Mare:
Pre / post parturient hemorrhage

Clinical Signs
- Abdominal pain
- Trembling
- Sweating
- Tachycardia
- Tachypnea
- Pale mucous membranes
- Acute death

Diagnosis

Clinicopathologic Data
- Packed Cell Volume
- Albumin
- Total plasma protein

Ultrasonography
- Free cellular peritoneal fluid
- Hematoma in broad ligament
- Blood clot in ventral abdomen

Abdominocentesis
- Fluid analysis consistent with whole blood
- No evidence of plant material, uterine content, urine

Treatment
- Analgesics
  - Flunixin
  - Xylazine
Butorphanol
Lidocaine

Aminocaproic Acid
Plasminogen antagonist

Plasma
Provision of clotting factors
Provision of oncotic support

Acepromazine (?)
Some controversy
Decrease peripheral blood pressure
Increase renal blood flow

Yunnan Baiyao (?)
No evidence of influence on clotting indices in healthy horses
Some evidence of effectiveness topically

Formalin (?)
Off label
Dosages for IV push or diluted in fluids

Blood Transfusion
Ideally, cross matched donor
Unrelated QH gelding
Life span of RBC’s 2-3 days
Don’t forget about issues with RBC breakdown

Uterine / Vaginal / GI perforation

Clinical Signs
Related to septic peritonitis
Tachycardia
Tachypnea
Fever
Toxic mucous membranes / toxic line
Generally, anorexia, lethargy instead of overt colic

**Diagnosis**

*Abdominal ultrasonography*

- Increasing amount of peritoneal fluid, usually cellular in nature
- May have the appearance of blood

*Clinicopathologic Data*

- Typically, leukopenia
- Results indicative of dehydration

*Abdominocentesis*

- Fluid analysis will generally assist with diagnosis of GI vs. reproductive tract
  - GI – generally significant plant material, large numbers of G+ and G- bacteria
  - Early perforating lesion maybe isolated with omentum – only bacteria
  - Reproductive tract – bacteria present in fewer numbers
  - Less plant material – usually scant to none visualized

*Manual examination of the reproductive tract*

- Vaginal and uterine perforations usually palpable unless pinpoint

**Treatment**

- Surgical repair of reproductive tract lesion
  - Standing if vaginal
  - Ventral midline if uterine

- Euthanasia for GI tract rupture

**Bruised bowel syndrome**

*Clinical Signs*

- Low-grade to severe abdominal pain
  - Dependent on severity of the lesion
  - Tachycardia
  - Tachypnea
  - Decreased fecal production
Anorexia

Diagnosis

Typically, a diagnosis by exclusion
Ultrasonography – frequently no significant findings
Clinicopathologic data – no significant findings
  WBC – within normal limits
  Abdominocentesis – results unremarkable
Palpation per rectum
  Usually unrewarding, but MAY illicit significant pain in a particular area

Treatment

Supportive
  IVF
  Antibiotics
  Anti-inflammatory agents
    NSAIDS
    Pentoxifylline
    Heparin +/-
  Laxatives
  Nutritional support
    Currently parenteral nutrition is difficult to obtain
  Exploratory surgery

Diaphragmatic hernia

Clinical Signs

Variable and generally related to colic
  If rent is small – may go undiagnosed for a period of time
  If large the mare may not show significant signs of colic
  Small to moderate rent with SI incarceration will become extremely painful

Diagnosis

Ultrasonography generally sufficient
Exception is mediastinal location

Abdominocentesis
  Frequently not helpful
Thoracic radiography
Exploratory laparotomy

Treatment
  Surgical repair
  Monitor if extremely large

Colon Torsion

Clinical Signs
  Generally unrelenting pain
  Tachycardia
  Tachypnea
  Sweating
  HR may be relatively low

Diagnosis
  Ultrasonography
    Colon wall edema
  Palpation per rectum
    Early in colon may appear to be appropriately placed
    Later in process, severe gas distention of colon

Treatment
  Surgery

Mesenteric Rent / Avulsion

Clinical Signs
  Abdominal pain
  Tachycardia
  Tachypnea
  Gastric reflux – variable, depending on location and duration of rent

Diagnosis
Ultrasonography
Segmentally distended SI with rent
Similar findings with more blood in peritoneal cavity with avulsion
In both cases SI generally becomes thicker over time

Palpation per rectum
May appreciate distended small intestine

Clinicopathologic findings
Unrewarding blood work until disease is advanced

Abdominocentesis
May be unrewarding early
Increased peritoneal lactate later
Frequently a significant amount of blood with an avulsion
May be confused with uterine artery rupture

Treatment
Surgery – resection may be indicated

Rectal prolapse
Clinical Signs
Obvious at time of parturition
Problem is client estimation of the length and duration of the prolapse
Minor to major signs of abdominal pain at the time of presentation
Tachycardia
Tachypnea
Toxic mucous membranes – variable sign
May or may not be able to defecate
Typically requires manual evacuation or mare produces small amounts of feces frequently

Diagnosis
Palpation per rectum – suggestive
Proctoscopy – circumferential black mucosa
Later in course of disease – peritonitis
Treatment
  Supportive
  Euthanasia

Foal:
Perinatal asphyxia syndrome (PAS, neonatal maladjustment, dummy foal)

Clinical signs
  Variable
  Wandering
  Poor to absent nursing behavior
  Moribund
  Seizure activity

Diagnosis
  Based on clinical signs
  Clinicopathologic data
  May be completely normal
  May be associated with sepsis or placentitis
    Leukopenia
    Leukocytosis
  Elevated creatinine concentration
    Primary renal compromise
    May be indicative of placental dysfunction

Treatment
  Anti-inflammatory agents
    Banamine® – if serum creatinine concentration is within normal limits
    “Brain Candy” – minimal to no evidence that these change outcome
    DMSO
    Vitamin C
    Vitamin B1
    Magnesium
    Vitamin E
    Pentoxifylline
Intranasal oxygen supplementation

IV Fluids
   Electrolyte imbalances
   Acid / base status

Antibiotics
   If evidence of sepsis or local infection

Nursing care
   Feeding
      Recent evidence suggests neonatal requirements not as high as "normal" foal
      Sternal position
         Be careful with bottle feeding – aspiration
   Turn frequently
      Every 2 – 4 hours

Manage urine / fecal production
   Urinary catheter
   Diapers

   Manage ambient temperature

Meconium impaction
   Clinical signs
      Anorexia
      Abdominal pain
         Stranguria
         Recumbency
      Abdominal distension

Diagnosis
   History
      Lack of enemas
      Lack of fecal production
Ultrasonography
Large amount of colonic gas
Frequently the impaction can be visualized

Treatment
Analgesics
Dipyrone
Banamine
Butorphanol

Enema
Fleet is typically not enough
Soapy enema with bucket
Retention enema – acetylcysteine
   Sedation or short-term anesthesia
   Buscopan (?)

Oral laxatives
Mineral oil
Castor oil
Use judiciously

IV fluids
Consider hydration status
Calcium supplementation if anorexic

Bladder rupture
Clinical signs
Higher incidence in colts
May be able to produce urine
Anorexia
Abdominal pain
Abdominal distention

Diagnosis
History combined with clinical signs
Ultrasonography
    Hypoechoic fluid
    Observe urachal structures closely
Clinicopathologic data
    Azotemia
    Hyperkalemia
    Hyponatremia / hypochloremia
    Abdominocentesis
      Fluid creatinine concentration 2 x serum creatinine concentration
      Elevated K+ concentration

Treatment
    Stabilize patient
    Drain abdomen
    Attempt to lower K+
      Calcium containing fluids
      Dextrose containing fluids
    Medical management
      Urinary catheter
      Generally unsuccessful with urachal infection / rupture
    Surgery
      Use post-surgical urinary catheter

Inguinal hernia
    Clinical signs
      Enlarged scrotum
      Abdominal pain if entrapped
    Diagnosis
      Palpation
      Ultrasonography
    Treatment
      Frequent replacement
Surgery
If tunic ruptures, immediate surgery

Neonatal Isoerythrolysis
Clinical signs – variable
Icterus
Lethargy
Tachycardia
Tachypnea
Recumbency
Acute death

Diagnosis
Clinical signs with icterus
Clinicopathologic data
Anemia
Bilirubinemia
Azotemia - variable
Jaundice foal agglutination test – done within a few days
Mare's colostrum vs. foal's red blood cells
Question is how to interpret
1:4 vs. 1:8
Coombs test – presumptive
Flow cytometry

Treatment
Depends on the severity if the disease
NSAIDS
Corticosteroids
Plasma
Blood transfusion
Washed cells from mare
Whole blood, cross-matched
   Major – most important
       Donor RBC with recipient serum
   Minor – less important
       Recipient RBC with donor serum

Flexure contracture
   Clinical Signs
       Variable, depending on joint(s) involved
       Foal may not be able to rise
   Treatment
       Oxytetracycline
           High dose vs. low dose
       Splints
           PVC pipe
           Cast material
               Removable – clam casts
       Surgery
           Resection of the insertion of the flexor ulnaris muscle and ulnaris lateralis muscle
               For severe carpal contracture
               Unsuccessful if joint capsule involved or carpal bone deformity

Sepsis
   Clinical Signs
       Lethargy to recumbency – frequently a component of perinatal asphyxia syndrome
       Fever or hypothermia
   Signs related to primary body system
       GI
       Pulmonary
       Renal
Diagnosis

Blood culture is gold standard
Beginning to look at blood microbiome in humans
Fecal culture
Tracheal wash

Treatment

Broad spectrum antimicrobials
Anti-inflammatory agents
   Banamine®
   Pentoxifylline
   Vitamin C
   Vitamin B1
   DMSO

Septic Arthritis / Physitis

Clinical signs

Lameness of affected limb
May or may not have joint effusion
Fever

Diagnosis

Clinicopathologic data

   Leukocytosis

Joint fluid analysis

   WBC >30,000 / uL
   TP > 4.5 gm/dL

Generally, don’t see bacteria

Radiographs

   Frequently compare affected to contra-lateral structure
Foal's joints and physes can be difficult to interpret

Treatment

- Parenteral and local antimicrobials based on culture/sensitivity
- Joint lavage
- Regional perfusion
- Direct injection
- Stall confinement until resolution