Benha University
Faculty of Veterinary Medicine
Animal Medicine Department
Veterinary Internal Medicine
Fifth grade students – Large Ruminant Medicine

Time allowed: 3 hours

Date of exam: 21-6-2012

ANSWER MODEL

I-

(a) Enumerate the causes and write on the pathogenesis of abomasal displacement? (5 marks)

1- The disease occurs most commonly in heavy milk producing cows, specially after parturition (6 weeks post-parturient in 91 % of cases).
2- Cattle feeding heavy grains, such as corn and the roughage level is less than 17 % of the diet.
3- In some cases, the disease is associated with unusual activity, such as jumping on other cows during estrus.
4- Hypocalcaemia at the time of parturition is an important contributing factor
5- Cattle reared under confinement are more susceptible than those under grazing due to lack of exercise.

Pathogenesis

1- Heavy grain feeding increases the concentration of free volatile fatty acids in the abomasum, which inhibit its motility leading to abomasal atony. Consequently, the flow of ingesta from abomasum to duodenum is retarded and accumulated in the abomasum. Gas production is increased, especially methane, leading to further distention following by displacement.
2- During the late stage of pregnancy, the rumen is lifted from the abdominal floor by the expanding gravid uterus and the abomasum is pushed foreword and left under rumen. After parturition, the rumen subsides trapping the abomasum leading to displacement, specially when the abomasum is atonic.

(b) Describe the clinical picture of embolic suppurative nephritis in cattle? (5 marks)

(c) 1- Usually there is insufficient renal damage to cause signs of renal dysfunction, but signs of toxaemia and the primary disease are usually present.

(d) 2- Enlargement of the kidney may be palpable on rectal examination.

(e) 3-Spread of suppurative emboli to the renal pelvis may cause a syndrome very similar to that of pyelonephritis

II-

(a) Plan your diagnosis for downer cow syndrome (5 marks)

I- Metabolic disturbances and nutrional deficiency diseases:

(A) Metabolic Disorders

1- Calcium in partureint hypocalcaemia or partureint paresis (milk fever)

2- Phosphorous in post-partureint haemoglobinuria or hypophosphataemia of buffaloes.

3- Magnnesium in Hypomagnesaemic tetany or lactation tetany .

4- Sugar in Ketosis or acetonaemia of cattle

5- Fat in fat cow syndrome (pregnancy toxaemia of cattle).

(B) Nutrional deficiency diseases:

1- calcium , phosphorous and vitamin – D deficency in osteomacia (milk lameness).

2- Traces elements defeciencies and disturbances minor electrolytes :

a) Copper in falling disease in cattle

b) Cobalt in bovine ketosis.

c) Potassium in Hypocalaemia-particularlly in the so-called Creeper Downer cows which are alert and crawl but unable to rises .

d) Protein deficiency in Hypoproteinaemia particularlly if accompanied by unspecific digestive disturbances.

II- Non infectious medicinal diseases:

1- Sever cases of rumen acidosis (due to rument histminosis).

2- Liver cirhsis (due to imairment of liver function especially the detoxification and inactivation of steroid hormones particularly oestrogen).

3- Liver absesses (due hyper or hypoglycaemia).

4- Last stages of pneumonia (due to hypoxia).

5- Last stages of pyelonepheritis (due to hypoxia).

6- Acute circulatory crisis (due to acute heart failure or acute circulatroy failure which both lead to brain ischaemia).

7- Traumatic pericarditis (due to generalized toxaemia).

8- Encephalopathy (encephalitis, meningitis, meningoencephalitis or encephalomalacia).

9- Sever thirst (due to haemoconcentration and hypoglycaemia).

10- Sever thirst (due to haemocncentration and dehydration .

11- Leukaemia.

12- sun stroke (over heating).

III- Infectious diseases:

Generally the last stages of any acute febrile infectious disease can cause recumbency, for instance:

A)Anthrax B) Black leg c) Malignant oedema

D) Mucosal disease E) Acute mastitis (due to toxaemia).

F) Generalized T.B. (due to tuberculous meningitis).

G) Last stage os tetanus (due to generalized tonic spasm).

IV- Surgical and obstitrical causes for recumbency:

Generally injuies to the locomotor system- musclo-skeletal- system (nerves, muscles, joints and bones) can causes in some cases recumbency:

1- Bones-- Broken bones (especially vertebral column and pelvis).
2- Joints -- Arthritis (especially knee or hock joints).
3- Muscles -- Ischamic muscle necrosis or muscular rheumatism.
4- Nerves: pressure on nerves (especially obturator nerve and this usually causing recumbancy in the last third of pregnancy if too large foetus is intrauterine in present).

Also nerves injuries (due to paresis or paralysis).

* Acute endometritis (due to generalized toxaemia).
* Uterine torsion (due to rupture of uterine artery).
* Uterine rupture (due to diffuse peritonitis).

Clinical findings:

(A) Typical cases :

1- Affected animals usually show no sings of illness until go down >
2- Bright and alert and make frequent attempts to rise, but unable to completely extending their legs (sternal recumbency).
3- Eat and drink moderately well and defecation and urination normal.
4- Temperature usually normal, somtimes elevated respiration unaffected and pulse usually weak .

(B) A typical cases:

1- The signs may be more marked and include a tendency to lie in lateral recumbancy with the head drawn back.

2- Still more severe cases, affected animals may show hyperaesthesia and sometimes tetany, os limbs.

3- These more severe cases do not usually eat or drink.

Laboratory diagnosis.

Depends mainly on the suspected cause of recumb-ency.

- CPK and SGOT are usually elevated.
- Proteinuria or even myoglobinuria may be observed due to muscle damage from prolonged recumbency and muscle damage attributed to ischemia of muscles.

(b) Write on the treatment of bronchopneumonia in cattle (5 marks)

1- Isolation of the affected animals especially if infectious, disease suspected, isolation must be in warm, well ventilated, draft free place and provide with ample fresh water and light nourishing food (parenteral feeding if animal not eat).

2- The choice of antibacterial, agent (antibiotic or sulfonamide, based on culture and sensitivity testing.

or

the choice of antiparasitic agent if verminous pneumonia is suspected.

3- The use of corticosteroid as an antiinflammatory agent e.g. Dexamethazone.

4- The use of antihistaminic e.g. avil

5- The use of bronchodilator to i m prove ventilation e.g aminophylline and theophylline.

6- The use of expectorants according to the type of cough:

- When cough is painful and exhausting and the secretion tenacious, sedative expectorant such as ammonium or potassium salt, stimulate secretion of protective mucous and lessen coughing.

- When cough is soft and bronchial exudate voluminous as in chronic bronchopneumonia stimulant expectorant is more valuable. .

- When cough is exhausting and interferes with activity but there is little exudation an anodyne expectorant, such as belladonna, codine, morphine or heroin is indicated.

(c) Explain: Oedema is characteristic for some cardiovascular diseases? (5 marks)

In case of traumatic reticuloperitontitis, increased pressure over the heart from the inflamed pericardial sac interfere with the complete filling of heart chambers during

relaxation leading to venous congestion and accumulation of blood that leads to leak or ooze of blood serum to cavities and abdominal wall.

III-

(a) The type and quantity of food play a role in the induction of some medicine problems in large ruminant. Discuss this statement and plan your differential diagnosis for these diseases problems (7.5 marks)

Poor quality hay and food leads to simple indigestion

Highly fermentable foods such as root crops and legumes lead to tympany

Finely ground grains lead to impaction in calves specially feedlots

High carbohydrate intake may lead to lactic acidosis or abomasal dispalcemennt

High barseem intake predisposes for hypophosphatemia in lactating cows

High molybdenum content of diet lead to hypocupperosis

High urea content leads to metabolic alkalosis

High cabbage intake may lead to goiter

High unsaturated fatty acids leads to vit A deficiency

Low cobalt intake lead to unthriftiness and anaemia

Low selenium and or vit A in the diet may lead to white muscle disease in calves

(b) Change in the behavior is characteristic for some metabolic and nutritional deficiency problems in large ruminant. Discuss this statement and plan your differential diagnosis for these diseases problems (7.5 marks)

Star gazing in hypomagnaesemia

Sternal recumbecy in hypocalcaemia

Downer position in downer cow

Lameness with leg shifting in osteomalacia

Enlarge joints with arched back in rickets

Ataxia and icoordination in ketosis and hypomagnesaemia

Convulsions and tremors in hypomagnesaemia

Knuckling on feedlock and standing on tip toe in white muscle disease

VI- Please answer one of the following

(a) You are called to examine a group of calves recently transported for long distance. Some calves suffered from mouth breathing and some nervous manifestions. On clinical examination, the temp. was 41ºC. Plan your diagnosis, differential diagnosis and line of treatment (10 marks)

Suspected case: heat stroke

Differential: pneumonia (enzootic)

Vit A def

Hypomagnesaemia

(must be in table)

(b) You are called to examine a 3-month old calf with nervous manifestation. There was some changes in the skin. Temp. was 38 ºC. Plan your diagnosis, differential diagnosis and line of treatment. (10 marks)

Vit A Def:

Differential: hypomagnaesemia

Heat stroke

Good luck
Animal Medicine Family