Equine Colic

Classic Case – Acutely painful horse, flank watching, pawing, up and down, +/- rolling, ↑ HR, ↓ borborygmi (gut sounds), ↓ feces, & ↓ appetite

Presentation:

Behavioral signs: pain
- Sweating
- Restless, pawing
- Flank watching
- Biting at flanks
- Kicking at abdomen
- Recumbent, won’t get up
- Up and down
- Rolling

Behavioral signs - Malaise
- Eyes dull
- No interest in ANYTHING
- Ears floppy – “helicopter ears”

Cardiovascular signs
- Tachycardia
- Abnormal tissue perfusion
- Shock in severe cases
- Occasionally arrhythmias

Other
- ↓ Appetite
- ↓ Fecal output
- Fecal balls small/dry
- Diarrhea

Test(s) of choice:

History
- Recent transport
- Feed change; lack of water – frozen in winter, not enough in summer
- Recent or concurrent illness
- Activity – training, type/frequency of riding, etc
- Pregnancy, parturition
- Weather/climate

Management
- Housing – pasture vs stall
- Turnout – hours per day
- Number of horses, ages; other animals present
- Feed – roughage vs concentrate, supplements

Physical exam
- How much PAIN??
- Heart rate – count BEFORE sedation
- Mucous membrane color, capillary refill time - perfusion
- Pulse strength – vascular volume and tone
- Gut sounds – Are they decreased?
  - 4 quadrants – upper/lower areas both flanks
  - Cecum - characteristic “plink”
- Pass nasogastric tube – Is there reflux fluid?
  - Color, smell, pH (stomach acidic, SI alkalotic)
  - Pass tube ASAP if fluid draining from nose!!
Test(s) of choice: (continued)

- **Rectal exam** – ensure good restraint
  - GI distention – SI/LI/both – gas/ingesta
  - Organs out of place – bands on lg/sm colon
  - Cecal distention; location of spleen
  - Must know normal!

**Abdominocentesis**

- Color, turbidity
- Feed contamination – GI rupture / enterocentesis
- Cell count / Protein level
- Cytology
  - Inflammation – PMNs, toxicity
  - Presence of microbes

**Clinical Pathology**

- **PCV or Hct, Total Solids/Total Protein**
- CBC
- Chemistries
  - **BUN, Creatinine** – pre-renal, renal azotemia
  - **Albumin**
  - **Electrolytes**
  - Ionized Ca, Mg – often decreased
  - Hepatic function
    - GGT, SAP
    - Bile Acids
- Blood gases
  - Metabolic alkalosis common with colon displacements
  - Metabolic acidosis – dehydration and damaged/ischemic bowel
- Lactate
  - ↑ with hypovolemia (dehydration, hemorrhage), and tissue damage
  - Persistent ↑ poorer prognosis

Radiology – enteroliths on abdominal films; smaller horses only

Ultrasound of abdomen

- Distention – identify location, nature – ileus vs. obstruction vs. enteritis
- Bowel thickness -
- Identify displacements – nephroplenic entrapment, etc.

**Mild colic; note stretched out stance, flat ears, UNHAPPY HORSE**

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**These parameters should increase with hemoconcentration or dehydration; If low or less than expected, look for fluid and/or protein loss due to ischemic or inflamed bowel, occasionally hemorrhage**

**Minimum database for emergency surgery:**

- **PCV, TS**
- **WBC w/ differential**
- **Creatinine**
- **Na, K, Cl, Calcium**
**Differential Dx:**  Disease of virtually every body system may present as colic at first!!

<table>
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<th><strong>Spasmodic colic</strong></th>
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<td>Gas distention</td>
<td>Impaction</td>
<td>Colitis:</td>
<td>Cholestasis/choangiophatitis</td>
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<td>SI, LI, or both</td>
<td>- Sand - regional</td>
<td>Eosinophilic</td>
<td>Choleliths</td>
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<td>Can be VERY painful</td>
<td>- Ingesta</td>
<td>Lymphacytic/plasmacytic</td>
<td>Liver lobe torsion</td>
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<td>Med Tx usu works</td>
<td>- Ileal impaction</td>
<td>Salmonella (typhilitis also)</td>
<td>Myocardial failure</td>
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<td>- Meconium - neonates</td>
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<td>Large Colon Displacement</td>
<td>Thrombo-embolic</td>
<td>Parturition/Abortion</td>
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<td>Fecolith – minis</td>
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<td>Enterolith – adults, regional</td>
<td>Potomac Horse Fever</td>
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<td>Foreign body - juveniles</td>
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<td>Colitis:</td>
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<td>Eosinophilic</td>
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<td>Gastrosplenic entrapment</td>
<td>Lymphacytic/plasmacytic</td>
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<td>SI Volvulus</td>
<td>Salmonella (typhilitis also)</td>
<td>Myocardial failure</td>
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<td>Inguinal hernia</td>
<td>Parasitism</td>
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<td>- Stallions, TWH</td>
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<td>Parturition/Abortion</td>
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<td>Intussusception</td>
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<td>Uterine torsion</td>
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<td>LI volvulus</td>
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<td>Ceco-colic intussusception</td>
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<td>Colitis:</td>
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<td>- Rhodococcus</td>
<td>Colitis:</td>
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<td>- Strangles and others</td>
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Enteroliths above from three different horses; largest was over 12 pounds!
Radiograph on right shows at least two enteroliths
**Careful with doses of MgSO₄ in impactions – hyperMg is reported - weakness and recumbency; too much Mg absorbed when bowel is not motile; MgOH – may see alkalosis -can slow motility, NaSO₄ can produce hypernatremia. Lidocaine is very useful in painful horses; thought to have prokinetic, anti-inflammatory, and analgesic effects.
Equine Colic

Prevention:

- Good quality hay/pasture
- Appropriate ratio roughage/concentrate; correct type of grain
- **Most horses do not** need much grain
- Regular turnout – as much as possible; consistent exercise
- Deworming according to parasite load, age, environmental burden
- Avoid coastal Bermuda hay - ileal impactions (esp. SE USA)

Prognosis:

**Excellent for most medical colics**
**Good** for Lg colon displacements without tissue compromise
**Guarded:** strangulating lesions, large resections, much compromised bowel
**Grave** for colon torsion unless surgery performed w/in a few hrs

Outcome depends on the **complications & severity**

- Peritonitis
- Ileus – prolongs hospitalization, ↑ cost
- Incisional problems – infection/hernia
- Adhesions
- Laminitis
- Gastric/intestinal rupture; rectal tear

Pearls:

**Horses on pasture 24/7 develop colic much less than any other**

Surgical outcomes have improved dramatically – better surgical and anesthesia techniques and equipment, education of owners, better Tx and earlier referral by DVMs.

If REALLY painful - Get initial info – HR, GI sounds, mm color/CRT; then administer sedative/analgesic and wait a few minutes to work – get more Hx while you wait; then go on to rectal/pass NG tube, etc.

**Good restraint during rectal exam** very important

- Ensure good exam
- Minimize risk of injury to you and horse
- Minimize liability

**Be Careful / Be Safe**
colicky horses can be dangerous – watch yourself AND the owner/others in area
Enteral therapy works quite well – water (+/- electrolytes) IS about the best stool softener available, inexpensive, and readily available! The gastrocolic reflex will be at work as well with oral treatment – distend stomach with volume, the colon contracts.

Refer SOONER rather than later if surgery is an option for owner;
Colon torsion - very quickly life threatening, refer for surgery immediately.

Don’t forget to ask about medical/mortality insurance – need permission from company for insured horses.

Strangulated jejunum; resected w/out untwisting to avoid rush of inflammatory mediators (endotoxins)

Colonic torsion - recently foaled broodmare; resection is required for this horse to survive

Refs: Large Animal Internal Medicine, B. Smith pp. 108-111, Manual of Equine Emergencies, Orsini and Divers pp. 188-199, Blackwell's 5 Minute Consult: Equine, 2nd ed., pp. 30-1, and almost the whole GI section. Overview of Equine colic and Diseases associated w colic by anatomic location, Merck Vet Manual online (10th ed), Images courtesy Dr. JG Adams