Diseases of the large colon

Cecum

Cecal impaction

- First type: ingestion of coarse feed, inadequate mastication, teeth problem, insufficient water supply, reduced intake of water
- Second form: hypertrophy of the circular muscle layer in the cecal base (2 mm)
  - Nonsteroidal anti-inflammatory, post op. complication, neurogen problem, Anaplocephala perfoliata

Diseases of the cecum

- Cecal impaction
- Cecocecal invaginatio
- Cecocolonal invaginatio
- Cecum volvulus, torsio
- Cecum infarctus
Cecal impaction

- Middle age (8-11 year)
- Intermittent colic signs
- Rectal examination
- Trans abdominal ultrasound
- Abdominocentesis: TP
- Prevalence of spontaneous cecal rupture

Cecal impaction

- Treatment:
  - Large volumes of balanced iv fluids 50 L/day
  - Intragastric administration of mineral oil
  - 50% spontaneous cecal rupture
- Surgery:
  - Typhlotomy – ventral midline celiotomy, the affected portion of cecum exteriorized and packed off

Cecocecal and cecolic intussusception

- Uncommon causes of colic
- Most prevalent in young horses
- Altered cecal motility
- Parasite infection (Anaplocephala perfoliata)
- Typhlocolitis
- Salmonellosis

Cecocecal and cecolic intussusception

- Clinical findings:
  - Signs of mild chronic colic
  - Scant feces
  - Intermittent fever
  - Weight loss
Cecocecal and cecocolic intussusception

- **Diagnose:**
  - Rectal palpation (firm mass at the cecal base)
  - Ultrasound examination:
    - Transabdominal-transrectal

- **Treatment**
  - Surgical correction is indicated in all cases
    - Ventral midline-right flank with rib resection
    - Manual reduction of the intussusception
    - Partial typhlectomy
    - Right vent. colon-steril plastic drap is sutured circumferencial-enterotomy-intussusected cecum is exteriorised-resection
Cecal torsio

- Long axis volvulus
- Ileum=hard colic
- Cecum=mild colic

Diagnose:
- Cecum oedema
- Rectal examination, ultrasound

Diseases of colon ascendens

- Tympany (common cause of colic)
- Obstipatio
- „Sand impaction”
- Enterolithiasis

Displacements
- Left dorsal displacement
- Right dorsal displacement
- Colon ascendens volvulus
Diseases of colon ascendens

• Displacements
  – Left dorsal

Entrapment in the renosplenic space

• Marek 1902
• Common in big horses
• Non strangulated displacement
  – Karabiner effect
    • Partial displacement
    • Total displacement
  – With or without torsion
  – Excessive gas formation, abnormal motility

Left dorsal displacement

• Clinical signs
  – Variable degrees of pain
  – Presence of secondary gastric distention
  – Often lean to the left
  – Rectal examination

Left dorsal displacement

• Treatment
  – Nonsurgical management
  – Hyperinfusio, cecal punctio
  – Surgical
  – Ventral midline celiotomy recommended for correction
Left dorsal displacement

- Surgery
- 6-8% of cases
- Median laparatomy
  - Displacement reduction, enterotomy
- Preventio
  - Standing position laparascopy
  - Closure of renosplenic space

Right dorsal displacement

- Initiated by retropulsive movement of pelvic flexure with subsequent migration of the left colon cranially
- The right colon located between the cecum and the body wall
- With or without torsion
- Clinical signs
  - torsio, obstipatio
Right dorsal displacement

- Treatment
  - Conservative
  - Surgical
    - Median laparotomy, reposicio, enteretomy

Large colon torsion/volvulus

- Prevalence in brood mares (6-8 year)
- Recent parturition
- Volvulus first at the level of flexura pelvina
- Torsion at the long axis
- Grade: 90-720 degree
- Direction from caudal to cranial
  - Clockwise-anticlockwise

Large colon torsion/volvulus

- One of the most painful gastrointestinal problem
- Rectal examination-oedema of the large colon wall
- Treatment: 180 degree-conservative

- Surgery
Retroflexio

- Displacement of flexura pelvina
- Signs: mild colic
- Rectal examination: no flexura pelvina
- Intestine wall oedema

Colon descendens

- Obturatio, meconium, intramural haematoma, rupture of mesocolon, infarctus, lipoma, atresia coli (I-III)

Rectal tears

1. Rectal tears (I, II, IIIa, IIIb, IV)
2. Rectal prolapse (I-IV)

Rectal tears

Rectal examination
Female reproductive tract

- Uterine torsion
- Uterine rupture
- Ovarian tumors
- Dorsoretroflexio of the uterus
- Uterine arterial rupture
- Inversion of a uterine horn

Uterine torsion

5-10% rare
Last trimester

- **Clinic signs:**
  - Persistent, recurrent mild colic
  - Torsions 180 to 540 degrees

- **Diagnosis:**
  - Rectal examination:
  - Broad lig. pulled tightly
  - Asymmetry of these ligaments

- **Non-surgical solution:**
  - Rotation of the fetus
  - In general anesthesia

- **Surgical solution:**
  - In standing position
  - At the site of the torsion
  - In gen. anesth. median laparatomia
    - Hysterotomy,
    - Partial hysterectomy,
Uterine torsion-complications

- Cardiovascular (a. iliaca thrombus, pericarditis)
- Pleuritis, pleuropneumony
- Abdominal cavity (tumor, abscess, peritonitis, haematoma)
- Liver (cholelithiasis, cholangiohepatitis)
- Splen (splenomegalia)
- Urinary tract (nephrolith, pyelonephritis, cystitis, rupture)
- Female reproductive tract
- Testis (torsio, orchitis)
- Muscular system (laminitis, rhabdomyolysis, lig. prepubicum)


Colic from alternative systems-false colic

- Meconium colic
  - Post partum 1-3 days
  - Tenesmus, apathia,
  - Conservative treatment
  - Surgery: enterotomia

Atresia ani
Atresia coli

Colic in old horses

- Obstipatio ilei
- Rupture of stomach
- Haematoma lig. latum uteri
- Lipoma pendulans
- Old horse-specific patient!!
  - Owner
  - Bad prognosis

Colic in foals

- Meconium colic
- Enterotomia

Intestinal viability

- Techiques:
  - Surgeon
  - Doppler Ultrasound
  - Fluorescein probe
<table>
<thead>
<tr>
<th>Large colon resection</th>
<th>Cecal resections</th>
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<tbody>
<tr>
<td>• Cecal resection</td>
<td>• Med. and vent. taenia-vessels-ligature</td>
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<tr>
<td>– Cecal muscle hypertrophy</td>
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<tr>
<td>– Invaginatio</td>
<td>• Typhlectomy</td>
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<td>– Thrombosis and necrosis</td>
<td>• Partial- median laparatomy</td>
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<td>– Cecal torsio</td>
<td>• Total- right lat. flank laparatomy</td>
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<td>– Tumor</td>
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<tr>
<td>• Colon ascendens</td>
<td>• Partial colectomy</td>
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<tr>
<td>– Torsion</td>
<td>– A. and v. colica double ligature</td>
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<tr>
<td>– Thrombosis</td>
<td>– Resections line 60 degree</td>
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<tr>
<td>– Dislocatio and necrosis</td>
<td>– Lumendiameter</td>
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<td>– Invaginatio colocolica</td>
<td>– Suture technique</td>
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<td>– Tumor</td>
<td>– Side to side anastomosis</td>
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<td>• -15-20 cm large stoma</td>
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<tr>
<td>• Subtotal large colon resectio</td>
<td>• Subtotal better prognose</td>
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<tr>
<td>– The level of lig. caecocolicum</td>
<td>• Toxins, necrotic wall remove</td>
</tr>
<tr>
<td>– Lumen diameter</td>
<td>• Stoma insufficienty</td>
</tr>
<tr>
<td>– Mesocolon V shape incision</td>
<td>• Technicaly difficult</td>
</tr>
<tr>
<td>– Two layers suture</td>
<td>• Two assistant</td>
</tr>
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<td>• Haemorrage</td>
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</table>
Small colon resection

- Obstipatio
- Obturatio
- Herniation
- Strangulatio lig., lipoma, ovarium

Small colon resection

- Surgical techniques
  - End to end
  - End to side
  - Colorectostomy
  - Tunnel technique

Peritoneal lavage

- Prevention of complications
- Endotoxaemia
- Peritonitis
- Laminitis
- Intraabdominalis adhesions

Peritoneal lavage

- From celiotomy wound 5-10 cm (1-1,5 cm diameter)
- Lavage: 2x10 L daily
- Warm, steril, isotonic solution
- Drain remove after 3-4 days

Peritoneal lavage

- Disadvantages
- Pneumoperitoneum
- Omental prolaps
- Phlegmone
- Intraabdominal compartment syndrome

Complications

- Short time (1 day)
- Clinical period
- At home
Complications

- After anesthesia
- Myopathy
- Fracture

Complications

- Short time
  - Reflux
  - Shock
  - Ileus (paralytic, anastomosis)
  - Thrombophlebitis
  - Enteritis, typhlocolitis
  - Haemorrhage
  - Laminitis

Complications

- Wound healing
- Peritonitis
- Abortus
- Arrhythmia