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Department Of Veterinary Surgery And Radiology

Surgical Affection Of Small Intestine

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Principle of Intestinal Surgery

- Correcting the fluid and electrolyte imbalance is of great priority before venturing for intestinal surgery
- Broad spectrum antibiotic is used as prophylaxis
- 2nd and 3rd generation Cephalosporin is employed
- Monofilament synthetic absorbable (PDS) Or Synthetic non-absorbable (Prolene) are excellent choices
- Simple Interrupted Pattern is ideal

➤ Intestinal Obstruction

- Obstruction is the most common indication for intestinal surgery. This condition is relatively infrequent in ruminant although sporadic occurrence has been reported in other species. It may be termed as :
- **Strangulating obstruction** are invariably associated with a compromised enteric blood supply
- **Simple obstructions** are not associated with a compromised vascular supply
- **Complete or partial obstruction** depending upon the degree of occlusion of intestinal lumen
- **High or proximal obstruction** occurs in duodenum and jejunum
- **Low or distal obstruction** occurs in ileum and colon

➤ Etiology

❑ Anatomical obstruction

❑ Intra luminal obstruction :

❑ (1) Linear and non-linear foreign body

❑ (2) Faecolith

❑ (3) Nodular worms

❑ (4) Impacted ingesta

❑ *Intramural masses:*

❑ (1) Neoplasia

❑ (2) Stricture

❑ (3) Granuloma

❑ (4) Haematoma

□ Functional obstruction :

- *Paralytic ileus :*
 - (1) trauma due to abdominal surgery
 - (2) peritonitis
 - (3) prolonged distension of bowel due to accumulation of gas
- Pseudo-obstruction :
 - (1) sclerosing enteropathy
 - (2) systemic lupus erythematosus
 - (3) lymphosarcoma

□ Extramural compression :

- (1) Adhesions
- (2) Hernia
- (3) Neoplasms
- (4) Strangulation
- (5) Intussusception
- (6) Volvulus

Congenital lesion :

- (1) Ateria or malformation of the intestine
- (2) Meckel's diverticulum

□ Clinical signs

- Colic of low or (transiently) moderate intensity which can persist for several days
- There is gradual abdominal distension and tense abdominal wall
- Anorexia , vomiting (especially in high obstruction) is also observed
- There are no faeces in the rectum or only a small amount of faeces mixed with sticky mucous
- There is dehydration and scanty urine with high coloured

□ Diagnosis

- From the history and clinical signs
- Palpation of the abdomen and rectal examination
- Laboratory examination : Increased packed cell volume , azotaemia , hypokalaemia and hypochloraemia
- Ruminal fluid – high chloride concentration
- Radiograph of abdomen reveals trapping of air in the bowel
- Ultrasonographic examination may be helpful to detect the site of obstruction
- Definitives diagnosis of the cause may require an exploratory laparotomy

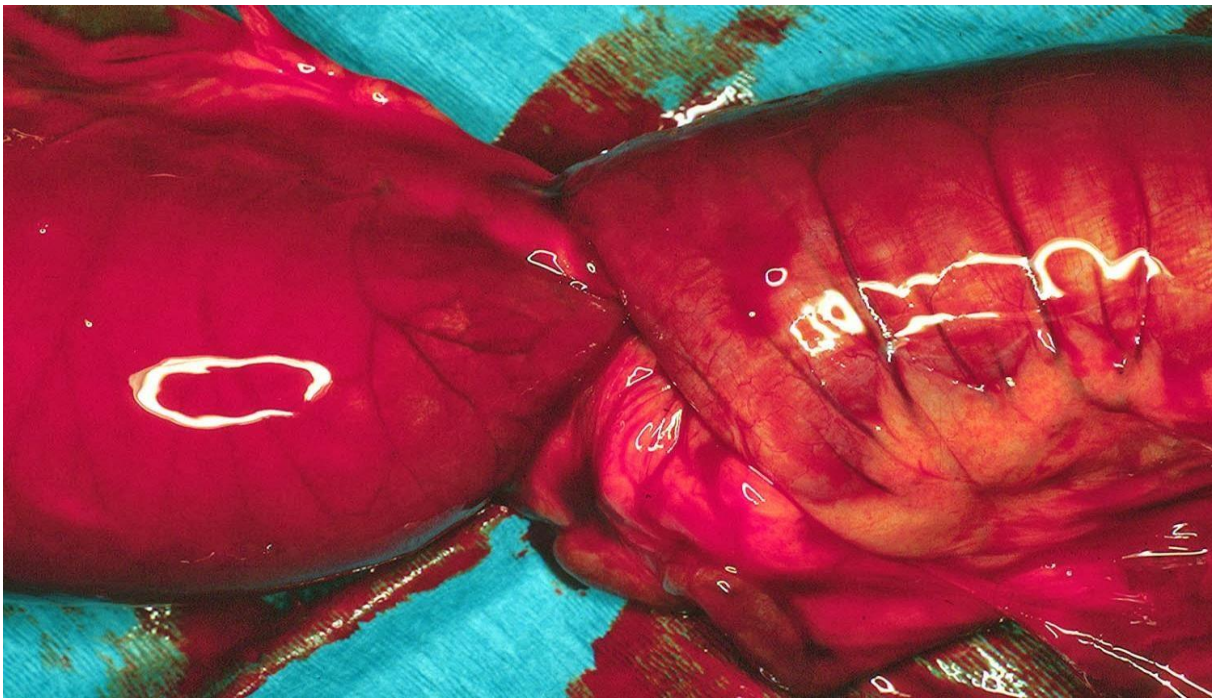
□ Treatment

- Fluid therapy based on clinical and laboratory findings should be instituted prior to surgery to counteract dehydration
- An enterotomy should be made midway along the side of the obstruction (small animal) , right flank laparotomy (ruminants) and as much of the foreign body as should be removed by gentle traction
- In chronic cases , perforation followed by fibrosis may occurred some time previously , and the bowel retains its pleated conformation after removal of the foreign body
- If neoplasm is the cause , growth should be carefully excised and removed and if hernia is responsible , defect should be corrected accordingly

Intussusception

Intussusception - the telescoping of a portion of intestine (the intussusceptum) into the adjacent segment (the intussusciens) – develop primarily at the ileocolic valve and in the jejunum. This condition is seen most frequently in young calves & pups .

- **Etiology** – most intussusceptions are considered to be idiopathic , but predisposing factors include parasitism, neonatal diarrhoea, an intestinal mass (polyp, granuloma, neoplasm), presence of linear foreign body.
- **Symptoms**
 - Passing of small quantity blood stained faeces
 - Vomiting , straining , and dehydration are observed



➤ Treatment

- Fluid therapy should be instituted prior to surgery to counteract dehydration
- Laparotomy is to be performed and attempt should be made to reduce the lesion manually by squeezing the intussusception while applying gentle traction to the intussusceptum.
- If the intussusception cannot be reduced , or if after reduction the segments of intestine are not viable , the resection and anastomosis is indicated
- In all cases , enteroplication should be performed to reduce the risk of recurrence

➤ Torsion and Volvulus

- Volvulus is axial rotation of the mesentery and attached small intestine whereas Torsion of intestine is a twisting of bowel on its long axis. The condition is rare in buffaloes, dogs but may occur in bullocks and horses.
- Etiology-
- Vigorous activity
- Dietary
- Trauma
- Rolling of cows to correct uterine torsion or left displacement of abomasum

➤ Pathology

- Root of mesentery twist and cranial mesenteric artery , vein or their branches are obstructed .



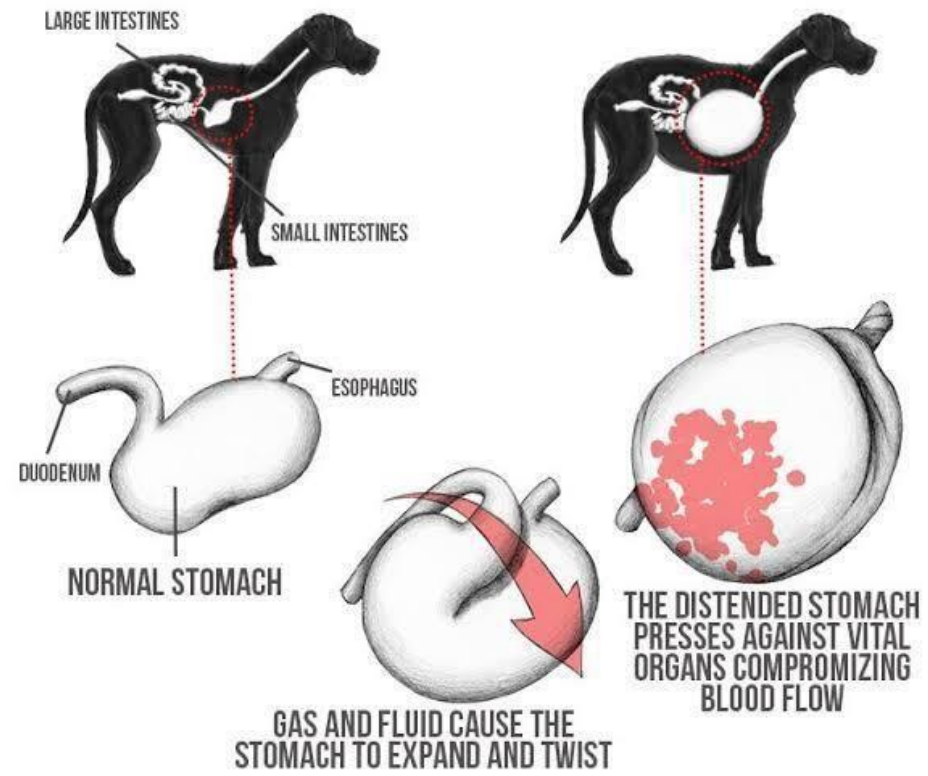
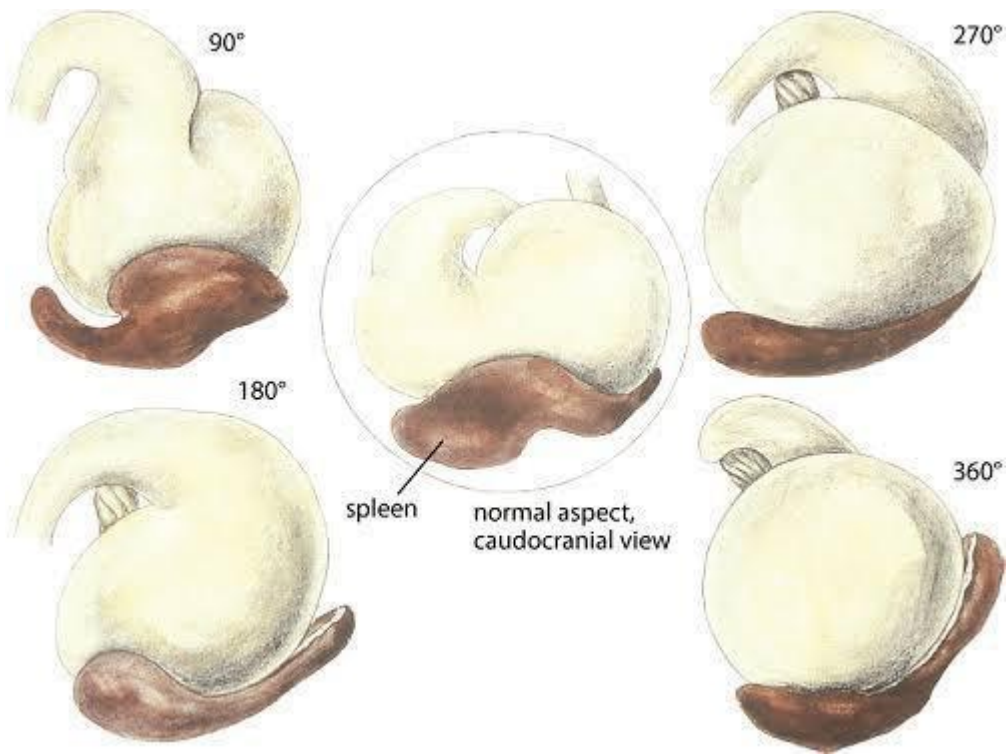
- Mechanical and strangulating obstruction .



- Rapid ischemic damage to small intestine.



- Onset of endotoxaemia



➤ Symptoms

- Horse–colic , initial high temperature, followed by subnormal temperature.
- Cattle-colic , distension of abdomen and varying degree of ketosis.
- Dog–abdominal distension, paracentesis reveals sero-haemorrhagic fluid in peritoneal cavity.

➤ Treatment-

- Surgical management involves decompression and derotation of the intestine.
- Massive intestinal resection may be advisable if the portion of the bowel is too devitalized.
- Broad spectrum antibiotics and intravenous fluids are recommended as supportive therapy.

➤ Enterotomy

- **Indication**- removal of foreign bodies and inspection of the mucosa for evidence of the ulceration, stricture or neoplasia.
- **Site**—distal to the lesion to avoid incising into devitalized bowel at the lesion or dilated bowel proximal to it.
- **Technique**— full thickness incision in the antimesentric border and enlarged as necessary.
- Removal of the foreign body through the incision avoiding wound margin tearing.
- Removal of residual intestinal contents by suction.
- Closure of defect with a simple interrupted or simple continuous suture pattern.
- Lavage of enterotomy site with warm sterile saline covered with omentum and replaced back into the abdominal cavity.

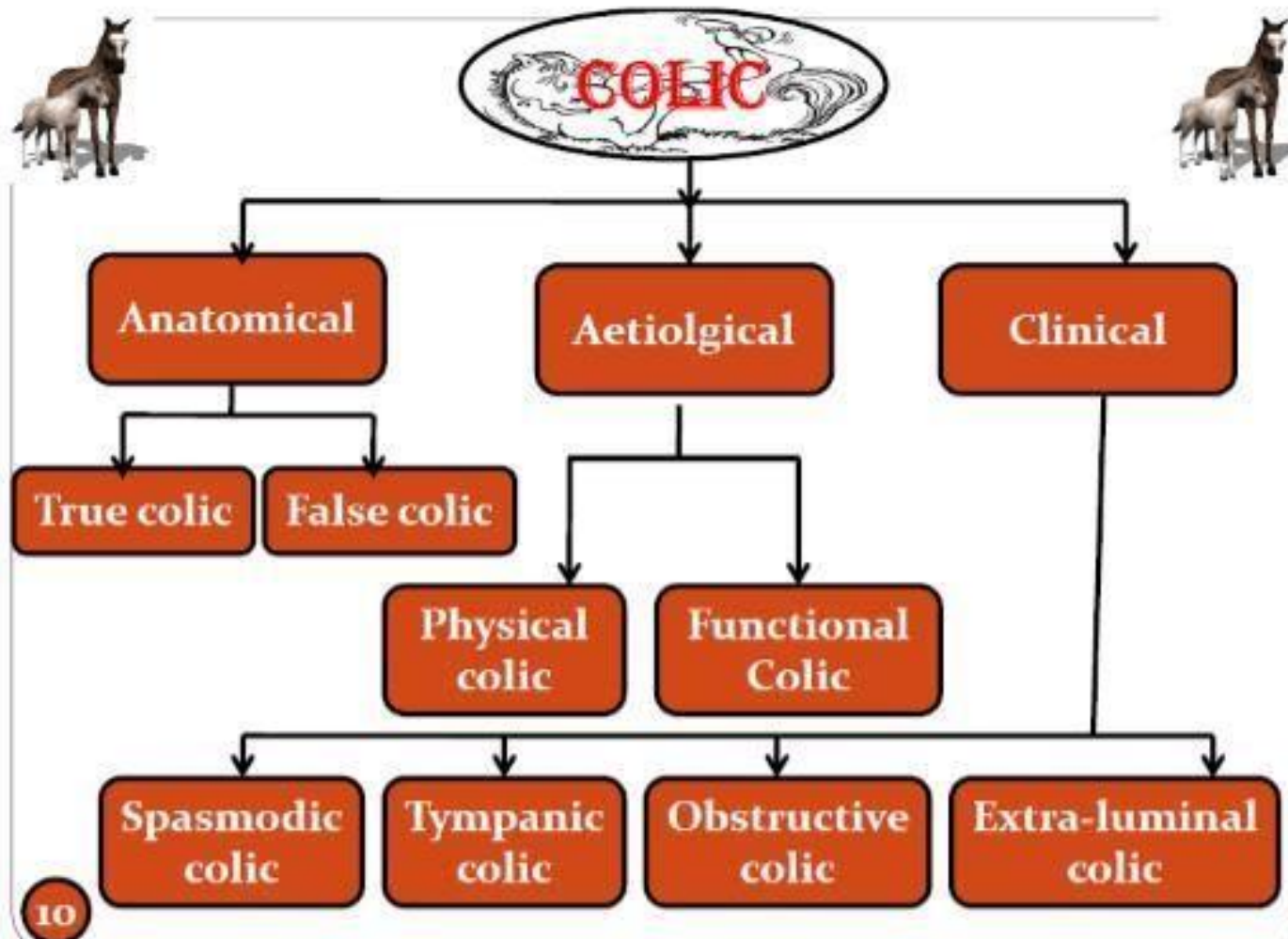
➤ Colic

- Colic is a general term , refers to any type of abdominal pain or pain in the gut due to a gastrointestinal disturbance. It is one of the most common diseases in horses and can be brought on the various factors.
- **Causes** – irregular exercise & feeding pattern.
- Lack of water.
- Sudden diet change.
- Too much intense exercise.
- Low grazing.
- Too much feed concentrate
- Stress
- Sandy soil causing constipation
- Previous abdominal surgery
- Eating mouldy or spoiled hay , grain or forage

➤ Signs and symptoms

- ❑ Colic is not a disease, but a group of symptoms.
- ❑ **Mild colic** symptoms include;
 - ❑ Lethargy
 - ❑ Loss of appetite
 - ❑ Fewer droppings
 - ❑ Stomach ache
 - ❑ Rock back against a solid object
- ❑ **In advanced stage**
 - ❑ Increased heart rate
 - ❑ Shallow breathing
 - ❑ Sweating and swelling of the abdomen
 - ❑ Cool extremities
 - ❑ Groaning or rolling

➤ Classification of colic



➤ Spasmodic colic

- Clinical condition when there will be a violent irregular peristaltic movement due to intestinal hypermotility and secretion
- **Etiology**
- Drinking cold water after vigorous exercise
- Embolism of mesenteric artery
- Soil, mud, etc; poor quality food
- Heavy parasitic, ascarid, viral, bacterial infection
- **Pathogenesis** →
- Agent irritation → stretching of nerve endings of stomach/intestinal wall

➤ Line of treatment

- Correction of dehydration by fluid therapy
- Use of spasmolytic drugs to relieve pain i.e. pethidine hydrochloride at the dose rate of 1mg/lb b.wt. or atropine sulphate 15 to 30 mg depending on b.wt. or inj. Baralgin- 10 to 30ml depending on bt.wt. valginate -20-6-ml may be given
- Use of tranquilizers e.g chlorpromazine(largactil) or triflupromazine(siquil)
- Use of sedatives chloral hydras-30-60g orally
- Use of oilogenous purgatives . liquid paraffin- 500to1000ml linseed oil- 500to1000ml
- Easily digestible laxative food - bran mash and linseed mash along with 60g common

➤ *Tympanitic colic*

- It is a condition where pain is due to distension of any part of gastro- intestinal tract owing to excessive accumulation of gases following ingestion of easily fermentable foodstuffs.
- **Clinical findings;**
- Extreme pain , sudden or continuous in nature
- Distension of abdomen either the left or right flank region
- Tympanitic sound on percussion
- Occasional sweating
- Dyspnoea
- Increase of pulse respiration & blood pressure

➤ Diagnosis

- ❑ Complete stoppage of flatus
- ❑ Intense pain
- ❑ A high pitched ping sound may be simultaneous auscultation
- ❑ Obstruction is evident through per-rectal exploration
- ❑ Line of treatment:
- ❑ Symptomatic treatment: central sedative chloral hydrate 30 to 50g orally with bland substance to relieve the severe pain.
- ❑ Other drugs like pethidine hydrochloride or analgesic as used in spasmodic colic .
- ❑ A course of antihistamines , e.g Phenergan(5%) 15 to 20 ml through intra- muscular route

Curative treatment

- Mineral oil or vegetable oil half to 2 litres orally
- Mixture containing oil turpentine-60ml; Lysol-4ml; linseed oil 1/2 litre ; liquid paraffin-1litre
- R/turpentine oil 30ml
- Spt. Ammon 30
aromate ml
- Tr. Asafoetida 30m
- Spt. Chloroform |
- Tr. Cardco 30m
- Tr. carminative |
- Mft. Haust 30m
- Cholinergic drug (neostigmine) in low dose (2-4mg/500kg) is indicated to restore motility of the gut

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Thank you