vial

FARM ANIMAL (SHEEP/GOAT): Present with the history of feeding habit are normal in all animals , but animal having nasal discharge that indicate mycoplasma –CCPP/CBPP.

CCPP and CBPP also treated by using **tylosine & enrofloxacin** very effectively.

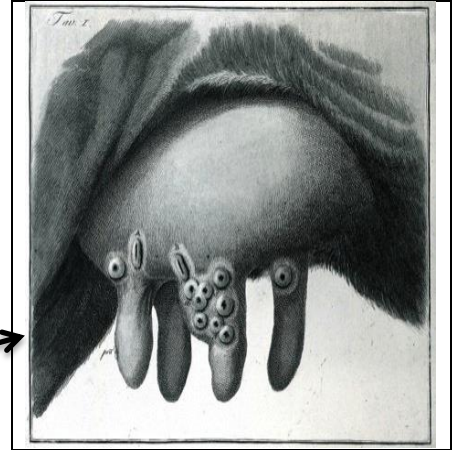
5. cowpox : (viral disease)

Lesions will pedunculated and reddish brown in colour.

Only lesions are present in the teat , not udder.

Its a seasonal one .

In cattle teat – small spot are present around the teat.



It affect all the animal , transmitted through the milking.

Treatment : any antibiotic ointment / injection we can use. For prevention of secondary bacterial infection.

**Injection form antibiotics : Streptopenicillin ,
Enrofloxacin ,**

Because this disease persist only 1 to 2 weeks .

6.Bovine Ulcerative Mammilitis :

It's a viral origin

Transmit to the other animal through milking

It cause oral lesion in the suckling calf.

Treatment: any antibiotic ointment / injection we can use. For prevention of secondary bacterial infection.

Injection form antibiotics: Streptopenicillin ,
Enrofloxacin ,
Because this disease persist only 1 to 2 weeks .

(or) natural therapy like turmarind mixed with neem oils also effective.

7. Intertrigo

Inner aspect of the thigh region presence of moist exema in bilaterally /unilaterally .

It's a bacterial origin

Here once the scab formation will occur peel off skin – it's a recurring one – ABST test – select the antibiotics.



8. Teat papilloma

It's viral etiology

Treatment :

Antiomyelin – 15-20ml orally weekly interval

Dhuja ointment

Tincture dhuja – 25drops in 1tumbler of water administer orally 5-6times /day.

9.Mechanical injury / black spot in the teat

Here wound is present in the apex (teat orifice) .

Partial /complete teat obstruction is occur due to the swelling of the wound. Don't think about the teat obstruction is due to any tissue growth inside the teat orifice when wound is present.

Treatment :

1.Daily administration of the oxytocin -10 IU – Intravenously, to drawn the milk from the infected teat by inserting the teat siphon into the teat.

2.Mix the lorexane ointment with zinc oxide powder – make it into paste , apply over the infected teat wound.

(zinc oxide – it's useful for chronic wound treatment)

3.Administer antibiotic:

Gentamicin – 4mg/kg body weight – I/V

Streptopenicillin - 5g – I/M

Meloxicam -0.5mg/kg –I/M

Prednisolone -0.5mg/kg -mg

Prednisolone : important for reduce the milk secretion . Because wound is not heal when milk secretion occur in the infected teat. Administer the prednisolone , it reduce the milk secretion that promote the wound healing . After 3-5days again milk secretion come back to normal.

10.Leaky teat :

It's due to relaxation of the teat sphincter muscle.

It occur in 2 or 3 teats / occur in the all the teats.

Advice to farmer :

Advice intermediate milking (means farmer drawn the milk from the udder 3times/day{ morning –afternoon-evening}).

Treatment :

If milk secretion leaked in any 1or 2 teats administer the phosphorus injection intramuscularly for 2-3days. After 3-4 days its curable.

11.Polioencephalomalacia :

More common in heifer , sheep and goat.

It is due to thiamine deficiency (vitamin B1 deficiency)

Early diagnosis :

- First signs is separation of the herd/flock.
- Continuous bleating ,
- Staggering gait ,
- Slight deviation of neck, torticollis , opisthotonus and star grazing appearance ,
- Slide slap noticed in one day , next day animal look like normal,
- Ventral/ horizontal nystagmus also noticed,

In later stage : animal in lateral recumbency ,

Pedelling of legs also noticed.

Animal continuously affected with thiamine deficiency - it will cause damaging of cerebral part called **cerebro cortical necrosis.**

In early case - very easily to treat . In delayed case prognosis is poor. Delayed case if not treated convulsion should occur .

Differentiation :

Intoxication	Polioencephalomalacia
Here , feeding habit is affected, Convulsion is occur, Amount of salivation is occur.	Here , feeding habit is normal. Later stage convulsion occur. No salivary secretion .

Treatment of polioencephalomalacia :

1.vitamin B1 - dose rate -10mg/kg (intramuscularly)

Care should be taken when vitamin B1 /B-complex injection administer into i/v .You should mixed with normal saline / dextrose 20% is necessary . Don't administer the vitamin B complex alone in intravenously .

Commercially available drugs:

- 1.B plex forte injection - 1ml contain 100mg
- 2. Neurobion injection -

In polioencephalomalacia case administer the vitamin B1/ B complex injection in every 4 to 6 hours (4 times /day). But in practically not possible to follow , because veterinarian not at all possible to attend the single case in a whole day. So , use 40mg/kg single dose of vitamin B1 for single injection. Next day animal will curable from the polioencephalomalacia.

Systematic treatment :

- Mannitol ,

- Dextrose 20%,
- Dexamethasone injection , these three for supportive therapy.

In case of heifer , follow same treatment .

Advise to farmer :

1. don't keep the animal in lateral recumbency , it cause eye injury.

2. keep the animal away from the sunlight.

12. vomition of small animals like dog:

Give way water (lemon /citric acid is mixed into the milk – heat it – some portion transper into coagulation- remaining greenish colour water is giving to small animals- orally – it act as a demulcent.

13.cyanide poisoning (HCN poisoning)

Source of cyanide poisoning is

- Immature sorghum (சோளம்)
- Tapioca
- Sugarcane top
- Rubber leaves
- Unknown weeds

Fresh tapioca and குச்சிகிழங்கு தோல் contains more cyanogenic glycosides – it will kill the animal just few seconds with the clinical signs like **tremors , mild bloat and salivation.**

Ruminants are more sensitive than monogastric animals

Mostly occurring in draught condition – animal consume cyanide containing plant (cyanogenic glycosides) – it liberate cyanide gas into the rumen – leads to tissue anoxia- death .

Preflowering stage is more prone for HCN poisoning .

Onset of clinical signs and death will occur sudden.

Clinical signs for cyanide poisoning:

- ✓ Gaspings
- ✓ Hypersalivation
- ✓ Muscular tremors
- ✓ Pupil dilatation
- ✓ (in OPC & carbamate poisoning pupil is constricted)
- ✓ Mucous membrane is brick –red in colour(terminally – cyanotic)
- ✓ Intravenous blood also cherry red / bright red colour
- ✓ Signs of colic
- ✓ Dyspnea
- ✓ Tympany
- ✓ Excitement
- ✓ Restlessness and staggering gait

Note : if any large size flock sheep /goats present with the history of sudden occurrence of above the clinical signs and death . You should think about

1. Intoxication (HCN /OPC/carbamate poisoning)
2. Infectious diseases (anthrax)
3. Ruminant acidosis

Treatment :

1. only one drug of choice is sodium thiosulfate(antidote)

Dose rate of – 660mg/kg (I/V)

It's in a powder form , so it directly mixed with normal saline .

This drug is enough .

Repeat the treatment of sodium thiosulphate every 6-8 hours until the clinical sings are subsided.

Supportive treatment : if it is needed go for symptomatically

2.Activated charcoal - act as a adsorbent

3.Furosemide – 2-4mg/kg

4.Iron supplement

Note : if any large farm is affected with cyanide poisoning . Don't treat the animal one by one , because it's very difficult – animals should treat immediately , other wise it's dead.

So, once veterinarian enter into the flock quickly to prepare the sodium thiosulphate solution – take 20ml syringe – administer into the intravenously in all flock animals within 10mins.

Contraindication

Don't give D-bloata/ Megablota/Liquid paraffin for mild bloat (because this bloat is due to cyanide poisoning)

More salivation also noticed in the acute cyanide case – so don't give the atropine sulphate . If you administer the atropine sulphate for this case animal will quickly died .Already pupil dilatation is occur.

Confirmatory test for cyanide poisoning

Henry picric acid test (field level practice)

Prepare the picric acid solution (yellow in colour)



Take a whatman filter paper , dipped into picric acid solution



The whatman filter paper turn yellow in colour & dry it in room temperature



Collect the suspected material (rumen ingesta/ plant material – very small one leave is enough) put it into test tube



Gently heat it , vapor will generate from the test tube



Keep the dried whatman filter paper on the vapor from test tube



Filter paper turn yellow colour to red in colour



“Positive for cyanide “

Validity of **Dried Whatman filter paper** is – upto 10days

(If use the filter paper *after 15 days* it will give a negative result)

Validity of the **picric acid solution** is 6-10 months

Advice to farmer

Allow the animal to consume dry sorghum fodder

Don't allow to consume immature sorghum /cyanide containing plants.

14.Mastitis

In goat: recently kidded (1 week /10days/1month) goat is affected with mastitis definitely it's a “ **blue bag disease**” .

During palpation of udder it cold in touch.

1. First discolouration of milk will occur
2. Swelling of udder

3. Watery discharge of milk

Treatment :

1. Any broad spectrum antibiotics :

Gentamicin – 4mg/kg(I/V)

Enrofloxacin -5mg/kg(I/M)

These two drugs are commonly used for mastitis treatment.

2. If the animal is not responsive for this treatment go for higher antibiotics

Ceftriaxone sodium (in septicemic condition also)

3. If severe in udder

Administer the steroids /NSAID

4. Fluid therapy - dehydration / anorectic condition

5. Antioxidant – vitamin E

Treatment response : serosanguinous milk changed into yellowish , that indicate the animal response to treatment .

Note : If any case use same antibiotic to treat for 4-5days . If animal is not response to treatment after 4-5days then only you have to change the antibiotics (use other antibiotics / higher antibiotics)

Advise to farmer:

Animal is affected with mastitis frequent milking is advisable . Don't allow the mastitis milk into the udder prolong time . Drawn the mastitis milk from infected teat 6-7times /day until the clinical signs are subsided.

(Main purpose – reduce the bacterial load in the teat)

If any animal present with the history of recently calved , recumbency , increased temperature , very hot painful swelling of udder , severely congested mucous membrane (cmm/vmm) that definitely indicate --- septicemia .

Treatment :

1. Collect the milk sample for ABST (in field level difficult)
2. In septicemic condition don't go for enrofloxacin and gentamicin . Directly go for higher antibiotic like ceftizoxime .
3. Flunixin meglumine is very important in septicemic condition .
(it neutralize the endotoxin)
4. Vitamin - E (antioxidant)

Prognosis :

In delayed case - fibrin will form (fibrosis of udder) - [**poor prognosis**]

During palpation of the udder in chronic condition - very hard in consistency.

15. Haemorrhagic septicemia

Risk factor :

Intermediate rain , sunlight and stress (due to prolonged transport and crowding of animal)

Clinical signs :

- Sudden swelling noticed in the lower mandible
- Severe respiratory distress
- Congested mucous membrane
- Edema in the head(some time)

➤ Elevated temperature (around 40⁰c)

Treatment :

1. **Drug of choice – sulphatrimethoprim =15-20mg/kg (I/V)**

(any sulphonamides are useful)

(or) Oxytetracycline =10-20mg /kg (I/V)

(or) Enrofloxacin =5mg/kg (I/M)

2. Furosemide =2-4mg/kg

(**Note:** if any respiratory problem /pulmonary edema you should give a furosemide at the dose rate of 2-4mg/kg)

16. Aspiratory pneumonia

It's a man made one

It's due to accidentally aspiration of any oil suspension (neem oil , mineral oil)

Clinical signs:

- ✓ Extended neck
- ✓ Exaggerated lung (during auscultation)
- ✓ Oral breathing

- ✓ Bronchospasm
- ✓ Cough

Diagnosis :

Early diagnosis by keep the stethoscope in a right ventral lobe of lung to find out any abnormal sound (child crying). Because the right ventral lobe is more prone for early diagnosis of respiratory distress.

Treatment :

1. **Drug of choice – ceftiofur sodium=1mg/kg (I/V)**

(or) streptopenicillin /enrofloxacin

2. Furosemide -2-4mg/kg

3. Corticosteroids – dexamethasone

4. Severe bronchospasm give a theophylline (**bronchodilator**)

Prognosis : Guarded to poor

(**Note :** nasal discharge is watery in nature that indicate – **Upper Respiratory Tract infection .**

Nasal discharge is mucopurulent in nature that indicate – **Lower Respiratory Tract infection.**)

17. Rupture of alveoli

Clinical signs: crepitation sound noticed in the subcutaneous tissue (subcutaneous emphysema)

Prognosis : poor

18. Haemonchus contortus infestation

In sheep flock : so many animals present with the history of sudden death with anaemia – that indicate the haemonchus contortus

(**owner report:** yesterday animal look like normal , but today morning itself it will suddenly died , without showing any clinical signs prior to death)

Post mortem : Abomasum it reveals many flukes present like a noodles .

Blanched abomasal mucosa also seen

19. Urea poisoning

It's commonly occurring intoxication due to accidental ingestion of urea .(directly intake urea / urea dissolved water) . Most commonly noticed in the cattle.

Clinical signs

1. Within a second animal get bloat. (it's a most predominant signs)
2. Froathy salivation
3. Excited
4. Convulsion

Treatment

1. Drug of choice is – 5% acetic acid 2 to 5 litres orally

[Because urea poisoning – more amount ammonia will absorbed in alkaline pH , so we should change rumen pH alkaline into acidic (vinegar/ acetic acid)].

Main thing is don't give the acetic acid orally without **stomach tube**, chance for aspirate the acetic acid due to impairment of swallowing ability.

2. Administration of the 5-10 litres cold water – to prevent the rumen microbial conversion – prevent ammonia generate.

Note : if any farmer call you with the history animal consume urea , immediately you advice the owner to administer the vinegar (acetic acid) or cold water through the cell phone .

3. Symptomatic treatment

Give D-bloata /Mega bloata / Liquid paraffin

4. Fluid therapy is must (any fluids)

(Note : Any case present with the history of *sudden development of bloat* with *sudden death* – suspected for urea poisoning)

20. Nitrate poisoning

Source

- Water contaminated with nitrate,
- Well water,
- Nitrate containing plant sources,
- Sewage water contamination

Clinical signs

1. Predominantly occurring respiratory distress “Gasping” typically abdominal respiration .Because formation of methaemoglobin leads to impairment of oxygen supply to the body tissues .
(Note :abdominal respiration also noticed in the botulism case also)
2. Congectival mucous membrane : chocolate brown colour

Treatment

1. 1% Methylene blue

Dose rate : 2 – 4 mg/kg (give upto 8mg/kg based on severity of the case) --- I/V

How to prepare 1% methylene blue

It available powder form in all medical shop

If example animal body weight is 300kg – how much you make it.

Dose rate calculate = 300kg x 1mg = 300mg

1 % means 1 g (1000mg)in 100 ml Normal saline

500 mg in 50ml Normal saline

300 mg in 30 ml Normal saline

So, 300 kg animal need 300 mg of methylene blue diluted with 30ml of Normal saline. Take 30ml syringe for injection.

[If you injecting the 1% methylene blue in normal healthy animal – no side effect will occur .]

Repeat the methylene blue treatment for every 6-8 hours until the clinical signs subsided.

2. Symptomatic treatment

Iron supplement

Confirmative test for Nitrate poisoning

Dipheniramine test

Blue colour – positive for Nitrate poisoning

21. Mimosin toxicity

Clinical signs

- Vulval edema (look like once you touch it will burst),
- Urinary incontinence , (first rumen impaction will occur followed by urinary system is affect , leads to urinary incontinence)
- Not passing dung,

Treatment :

1. Purgative – Magnesium mixed with sodium chloride

2. Diuretics – furosemide (2 -4 mg/kg)

These two drugs are standard for treatment of myxomatosis.

3. 1 -2% KMNO₄ orally - to prevent the liberation of the toxins.

(**Note** : Myxomatosis - early treatment is good,

Late / delayed case prognosis is fatal.)

[**Angioneurotic edema** : Any allergic condition it cause edema .

- Swelling in the eyelids,
- Softening of the ear flaps,

Treatment : these type case you should give Chlorpheniramine maleate at the dose rate of = 0.5mg/kg I/M]

22. Bee sting bite

Clinical signs :

1. After biting immediately develop Urticaria in throughout the body
2. Respiratory distress
3. Swelling of the eyelids
4. Excited

Treatment

Don't remove bee stings on the animal body , again it cause severe pain.

1. Anti-histamine

Dose rate – 0.5mg /kg (20 -30ml intramuscularly)

2. Steroidal injection

Corticosteroids (**Dexamethasone** – 0.2mg/kg)

If the animal is **pregnant don't use the corticosteroids** .

3. Fluid therapy is must to avoid the “ pain shock”

Any fluids based on the veterinarian choice.

4. Use **NaHCO₃** apply over the body - for pain reliever

(Because sting media is acidic in nature – it should changed by administration of NaHCO₃ alkaliner)

5. **Phenylbutazone / flunixin meglumine** : for pain relieve

23. Wasp bite

Clinical signs and treatment are same like bee sting bite

Except externally apply the **vinegar (5%acetic acid)** to relieve the pain. Because wasp media is alkaline – it should changed by administration of **vinegar (acetic acid 5%)** externally.

(Note: don't use NaHCO₃ externally in wasp bite , because it again induce the severe pain)

24. OPC / Carbamate intoxication




Carbamate intoxication – reversible one (easily save the animal)

OPC intoxication – irreversible one

Sources

Agricultural chemicals / plants contain agricultural pesticides

Chemical box contains

1. **Red colour**  : very dangerous to host
2. **Yellow colour**  : moderate
3. **Green colour**  : not fatal

Before going to treatment ask the owner what kind of pesticides animal consume and what kind of colour (given above)

Clinical signs

1. Any poisoning case main predominant signs is Salivation
2. Pupillary constriction (miosis)
3. Carbamate intoxication – severe continuous convulsion
OPC intoxication – convulsion occur unlike carbamate
4. Vomition (it exhibiting the OPC / Carbamate pesticides smell)
5. Respiratory distress
6. Shivering

(**Note** : Intermittent convulsion – seizure . It's totally differ from OPC / Carbamate intoxication)

Treatment

1. First approach the animal with fluid therapy (NS/DNS)

2. Atropine sulphate – 0.2mg/kg

1/3 dose – I/V

Remaining – S/C

(**Note:** If salivation is not occur , pupil dilatation , increase heart rate – in these condition administer the atropine full dose in subcutaneously)

3. Severe convulsion you have to sedate the animal by using

Diazepam Dose rate – 0.5mg/kg (I/V)

(if the convulsion is not stopped after administration of diazepam in the intravenously – directly go for intra-rectal administration (enema) of diazepam at same dose rate.

(Note : don't go for tranquilizer for sedation of animal , use only benzodiazepines)

2-PAM : it's drug choice for OPC poisoning (it's contraindicated in carbamate poisoning)

It only act within 2 hours. Otherwise not effective

Very costly

s.no	Drugs	Dose rate	Route	contraindications
1.	oxytetracycline		Strictly i/v	i/m cause severe pain and necrosis of the muscle ,should not mixed with ringer's lactate
2.	GnRH injection			
3.	Prostaglandins			
4.	Calcium Sandoz			
5.	Vitamin A,D3,E &H			
6.	Ceftiofur sodium			
7.	Dexamethasone Na			
8.	Neurokind plus vet			
9.	B complex injection			
10.	Pantoprazole			
11.	Ceftriaxone inj.			
12.	Enrofloxacin inj.			
13.	Iron sorbitol			
14.	Streptopenicillin inj.			
15.	Tranexamic acid inj			
16.	Analgin inj.			
17.	Diclofenac sodium			
18.	Hydroxyprogesterone			
19.	Amoxicillin & cloxacillin inj.			
20.	c.pheniramine maleate			

21.	Frusemide inj			
22.	Anti -snake venom			
23.	Ondansetron inj			
24.	Ephedrine injection			
25.	Gentamicin sulphate			
26.	Comin bolus- vet			
27.	Vincristine sulfate			
28.	Calcium borogluconate inj			
29.	Diminazene diaceturate (berenil)			
30.	Ofloxacin ,ornidazole			
31.	Metoclopramide inj			
32.	Meloxicam inj			
33.	Ceftizoxime inj			
34.	Rabies vaccine			
35.	Megavac -6 (1,2)			
36.	Diazepam inj.			
37.	Renerve plus inj.			
38.	Flunixin meglumine			
39.	Ascorbic acid inj.			

40.	Sodium acid phosphate injection			
41.	Ketoprofen injection			
42.	Pomisol ear drops			
43.	Tramadol HCL inj.			
44.	Xylazine injection			
45.	Colistin sulphate intramammary route			
46.	Cefoperazone Na & sulbactam Na inj.			
47.	Dexmedetomidine HCL injection			
48.	Butorphanol tartrate			
49.	Ketamine HCL inj.			
50.	Ivermectin injection			
51.	Potassium chloride			
52.	Ranitidine HCL			
53.	Methylethergometrine maleate injection			
54.	Albendazole susp.			
55.	Fenbendazole susp.			
56.	Pyrantel pamoate			

57.	Praziquatel susp.			
58.	Megablota			
59.	Prednisolone inj			
60.	Isoflupredone inj			
61.				

TEMPERATURE CONVERSION

To convert Celsius to °F = $[9/5^{\circ}\text{C}] + 32$

To convert °F to Celsius = $5/9[^{\circ}\text{F}-32]$

BODY WEIGHT MEASUREMENT FORMULA

Schaffer's method : $W = LG^2/660$

L—length from point of shoulder to point of pin bone.

G—girth (circumference of the chest / thoracic cavity)

Measured in a inches , directly apply to the formula

- 6 “F “
1. Feed
 2. Fluid
 3. Fat
 4. Faeces
 5. Fetus
 6. Foreign body

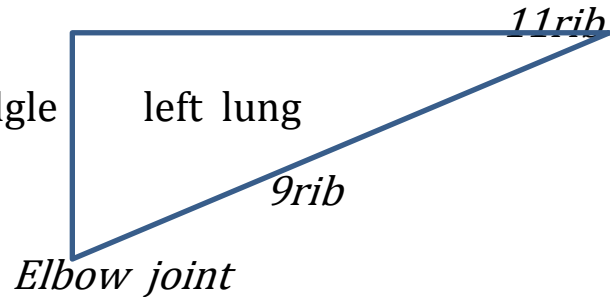
Location of internal organs for physical examination

Cattle :

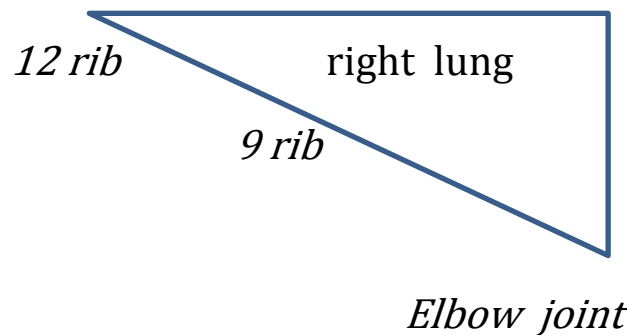
1. **Lung** – In left side from elbow joint to crossing the 9 rib to 11 rib making a triangular shape

(because of rumen making triangle

Upto 11 rib)



In right side from elbow joint to crossing the 9 rib to 12 rib making a triangular shape



Here, **right ventral lobe** is important for detection of early diagnosis of respiratory problem

2. Heart

Left side 3-5 ribs (behind the elbow)

3. Reticulum

Left side 6 – 8 ribs

4. Rumen

Left side beyond 8 rib to pelvic cavity

5. Omasum

Right side 7-9 rib

6. Abomasum

Right side beyond the 9 rib

7. Liver

Right side last 3 ribs

8. Right paralumbar fossa

Presence of large intestine particularly caecum

9. Left paralumbar fossa

Presence of rumen (here to find out the rumen motility)

OSMOLARITY VARIATION

Isotonic fluids : osmolarity equal to the plasma

Eg: RL (ringer's lactate)

NS (normal saline)

Hypotonic fluids : osmolarity lower than the plasma

Eg: half saline

Dextrose 5%

Hypertonic fluids : osmolarity higher than the plasma

Eg: D20 , DNS

Isotonic fluid = normal osmolarity is 250 -375 mos/L

osmolarity of the different fluids :

Ringer's lactate - 280 mOs/L

D20 - 1112 mOs/L

DNS - 585 mOs/L

NS (normal saline) -308 mOs/L

Identification of systole , diastole

- 1.Systole - louder , longer , duller & deeper
2. Diastole - shorter , sharper

Abdominocentesis :

Male : from 10cm posterior to xiphoid and 10 cm right lateral

Female : from 5-7 cm anterior to milk vein origin and 3-5 cm right lateral

Inserting a 16/18G needle to collect the peritoneal fluid . To check the peritoneal pH

During abdominocentesis if the peritoneal fluid is

Acidic - definitely it's a abomasum (true stomach)

Alkaline - peritoneal fluid (clear , slightly yellowish in nature)

Rumen fluid also alkaline but its greenish

Fluid required for different case

- ❖ Vomition –
- ❖ Diarrhoea –
- ❖ Dehydration –
- ❖ Anorexia –
- ❖ Ketosis –
- ❖ Shock –
- ❖ Acidosis - Early treatment only go for **Normal saline** with **NaHCO₃** for correction of respiratory distress

After correction of respiratory distress we can use **Ringer's lactate**

Different needle sizes and colour :

- 14G- light green colour
- 16G- white colour
- 18G- pink colour
- 20G- yellow colour
- 21G- dark green colour
- 22G- grey colour
- 23G- blue colour
- 24G- violet colour
- 25G- orange colour

Seizure

Drug of choice for seizure in *cat* is **phenobarbitone sodium**

Drug of choice for seizure in other spp **potassium bromide**

States of breathing

- ✓ *Eupnea* – ordinary quite breathing
- ✓ *Dyspnea* – labored breathing
- ✓ *Hyperpnea* – increased rate and depth of breathing
- ✓ *Polypnea* – panting type of breathing
- ✓ *Apnea* – absence of breathing

Steroids

Long acting - *Dexamethasone*

Betamethasone mainly used for shock.

Available in injection and tablet form

- Main uses :
- * Anti – inflammatory
 - * Immunosuppression
 - * Dermatitis (except demodicosis)
 - * Pruritis
 - * Corneal opacity , corneal ulcer

Short acting - *Triamcinolone*

Prednisolone -available in injection & tablet form

Isoflupredone (isoflud)

Isoflupredone – only one steroidal drug safely used for pregnant animal

Frequent use of this drug cause **hypokalemia**
(increase the elimination of potassium)

Weak corticosteroids

Potent mineralocorticoids

Prednisolone - also used for shock (**dose – 0.5mg/kg**)

Main uses : Immunosuppression

Autoimmune disease

Dermatitis

In small animal : prednisolone is very effective for dermatitis

Artificial insemination

Heifer :

Weight – it should be 2/3 rd of the adult body weight .

Age - it should be in a one and half years

Ideal body weight of the heifer is **200kg** in **one and half years**

pH of different body fluids

1. Ruminants

- Rumen fluid – 6.2 to 7.2
- Rumen fluid pH in acidosis - ≤ 4.6
- Rumen fluid in urea toxicity - ≥ 7.3
- Abomasal fluid – 2
- Duodenum – 7-7.4
- Ileum – 7.5
- Caecum – 7.24
- Colon – 7.09
- Rectum – 6.24
- Vagina – 6.5-7.5

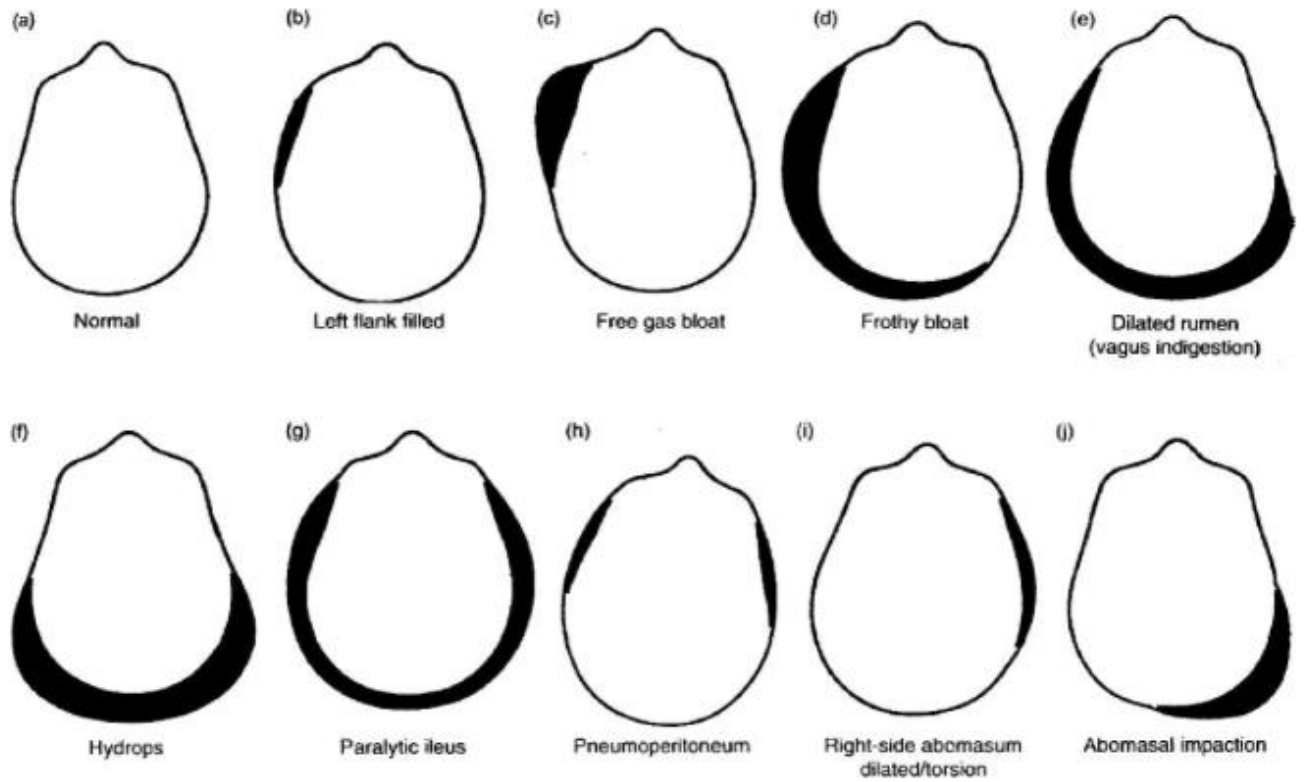


Fig. 6.1 Silhouettes of the contour of the abdomen of cattle, viewed from the rear, with different diseases of the abdominal viscera. (After Stober M, Dirksen G. *Bovine Pract* 1977; 12:35–38.)

Vertebral formula in different animals

Animals	C	T	L	S	Cy
Ox	C7	T13	L6	S5	Cy18-20
Sheep	C7	T13	L6-7	S4	Cy16-18
Horse	C7	T18	L6	S5	Cy15-21
Pig	C7	T14-15	L6-7	S4	Cy20-23
Dog	C7	T13	L7	S3	Cy20-23
Fowl	C13-14	T7	L-S14		Cy 7

Hip joint ligament

Horse :

Presence of accessory ligaments (*pubio-femoral*)

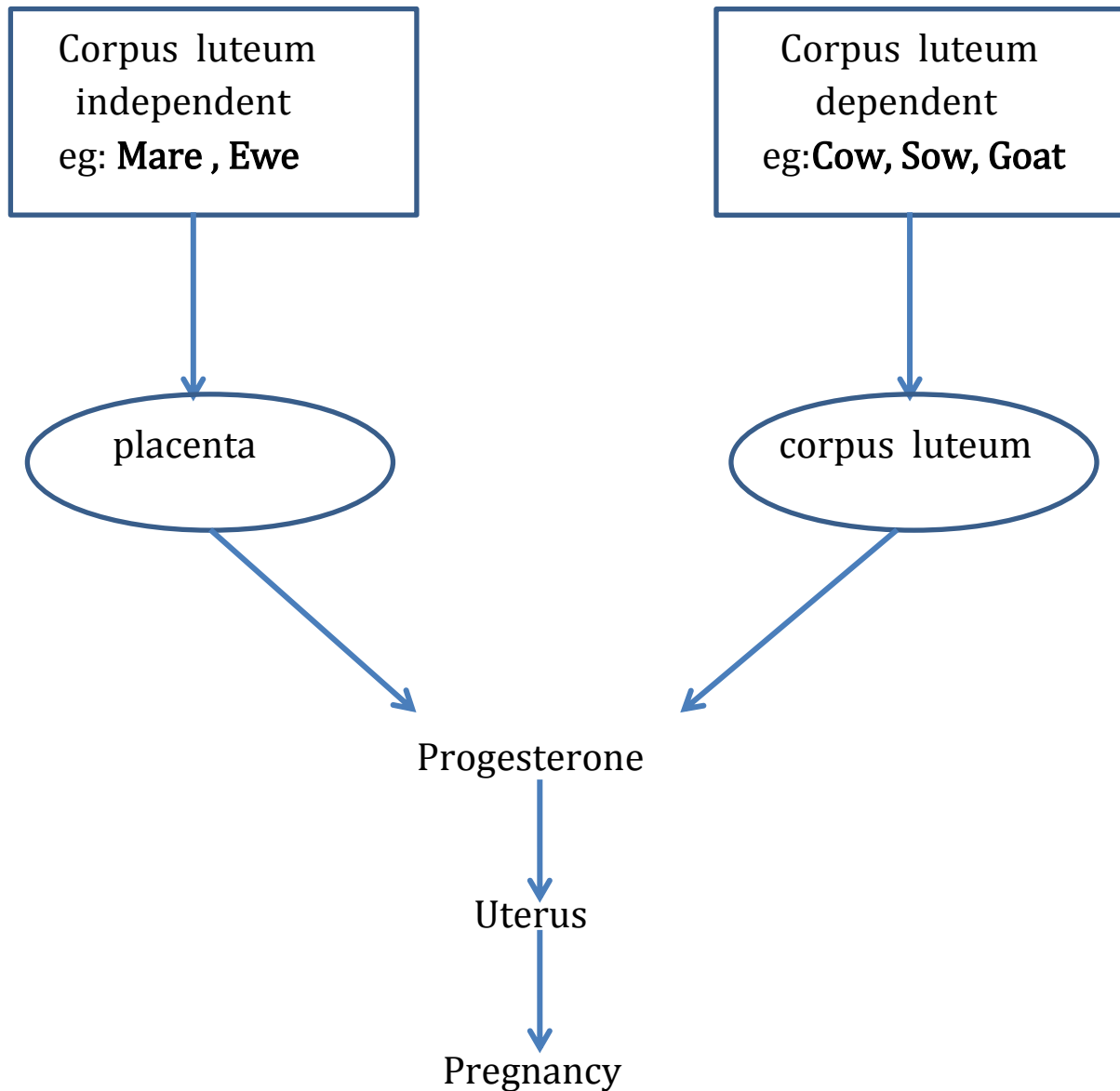
It arises from prepubic tendon to acetabular notch

It prevent the abduction of the hindlimbs. That's why the horses are always **kick on the backside** .

Ox:

Absence of accessory ligaments (*pubio-femoral*)

It make a free abduction movement that allows the hind limb to **kick on lateral side / cow kick** .



Flunixin meglumine - very good drug for converting the arachidonic acid into the prostaglandin f2 alpha.

Progesterone - Nanogram - immunosuppressant

Estrogen - Picogram - immunostimulant

Bio – chemical parameters

Parameters	Unit	Bovine	Caprine	Canine
Glucose	Mg/dl			
Total protein	g/dl			
Albumin	g/dl			
BUN	Mg/dl			
Creatinine	Mg/dl			
AST	U/L			
ALT	U/L			
Calcium	Mg/dl			
Phosphorus	Mg/dl			
Magnesium	Mg/dl			
Potassium	mEq/L			

Case no : 1 History - Buffalo calf (50 days old)

With a history of sunken eye ball , lateral recumbency , anaemic , cannot able to stand well , **dark yellowish semi –solid consistency of faeces should voided** , bradycardia , dandruff around throughout the body , absence of menace reflex and pupillary light reflex , presence of corneal reflex and palpebral reflex , subnormal temperature with cold extremities (head , neck, forelimb and hindlimbs), absence of swallowing reflex .

Confirmatory diagnosis : Faecal sample - under the microscopical examination –**heavy coccidial infection (++++)**

The calf is died after administration of the oral drenching , due to absence of swallowing reflex . The medicine should aspirated . It will comes out after died .

Treatment of coccidial infection in buffalo calf :

Case no :2 **History :** 2years old , 7 months pregnant cow present with the history of swelling of entire right forelimb from scapula to coffin joint since yesterday evening . Owner allowed the animal for grazing yesterday afternoon . continuous bleeding was occur at the fetlock joint . Already treated by local veterinarian . animal in lateral recumbency , after it stand by giving the external support.

Surgery ward : suspect a fracture in the elbow joint .

Collection of blood for **Whole Blood Clotting Time** - the collected blood is not clot **20mins** after collection –positive for viper snake biting .

Examination of the fetlock joint : there will be a continuous bleeding is noticed .(suspect snake bite)

Before the treatment animal will collapse due to severe respiratory arrest .

Advise to student : if any swelling with respiratory distress is presented animal , before going to write the case sheet go for whole blood clotting time and after treat the animal with snake venom antiserum , after finishing the treatment going for other physical examination . Don't take these type of cases in careless.

Treatment is only **snake venom antiserum** mixed with **normal saline** is enough to treat the case .

Case no:3 **History** – The buffalo present with the history of **haemoglobinuria** with pyrexia for past 10 days . Animal cannot able to stand well. Animal is full term pregnant. Fever temperature - 40°C . Pale mucus membrane. Animal calved 3 times . Last calving was done 1 year back. Feeding habit not satisfactory. Void pellety dung with **coffee colour urine**.

Obstetrical ward :

The pregnancy was induced by using PGF2alpha and dexamethasone injection.

Next day :

Rectal examination - it reveal's fremitus -+++ ,

Presence of pedal and eye ball reflex,

Vaginal examination – it reveal's two finger dilatation of cervix.

Blood report reveals :

Haemogram	Differential count
Hb – 7.5 g/dl	Neutrophils – 57 %
PCV - 22 %	Lymphocytes – 42%
RBC - 2.8×10^6 /ml	Monocytes - 1%
WBC - 17.7×10^3 /ml	

Blood smear – **No blood parasite** could be detected

Case no :4 **History** – A sheep present with the history of cannot able to stand well for past 3 days. 3days back animal was allowed to grazing in afternoon and it fall down at evening time. Animal in lateral recumbency . Feed intake not satisfactory . Animal is **3 months pregnant**. Slightly pupil dilatation will occur. The animal was already treated by ILFC professors by using **Enrofloxacin , Meloxicam and D20** .Because they suspect the case is a Pregnancy toxaemia (Ketosis).

Gynaecology ward :

Auscultation of right lower flank region : fetal heart beat could be detected.

Ultrasonographic examination : It reveals presence of heart beat .

Pregnancy - No abnormality could be detected.

Diagnosis :



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DEPT. OF VETERINARY GYNAECOLOGY AND OBSTETRICS

COMMON POSTPARTUM METABOLIC DISEASES IN CATTLE

1. MILK FEVER /PARTURIENT PARESIS

Etiology : **Hypocalcemia** just before (or) after parturition

Normal calcium level – **9.7-12.4 mg/dl**

(below 8mg /dl cause milk fever)

Clinical signs

- Cold extremities
- Sub-normal temperature
- **S-curve in the neck**
- Failure of pupil to contract
- Sternal recumbency
- Constipation



2. POSTPARTURIENT HAEMOGLOBINURIA

Etiology : **Hypophosphatemia**

Normal phosphorus level -**5.5 - 8 mg/dl**

(below 5mg/dl cause post parturient haemoglobinuria)

Clinical signs

- Haemoglobinuria
- Normal temperature
- Haemoglobinemia
- Prostration

3.KETOSIS / ACETONEMIA

Etiology : **Negative –energy balance** result in **Hypoglycemia , Ketonemia**

1.**primary spontaneous ketosis** - hereditary predisposition

2.**primary nutritional ketosis** (more common)

3.**secondary ketosis** due to metritis , traumatic gastritis , LDA

Normal blood glucose level – **45-75 mg/dl**

(In ketosis blood glucose drop into 18-20mg/dl)

Clinical signs

- Rapid loss of weight
- Staggering gait
- Trembling
- Gradual drop in milk flow
- Circling movement

4.HYPOMAGNEAEMIC TETANY

Etiology : **Hypomagnesemia , Hypocalcemia**

Normal magnesium level – **1.8-2.3mg/dl** (calcium level -**9.7-12.4 mg/dl**)

Clinical signs

- Hyperaesthesia
- Opisthotonus
- Tetanus
- Aggressive
- ↑ Temperature , ↑ Heart rate

PSEUDOPREGNANCY

MATERNAL BEHAVIOUR + PHYSICAL SIGNS OF PREGNANCY (OCCURS IN ALL DOGS , NO ONE EXCEPTION)

It's a normal physiological process occur in all female dog

SYNONYMS : False /Phantom/Hysterical Pregnancy /Pseudocyesis

Two types of pseudopregnancy

1.COVERT PSEUDOPREGNANCY

Affected animal not exhibiting the pseudopregnancy signs . Occurs in every non-pregnant ovarian cycle



Considerable **mammary gland development** associated with the luteal phase of every ovarian cycle

Termed as "**Physiological /Covert Pseudopregnancy** "

2. OVERT PSEUDOPREGNANCY

Affected animal exhibiting the pseudopregnancy signs . **Prolactin** is responsible for most of the behaviors seen during pseudopregnancy episodes

CLINICAL SIGNS : Mothering Of Toys , Nesting Behavior , Aggression , Enlargement Of Abdomen ,Milk From Teats

ETIOLOGY : **Prolactin Hormone**

OCCURRENCE : Seen in **45-60days** after a normal oestrus (Heat) period . When progesterone is decrease , it induce prolactin . **Prolactin is responsible for udder enlargement , mothering ability**

OTHER POSSIBILITY : 1.**Spaying Of Female Dog** at end of the estrus cycle . removal of P4 source (Ovary) ⇒That induce prolactin ⇒Dog shows the pregnancy signs

2. **Hypothyroidism** & **Liver Dysfunction** also prolong the pseudopregnancy signs due to alter the hormone metabolism

TREATMENT : 1. Most cases medical **treatment not require**

2. Permanent prevention is **spaying** , done at 8-10 weeks after oestrus period

3. Physical reduction of stimulation by ,

* Removing the toys from the dog,

* Prevent self-nursing by e-collars,

* Introduce into new environment

4. Anti-Prolactin drugs : such as

1. **CABERGOLINE** -5 μ g/kg/day

2. **BROMOCRIPTINE** -10-100 μ g/kg/day



It produce severe vomiting , before that use Anti-emetic drugs .
(Eg : **Ondansetron**)

➤ (**Don't use metoclopramide** – have a **prolactin activity**)





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CYSTIC ENDOMETRIAL HYPERPLASIA AND PYOMETRA COMPLEX IN BITCHES

Cystic endometrial hyperplasia is an abnormal response of the bitch's uterus to ovarian hormones

Etiology: Excessive / prolonged stimulation of the progesterone in luteal phase of the estrus cycle

Pathogenesis :

Chronic progestational stimulation in luteal phase



Abnormal accumulation of fluid within the
endometrial gland & uterine lumen



Opportunistic pathogen - Escherichia coli proliferates & result in excessive amount of secretory fluid accumulation inside



Decreased local immunity & local tissue degeneration called as

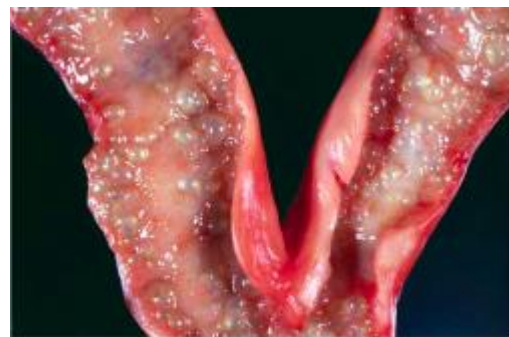
"cystic endometrial hyperplasia".

Classification:

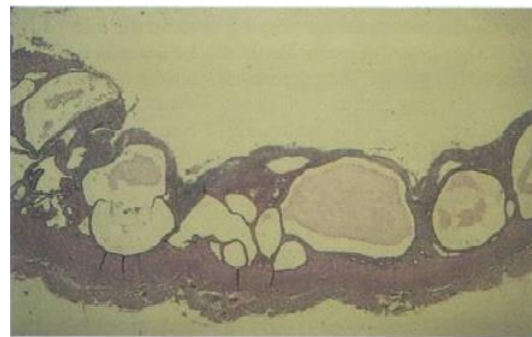
1. Cystic hyperplasia – pyometra complex
2. Endometrial hyperplasia associated with pseudo pregnancy
3. Oestrogen induced hyperplasia
4. Endometrial polyps

Clinical signs

- Hyperthermia
- Polyuria & polydipsia
- Vomiting
- Diarrhoea
- Abdomen distension
- Purulent vaginal discharge
- **BUN > 8- 28mg/dl**
- **Creatinine >0.5-1.8mg/dl**
- Elevated serum AST & ALT
- Neutrophilia



CYSTIC ENDOMETRIAL HYPERPLASIA-DOG



HISTOLOGY OF THE CYSTIC ENDOMETRIAL HYPERPLASIA

Treatment

- ✓ Medical management as per the owners request with antibiotic and intra venous fluids
- ✓ Ovario-hysterectomy is best option

Poisonous	Antidotes	Dose rate (Ruminants)
<i>Acetaminophen</i>	acetylcysteine	
<i>Anticholinergics</i>	physostigmine	
<i>Benzodiazepines</i>	flumazenil	
<i>Ca channel blockers</i>	calcium chloride	
<i>Cyanide</i>	sodium nitrite , sodium thiosulfate	
<i>Nitrite /nitrate poisoning</i>	methylene blue	
<i>Heparin</i>	protamine sulfate	
<i>Iron</i>	deferoxamine	
<i>Insulin</i>	glucagon	
<i>Lead</i>	dimercaptosuccinic acid	
<i>Warfarin</i>	vitamin k	
<i>Arsenic</i>	BAL -british antilewisite	
<i>Urea poisoning</i>	5% acetic acid (vinegar)/cold water/broad spectrum antibiotics	
<i>Opc poisoning</i>	2-pam (within two hours)/ atropine sulfate	
<i>Carbamate poisoning</i>	atropine sulfate (2pam -contraindicated)	

