

Equine intestinal diseases



Anatomy of the gastrointestinal tract of the horse



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Small intestine

Duodenal ulceration

- Duodenal ulcer usually occurs in conjunction with gastric ulcer and the same therapy is used

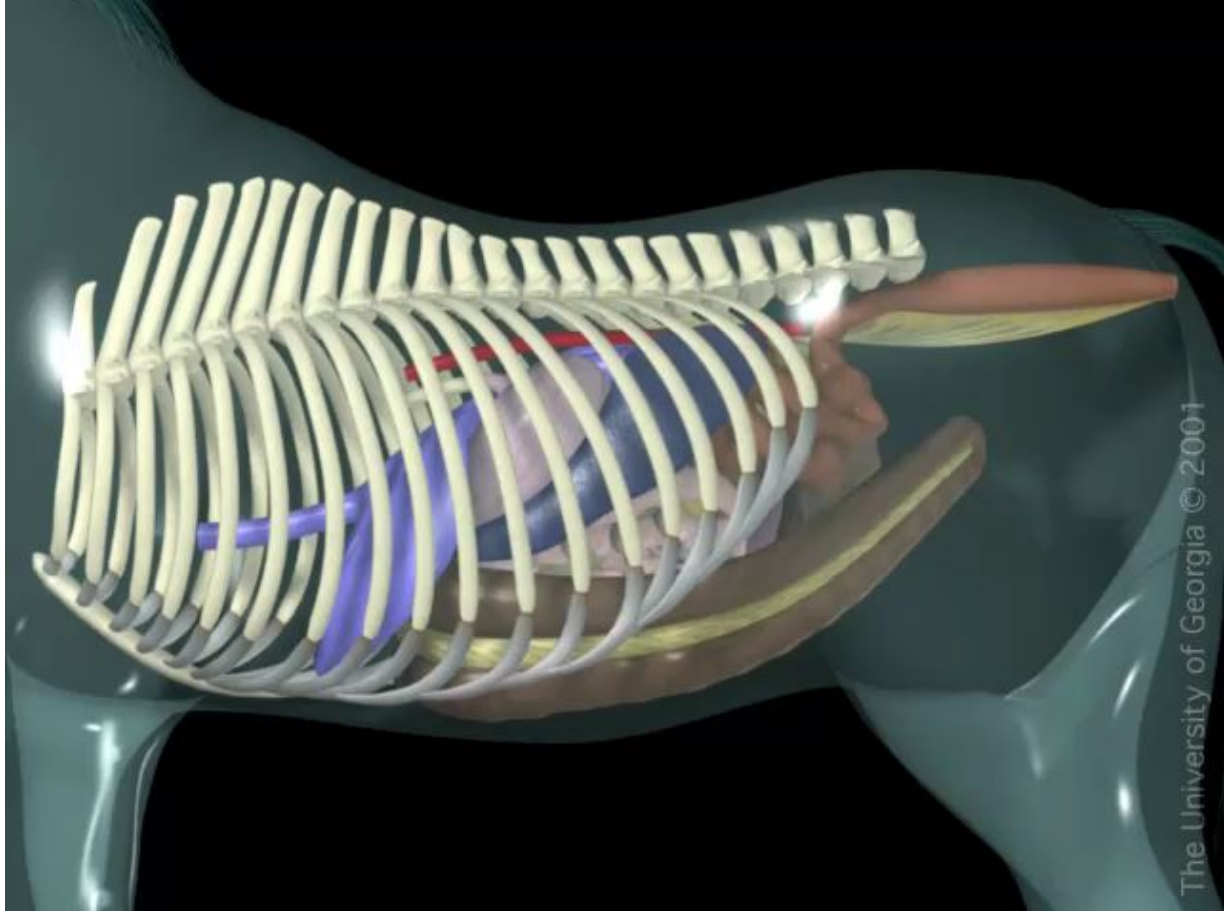
Spasmodic Colic (Spasm)

- The most common form of colic in horses
- Occurs due to **spasm of intestinal musculature**
- Diagnosis is based on the **lack of other findings**
- Abdominal pain is relieved by administration of mild analgesics or spasmolytic agents
- Abdominal pain is mild, and the signs occurs intermittently



Proximal Enteritis (duodenum and proximal half of the jejunum)

- Cause
 - The cause is unknown
 - Clostridium? Salmonella?



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Proximal Enteritis (duodenum and proximal half of the jejunum)

- Clinical signs:
 - Acute abdominal pain
 - Depression, Dehydration,
 - Fever- rare in other form of colic
 - Gastric reflux (orange, bloody in color, foul-smelling liquid)
 - Breath rate and heart rate depend on volume of reflux in gaster
 - Rectal examination- you feel distended loops of small intestine- like in ileal impaction or small intestinal strangulation (USG)

Proximal Enteritis (duodenum and proximal half of the jejunum)

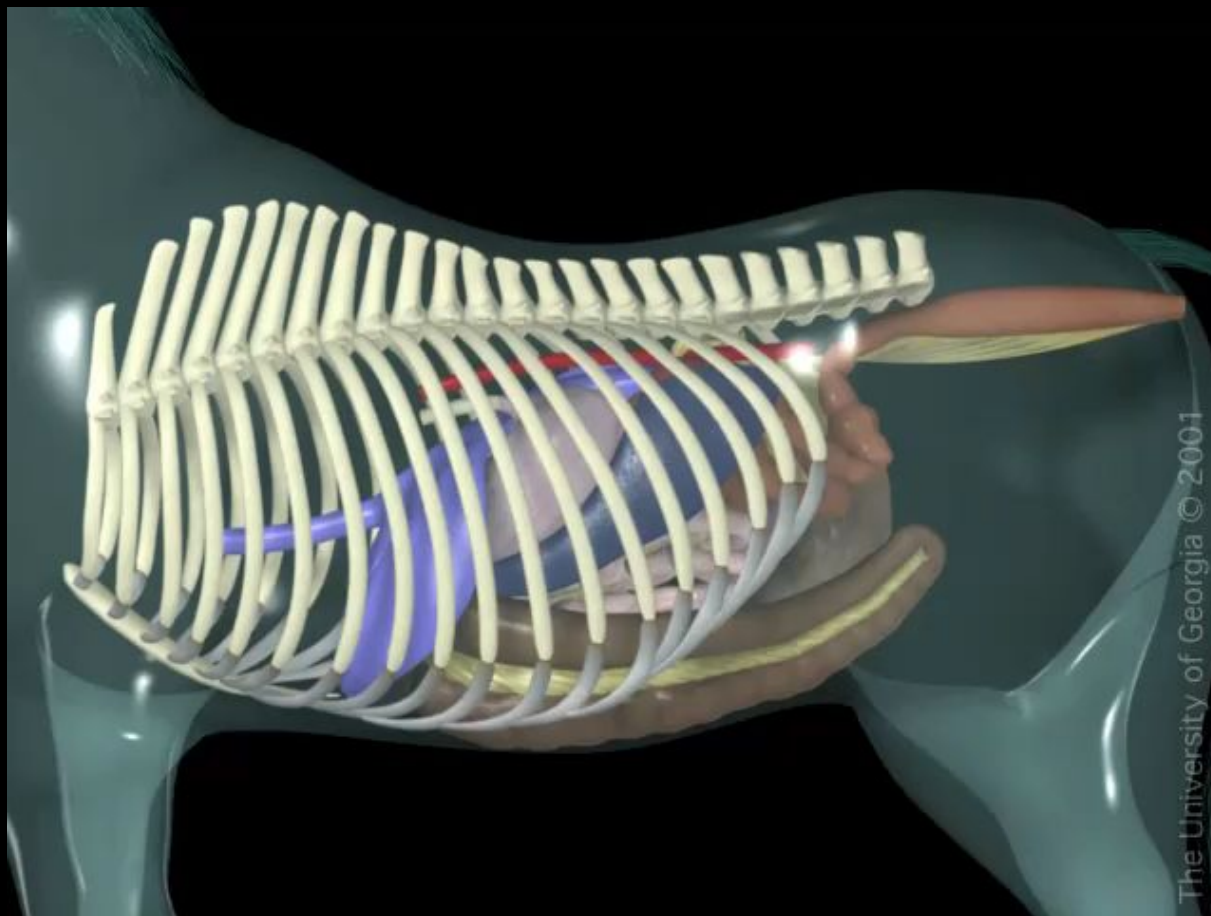
- Clinical pathology
 - Hematology, biochemistry test of blood
 - Peritoneal fluid analysis (increased protein content and WBC count)
 - Abdominal USG
- Treatment
 - Clinical signs indicate a ileal impaction or small intestinal strangulation
 - But— fever (general examination!!!)
 - Long and intensive treatment
 - Nasogastric tube and remove reflux (Leave tube or repeat every 1-2 hours)
 - NSAIDS
 - Broad spectrum antimicrobials
 - Iv administration of balanced electrolyte solution
 - continuous monitoring of the horse, fluid therapy, and nasogastric tube for few days)
 - Do not give food in first days; then linseed or other protectants and then good hay
 - Prognosis is generally good but laminitis

Obstructions

Ileal Impaction and duodenal impaction

- Cause
 - Poor quality of the hay
 - Changes in feeding
 - Duodenal impaction: in foals *Parascaris equorum*
 - Ileal impaction : tapeworms infestation (*Aloplocephala*)

Ileal impaction



Obstructions

Ileal Impaction and duodenal impaction

- Clinical signs

- Duodenal impaction:

- Acute abdominal pain
 - Gastric reflux in very short time
 - Perforation of duodenal wall cause peritonitis and toxemia
 - Rectal examination not always helpful

- Ileal impaction

Obstructions

Ileal Impaction and duodenal impaction

• Treatment

– Duodenal impaction:

- Medical treatment not effective in many cases, but symptomatic treatment:
 - Nasogastric tube
 - Painkillers (NSAIDS)
 - Antispasmodic drugs
 - Fluid therapy
- Surgical
 - In most cases not effective because of anatomical location of the duodenum

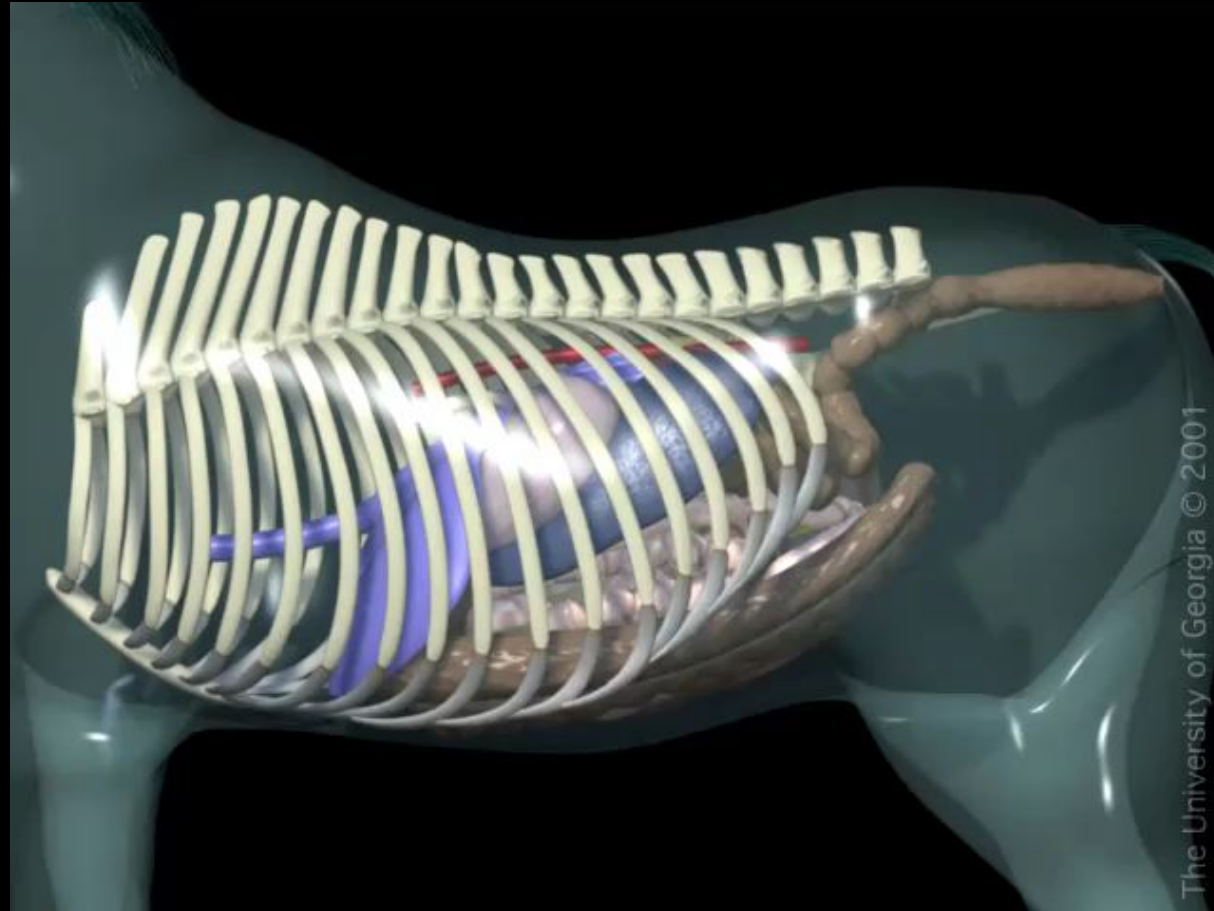
– Ileal impaction

- In first stage when jejunum is not distended and impacted ileum is not hard by rectal examination treat by
 - Nasogastric tube
 - Antispasmodic drugs
 - Painkillers
 - Fluid therapy

Strangulation obstruction

- Small intestinal strangulation through mesenteric rent
- Inguinal Hernia of small intestine
- Small intestinal volvulus

Small intestinal strangulation through mesenteric rent



Small intestinal strangulation through mesenteric rent

- Horses are painful, toxemic, dehydrated
- Distended loops of small intestine on rectal palpation.

- Treatment
 - Surgery
 - Perform a resection and anastamosis.

- Prognosis is poor
 - Better if surgery is perform fast
 - Postoperative adhesions

Inguinal Hernia of Small intestine

- When small intestinal passes through the vaginal ring
 - Testicle on affected side becomes enlarged, swollen pain and cold
- Surgery to remove entrapped intestine
 - and if intestine is necrotic perform resection

Strangulation obstruction small intestinal volvulus

- Cause
 - It is difficult to find one cause it can occur in different situation
- Clinical signs
 - Acute pain, sometimes dangerous for owner and vet, and for himself (head injury)
 - HR, BR very high, CRT > 3-5 sec
 - inaudible intestinal motility
 - Gastric reflux
 - Distended small intestinal in rectal palpation
 - Peritoneal fluid- bloody and in increased volume

Strangulation obstruction

Small intestinal volvulus

- Clinical pathology
 - Hematology biochemistry of the blood
 - USG
 - Peritoneal fluid
- Treatment
 - Surgical
 - Before: painkillers, nasogastric tube, fluid therapy,
 - Surgical in short time

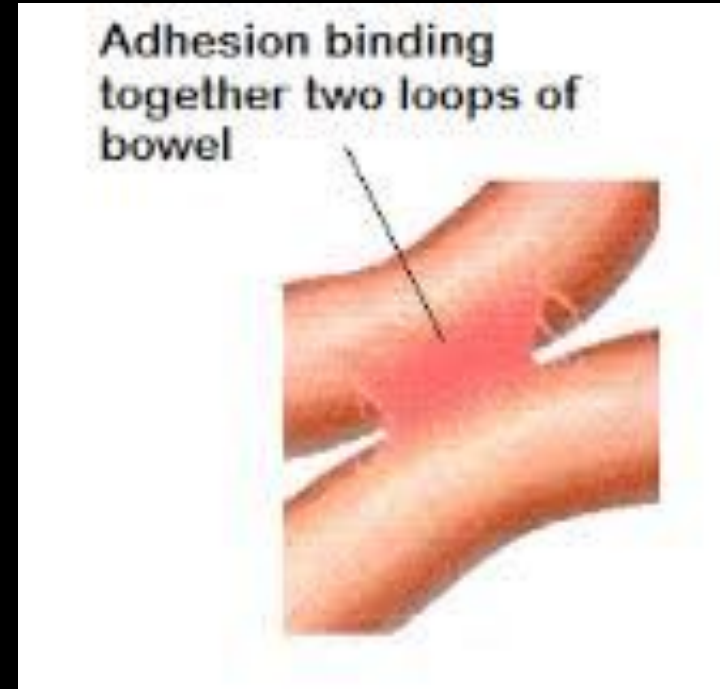
Adhesions

- Cause

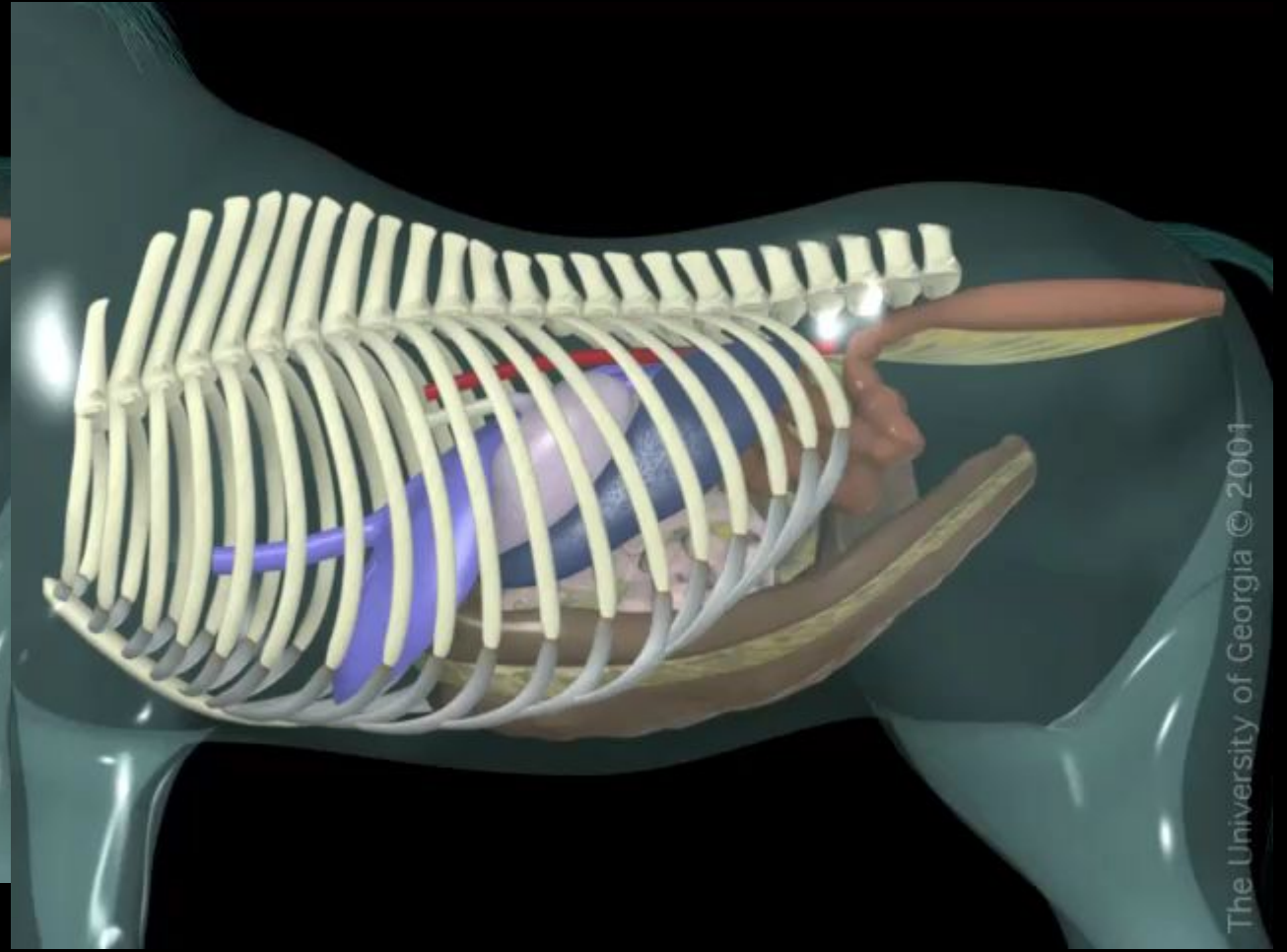
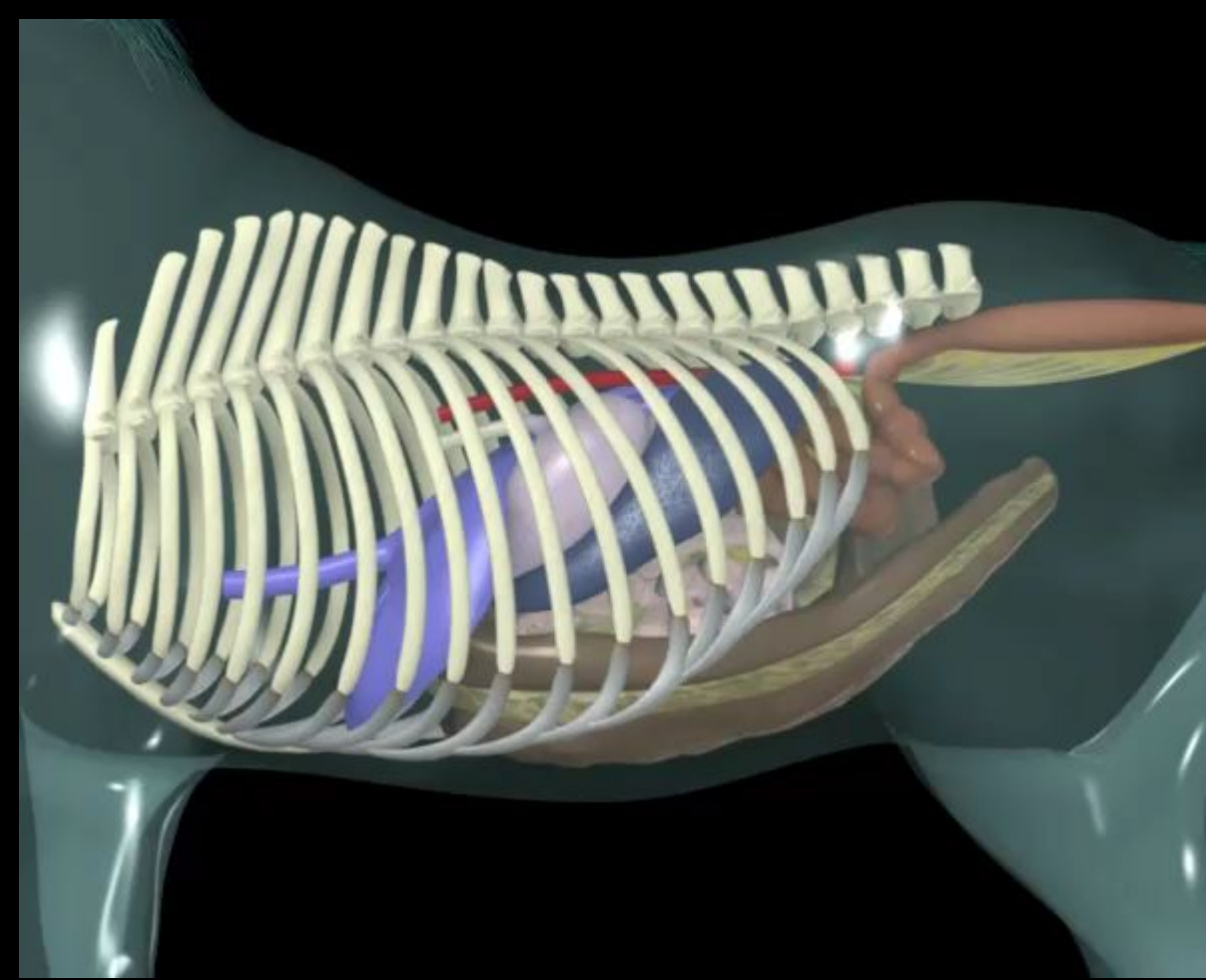
- develop as a complication of previous **small intestinal surgery**
- because of parasite migration,
- Abdominal abscesses,
- penetrating abdominal wounds, or
- serosal inflammation

- history of a gradual onset of colic and weight loss, and in many instances the pain occurs after the horse eats

- surgery to remove the affected segments of intestine



Cecum



Cecal tympany

- Cause
 - Colonic displacement
 - Colon volvulus
 - Rapid fermentation of lush pasture grasses
- Clinical signs
 - Distension of abdominal wall (right paralumbar fossa)
 - Pain
 - Tachycardia, tachypnea
 - Metallic sound during auscultation of cecum area
 - Distended cecum during rectal palpation

Cecal tympany

- Treatment
 - Remove gas through a trocar placed aseptically in right paralumbar fossa
 - If it is secondary to another disease, treat underlying problem
 - Colonic displacement
 - Colon volvulus

Cecal impaction

- Cause
 - Poor quality of the hay
 - Worming, which causes the disorder of motor cecum
 - Problems with teeth
 - Insufficient water supply or reduced water intake
 - > 8 years old
- Clinical Signs
 - Clinical symptoms develop slowly, usually a few days. Initially horse is periodic sad, has reduced appetite and reduced the amount of faeces.
 - between periods of pain, HR and BR is normal, dehydration is not observed.
 - When the disease is long, clinical signs are more severe. Horse often and for a long time looks at the right side. Horse lies longer than normal.
 - You can feel enlarged cecum on right side during rectal palpation
 - Rupture of cecum is common as a consequence of inflammation and necrosis cecum wall.
 - In this case acute clinical sign are observed

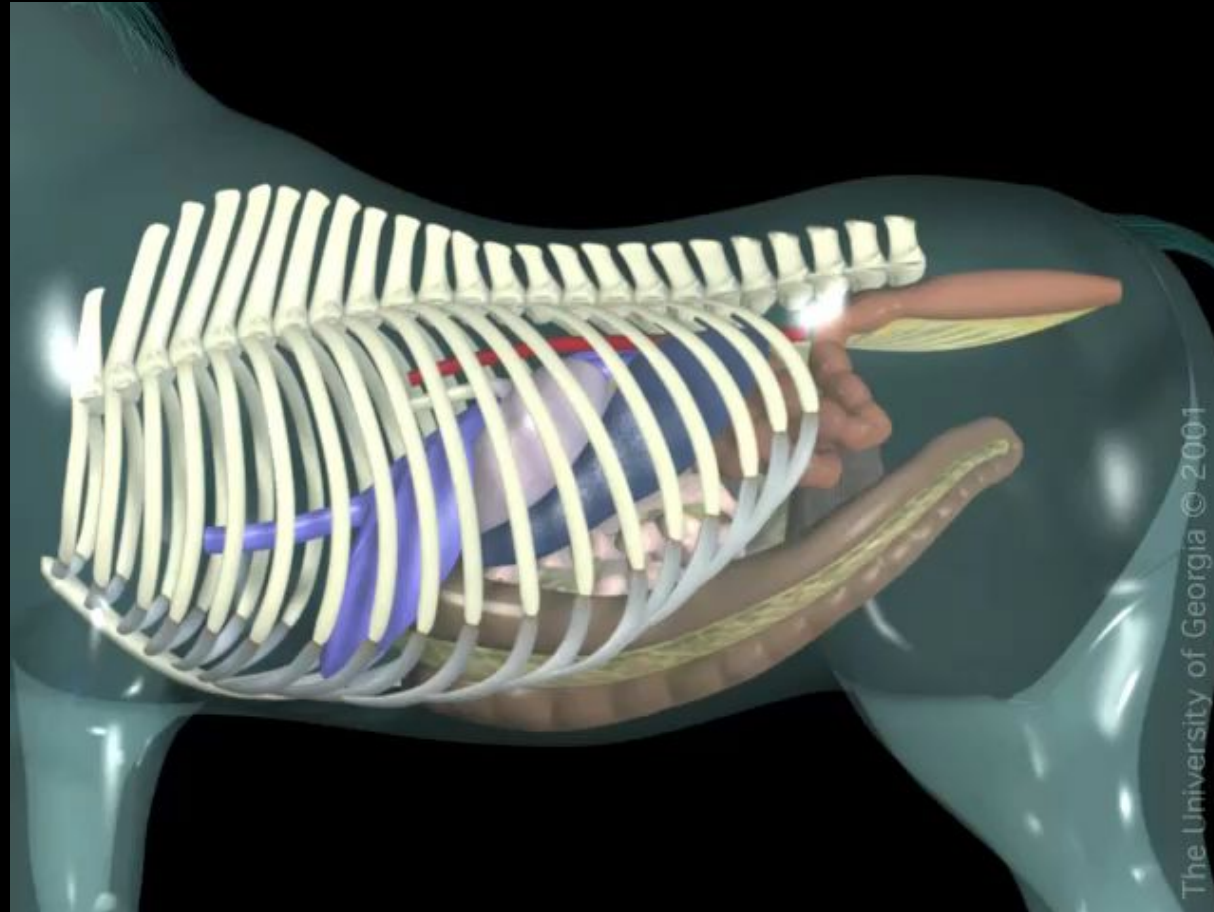
Cecal impaction

- Treatment

- It is not so easy as disease is caused by motility disorders of the cecum
- Painkillers, spasmolytic drugs
- Nasogastric tube
 - If reflux: remove it
 - If not reflux: give water orally and mineral oil
- iv fluid therapy
- If therapy is not effective after 2-4 days surgery, but after removing of impaction atony can be still present, and disease can return

Large colon

Colon impaction



Colon impaction (Pelvic flexure impaction)

- Cause

- Poor quality of the hay
- Problems with teeth
- Insufficient water supply or reduced water intake after transport

- Clinical signs

- Clinical symptoms develop slowly, usually a few days like in cecal impaction
- Mild abdominal pain:
 - Initially horse is periodic sad, has reduced appetite and reduced the amount of faeces.
 - Between periods of pain, HR and BR is normal,
 - When the disease is long, clinical signs are more severe. Horse can have acute abdominal pain, because of distension of the colon
 - Initially, reflux is not present
 - In rectal palpation you can find impaction the most common is in pelvic flexure

Colon impaction

- Treatment

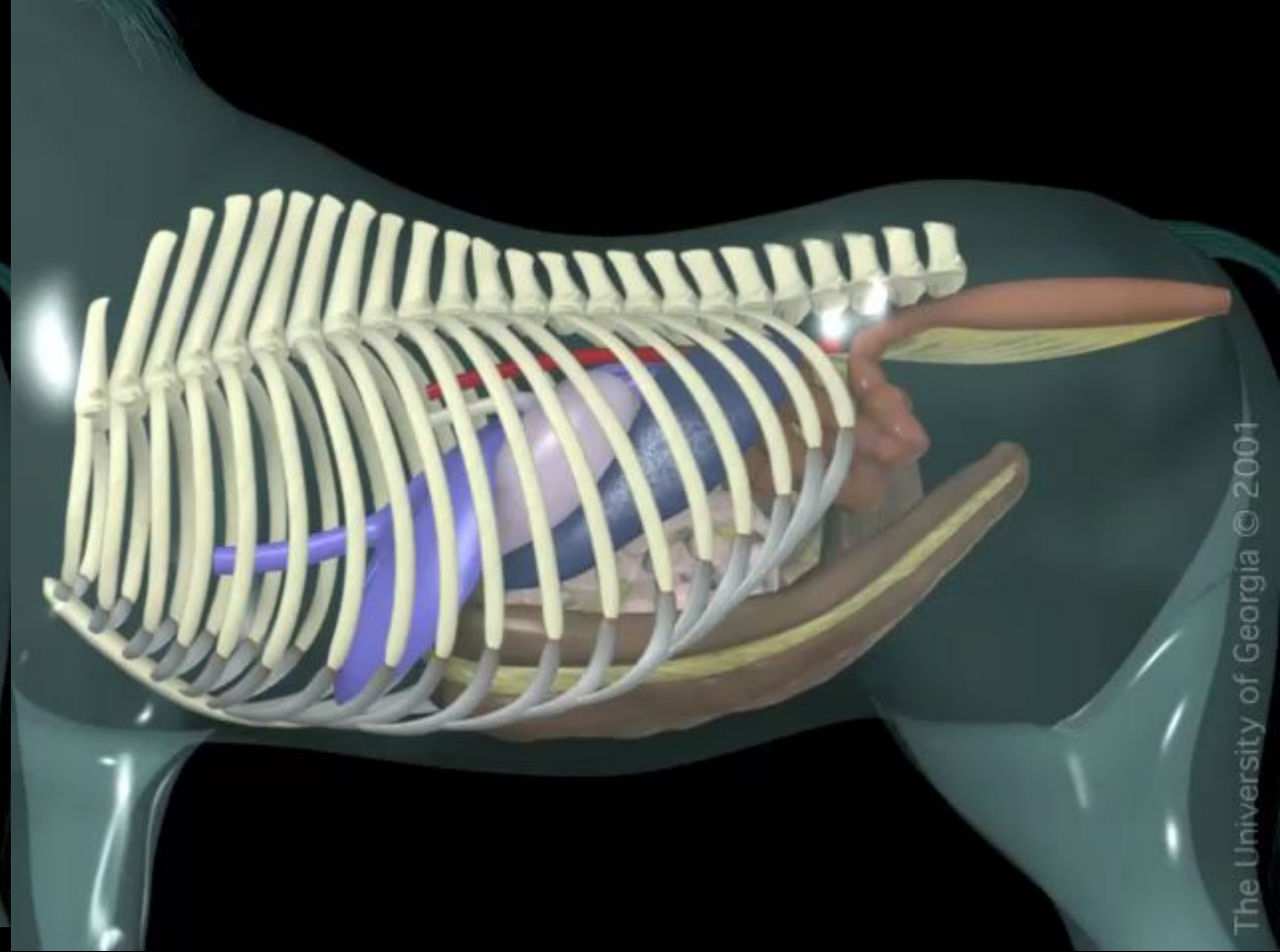
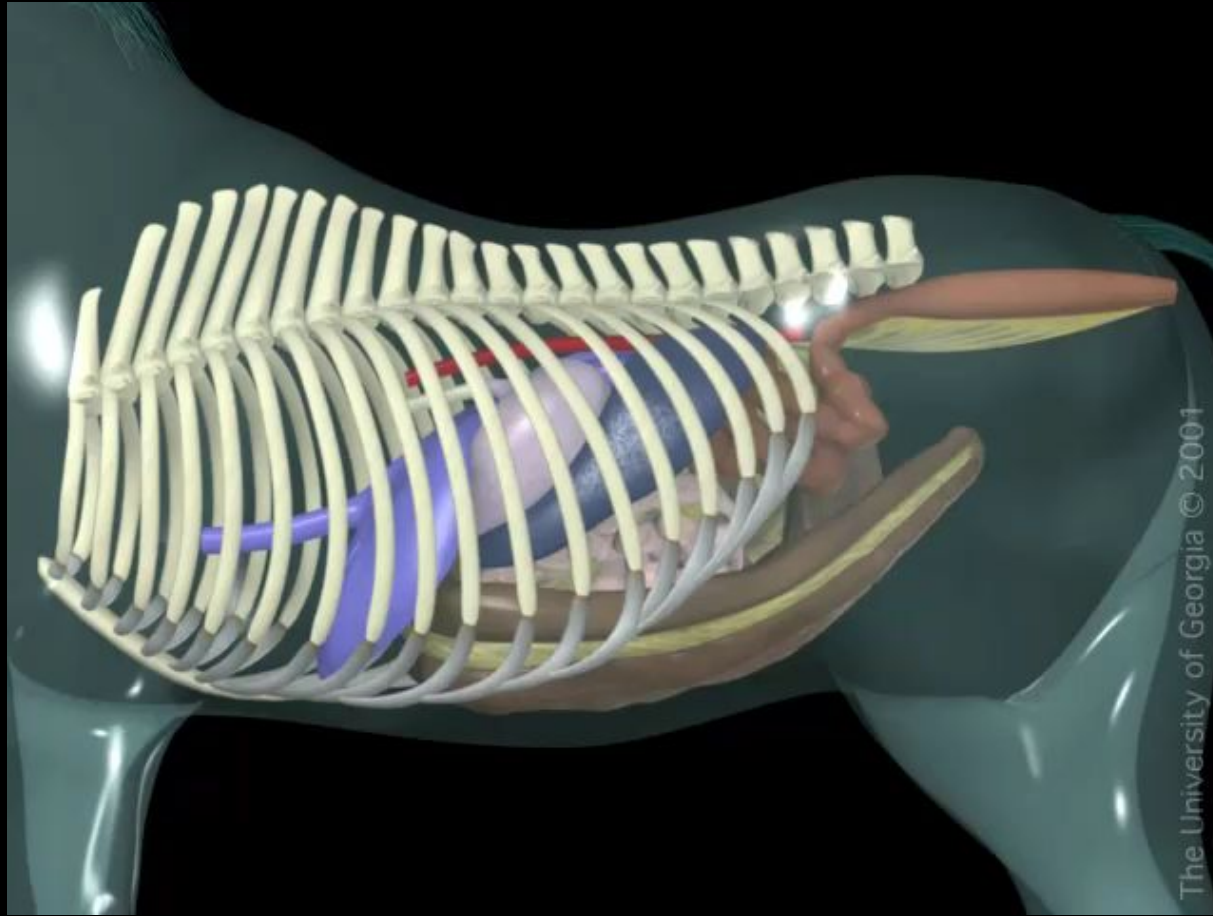
- Painkillers
- Nasogastric tube
- Intensive iv fluid therapy
- If severe distension remove gases by trocar placed aseptically
- If no reflux give mineral oil by nasogastric tube
- Some clinicians recommended do not give a hay for few days
 - But very small portion of hay improve GI motility
- If you have no result of treatment after 2-3 days or if suddenly clinical signs are more acute □ surgery, but prognosis is good

Sand impaction

- In horses fed on sandy solis
- Clinical signs:
 - In the right dorsal colon □ severe distension proximal to impaction and abdominal pain
 - Sand accumulation in different part of ventral colon □ thickening of the colonic mucosa □ mild abdominal pain
 - Hores lie down
 - Reduce appetite
 - Sometimes diarrhea
- Clinical pathology
 - USG
 - Test of feces for sand
- Treatment
 - Removing the sand from colon
 - repeted administartion of psyllium metylcellulose orally
 - Orally and iv fluid therapy
 - Surgery is necessary to remove sand from right dorsal colon and transverse colon



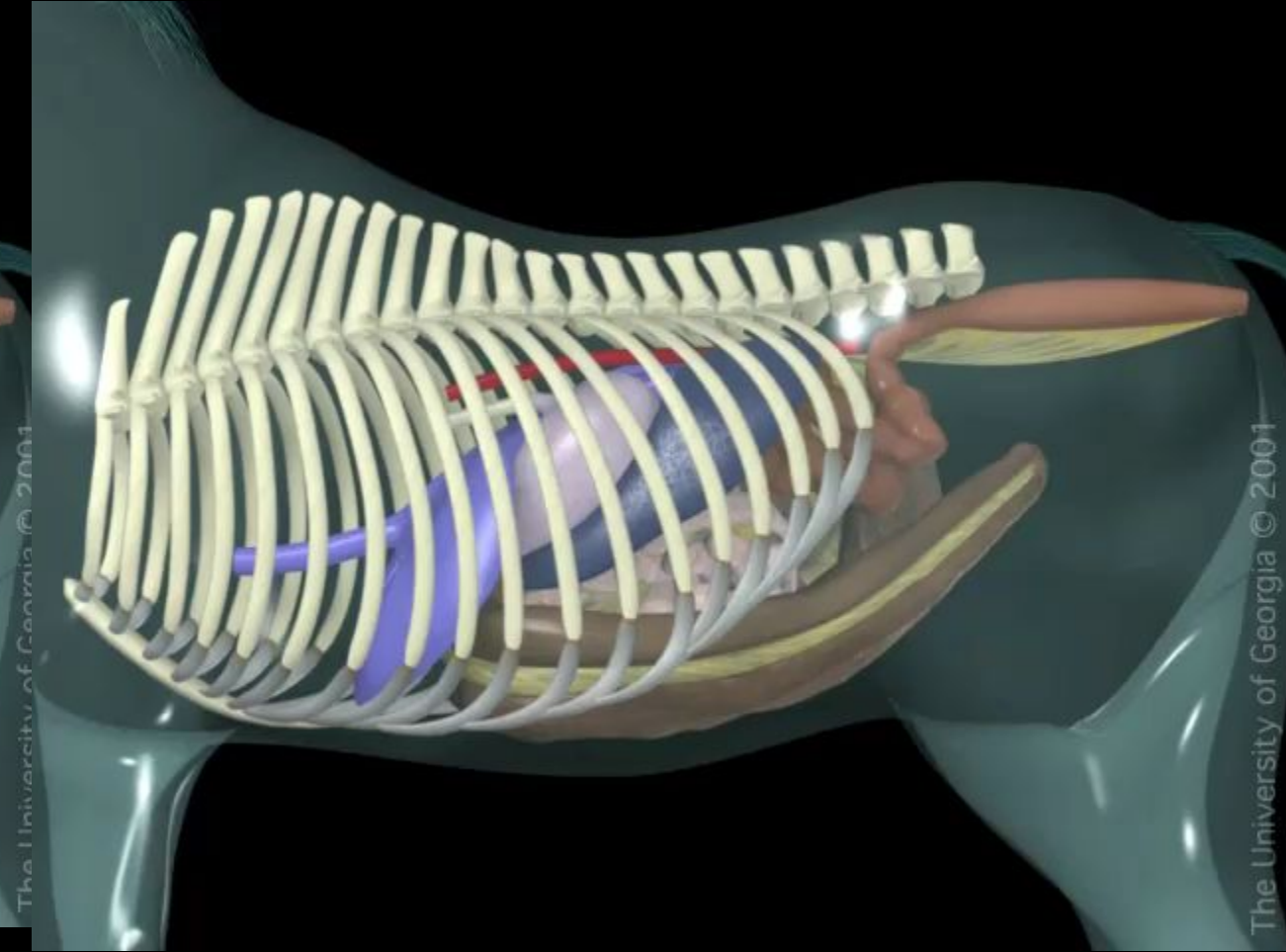
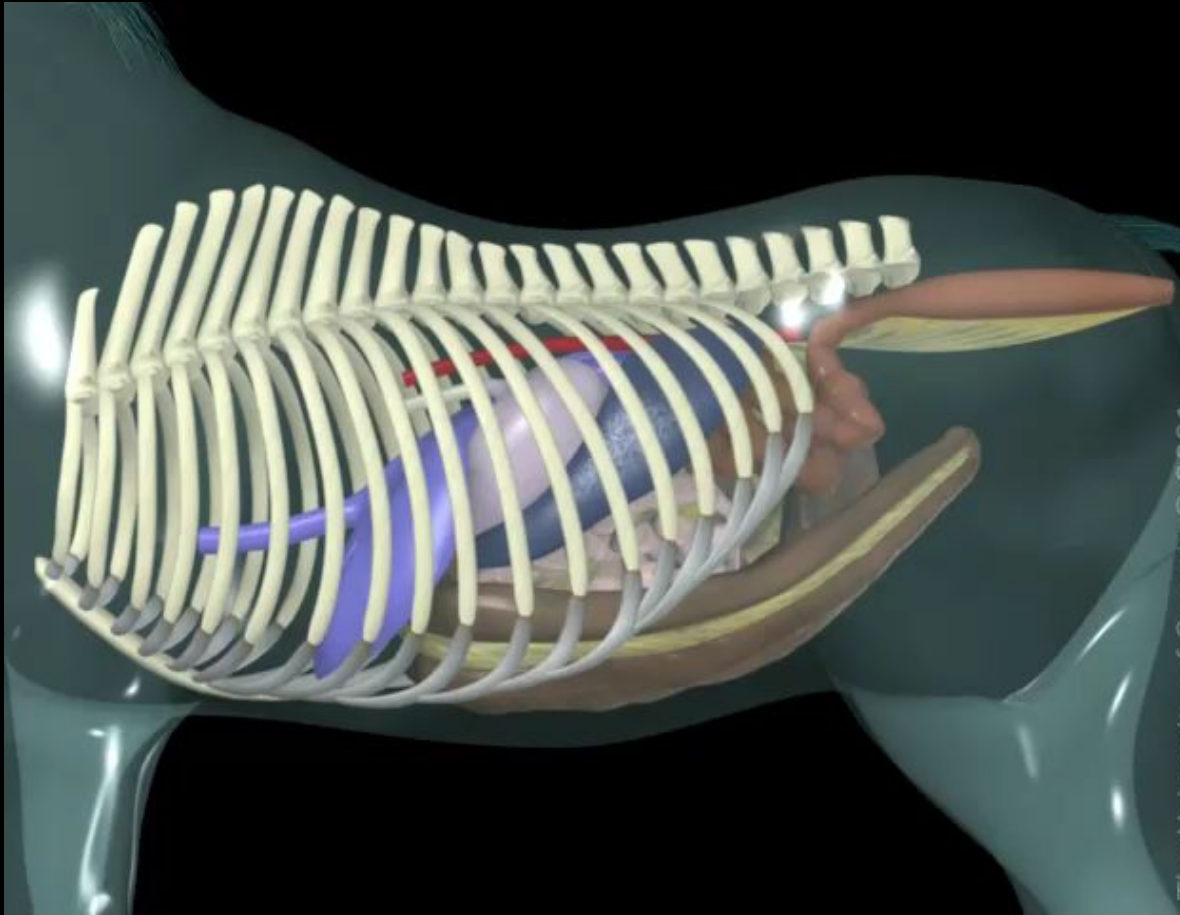
Left dorsal Displacement



Left dorsal Displacement

- Some disorders of motility cause distension and displacement
- Large colon moves to space between the spleen and left kidney
- Clinical signs
 - Mild to moderate abdominal pain
 - Painful episodes
 - If colon is distended clinical signs are more acute
- Clinical pathology
 - Rectal examination
 - USG
- Treatment
 - Feed restriction
 - Administration of the phenylephrine- contraction of the spleen and some running
 - Short time anesthesia and rolling
 - Surgery
 - Prognosis is good

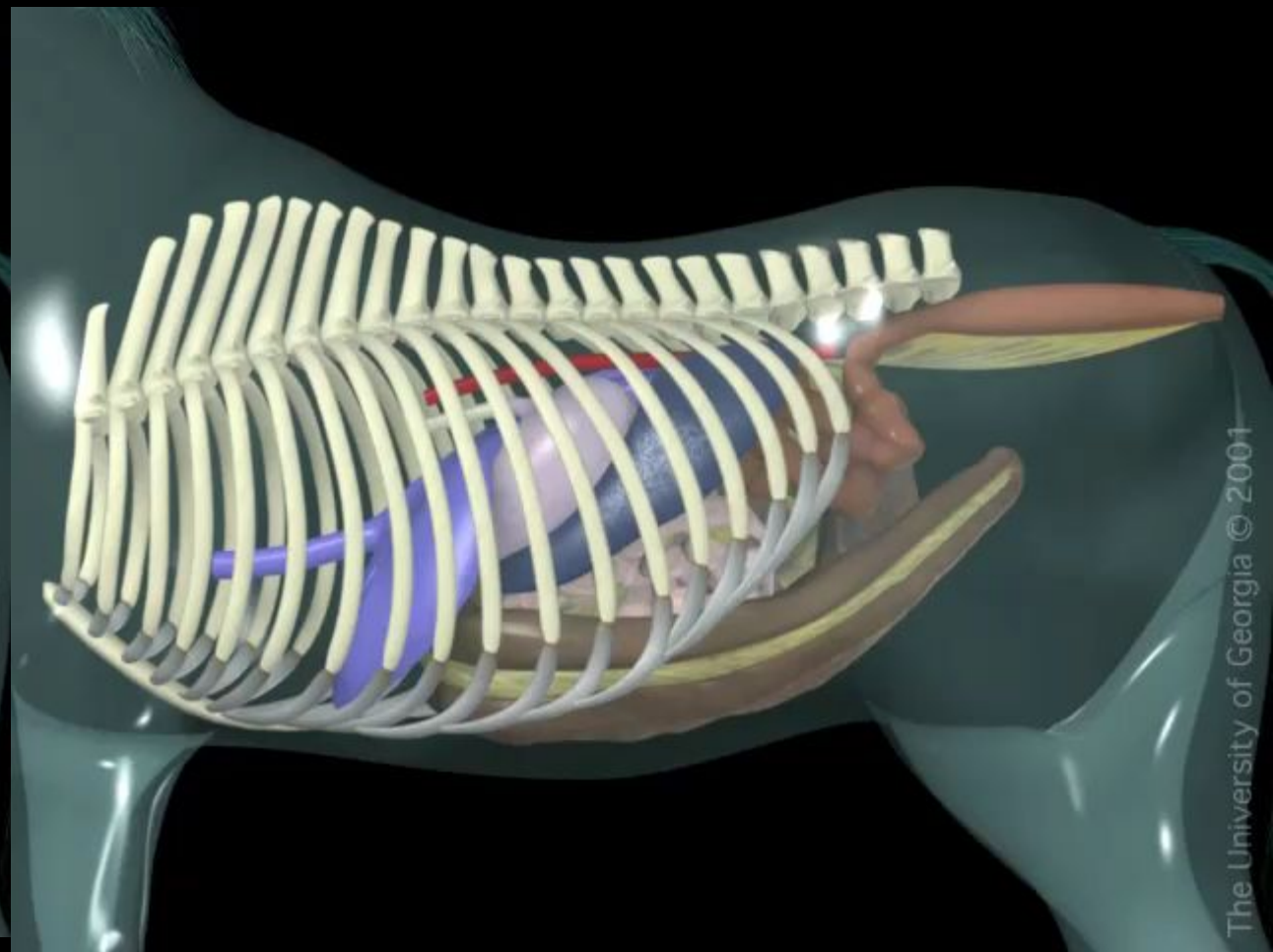
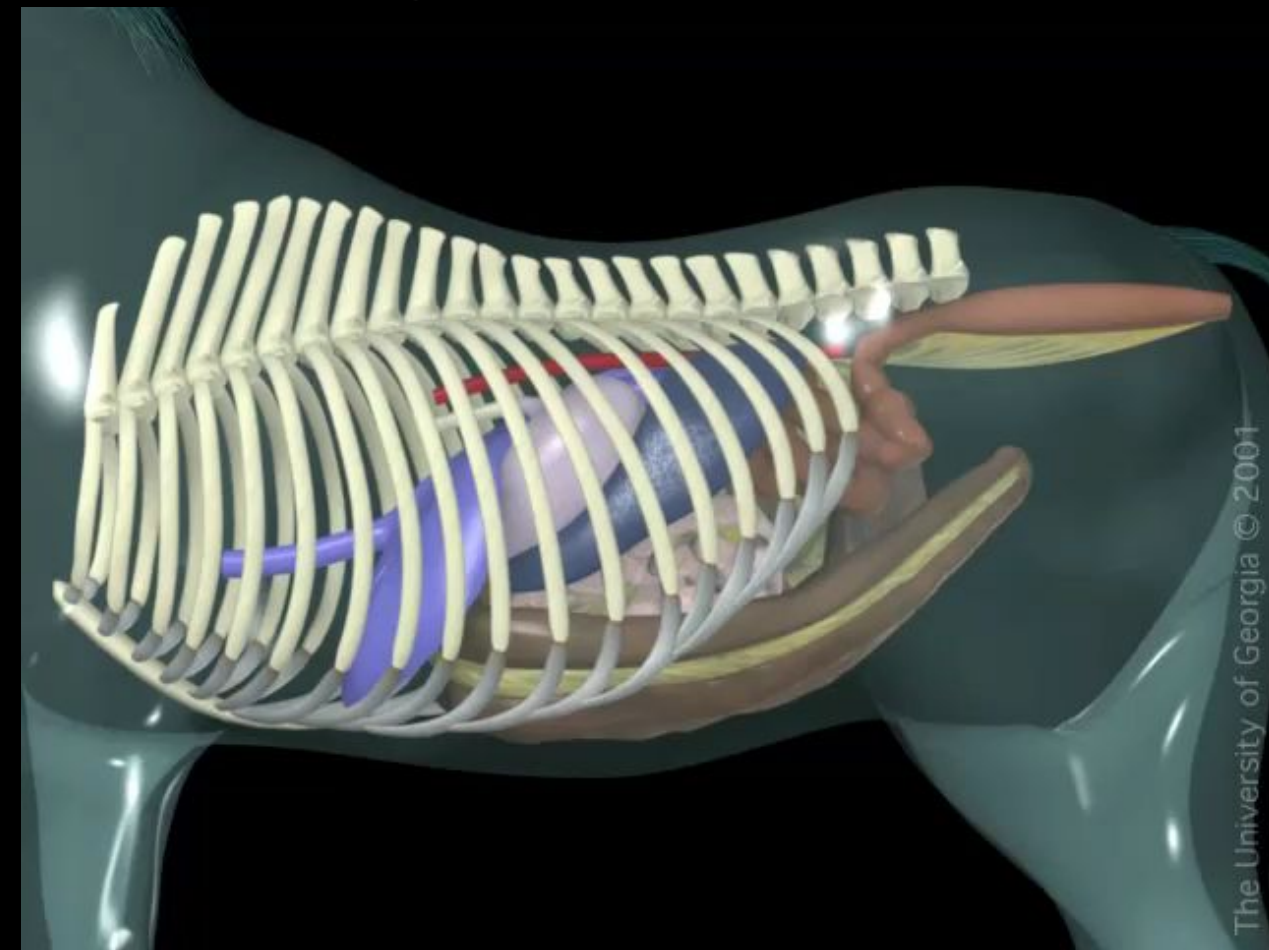
Right dorsal Displacement



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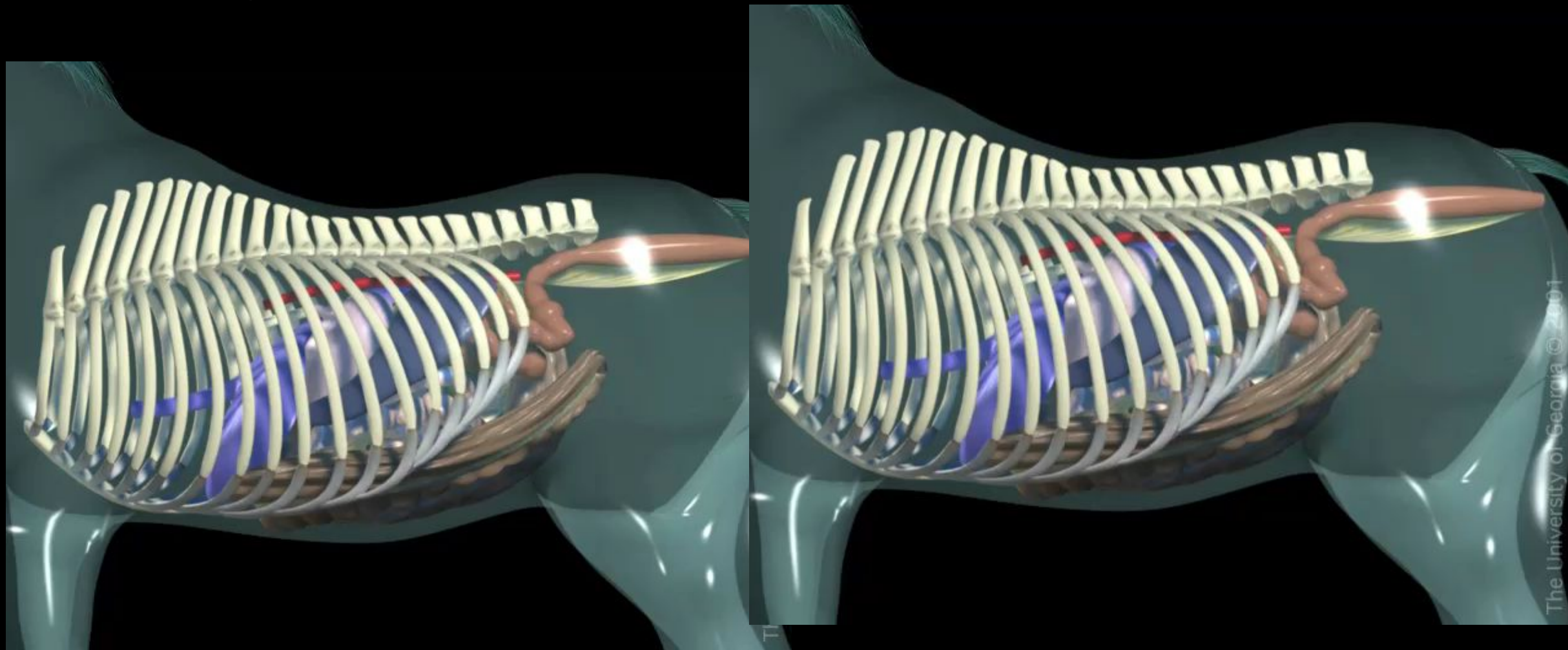
Right dorsal Displacement



Right dorsal Displacement

- Large colon moves to cecum and right body wall
 - pelvic flexure impaction
- Clinical signs
 - Moderate to acute abdominal pain
 - Distended colon in rectal palpation
 - Abdomen wall is distended
- Treatment:
 - During short time if clinical signs are mild □ medical treatment
 - If acute clinical signs □ surgery

Large colon volvulus

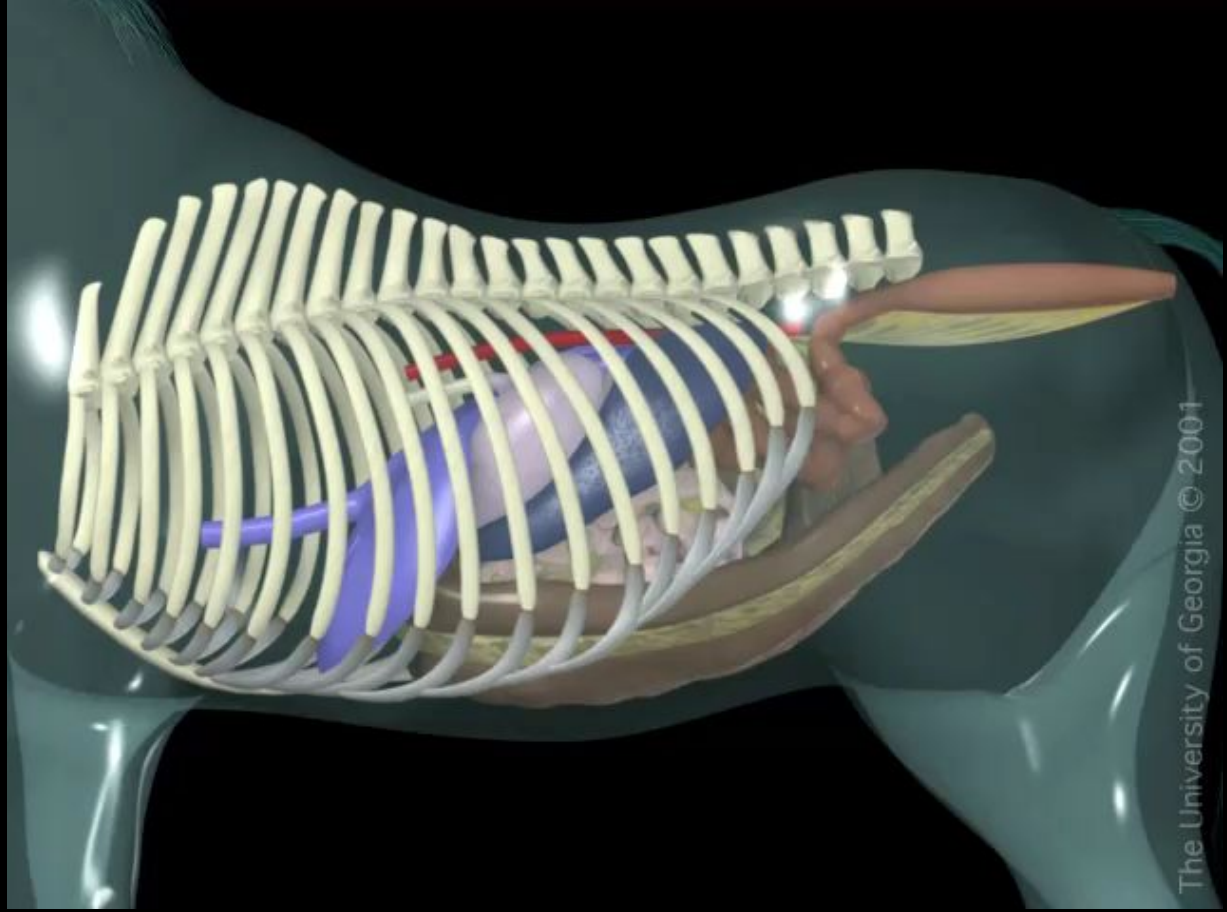


Large colon volvulus

- Clinical signs

- Clinical signs depend on degree of twisting
- In 360° pain develop very fast
- Rapid accumulation of gas
- Distension
- Ischemia result in the development of endotoxemia
- HR, BR very fast
- Distension of abdominal wall
- Distension of colon during rectal palpation- sometimes is impossible to perform examination and removing of gas by trocar is necessary to perform examination
- There is no effect of any painkillers

- Treatment
- Surgery in short time



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Colitis

- Inflammation of the wall of the colon
- Clinical signs
 - Diarrhea
 - Fever
 - Signs of endotoxemia (increased HR, long CRT, discolored mucous membranes)
 - Moderate to acute pain because of distension of colon
- Clinical pathology
 - Neutropenia with left shift
 - Peritonitis can develop

Small colon impaction

- Cause

- Dehydration
- Bad quality hay
- Worming
- Teeth problems

- Clinical signs

- Moderate to acute abdominal pain
- Distension of colon and abdominal wall
- In rectal palpation you can feel impaction in small colon
- Remove gas through trocar if severe distension of colon

Small colon impaction

- Treatment
 - If severe distension of colon remove gas by trocar
 - Antibiotic
 - Painkillers and spasmolytic drugs
 - Nasogastric tube and if not reflux (rare in small colon impaction) give mineral oil (8 ml/ kg □ 4 l / horse)
 - Intensive iv and orally fluid therapy
 - Rectal enema 2l/ every 1 hr

Peritonitis

- Cause

- Idiopathic
- Perforation of GI or genitourinary tract
- Trauma
- After abdominal surgery

- Clinical signs

- Moderate to acute pain
- Signs of endotoxemia
- Sweating
- Dehydration
- Loss of appetite
- In acute diffuse peritonitis death occurs 4- 24 hours

Peritonitis

- Clinical pathology
 - peritoneal fluid analysis

- Treatment
 - Treat primary disease
 - Painkiller and antinflammatory drugs
 - Correction of dehydration
 - Correction of hypoproteinemia
 - Broad spectrum antimicrobial therapy
 - iv administration of balanced electrolyte solution