**Peritoneal Effusion**

**Pure transudate**
- Clear, colorless
- TP <2.5 g/dL
- <1000 cells/µL
- Mononuclear cells predominate

**Low albumin (<1.5–1.8 g/dL)?**
- Yes
  - Liver failure/disease
  - Addison’s disease
  - Protein-losing nephropathy
  - Protein-losing enteropathy
- No

**Modified transudate**
- Clear, straw colored
- TP >2.5 g/dL
- 1000–7000 cells/µL
- Mononuclear cells, increasing numbers of neutrophils, lymphocytes

**Portal hypertension**
- Liver disease
- Right-sided heart failure (auscultation, echocardiogram, chest radiographs)

**Abdominal US normal?**
- No
  - Abdominal US
  - Bile acids
  - Resting cortisol levels
  - Urinalysis (UP:C if indicated)
  - Vitamin B12/folate
- Yes

**Chylous effusion (very rare)**
- White/opaque
- TP >2 g/dL
- Variable cell count
- Predominantly small lymphocytes
- Effusion triglycerides > serum triglycerides

**Effusion creatinine >2× serum creatinine**
- Effusion potassium >1.4× serum potassium

**Uroabdomen (transudate/modified transudate)**
- Surgery may be indicated

Exudate
- Turbid, hemorrhagic to purulent
- TP >2.5 g/dL (often >3 g/dL)
- >5000 cells/µL
- Neutrophils predominate

Hemorrhagic effusion
- PCV >10%
- TP >2.5 g/dL
- Variable cell count
- Similar to peripheral blood, does not clot

Malignant effusion
- Light yellow, clear to cloudy
- TP >2.5 g/dL
- Variable cell count
- Neoplastic cells identified

Intracellular bacteria present?
- Peripheral blood glucose >20 mg/dL higher than glucose in abdominal fluid (also seen in neoplastic effusions)?
- Positive culture (needs treatment before results)?

FIP PCR-positive effusion

FIP
- Treat as necessary
- Emergency surgery ± abdominal US
- FIP

Septic effusion
- Ruptured/damaged vascular neoplasia/organ
- Severe elevated PT/PTT?
- No
- Yes
  - Coagulopathy
  - Ingestion of anticoagulant rodenticide
  - Decontamination ± emesis ± vitamin K

Effusion bilirubin > serum bilirubin
- Bile peritonitis
- Treatment

Nonseptic effusion
- Effusion bilirubin > serum bilirubin
- Bile peritonitis
- Treat as necessary

Cats:
- Neoplasia
- Hepatic diseases
- Hemorrhagic cyst
- Ruptured bladder

Dogs:
- Neoplasia (hemangiosarcoma)
- Splenic hematoma
- Splenic torsion

Treat as necessary (eg, surgery ± imaging)

No
- Yes

Yes
- No

Trauma?

Abdominal US, chest radiographs, CT

Surgery ± chemotherapy

Severely elevated PT/PTT?

No
- Yes

Yes
- No

Dx
- Neoplasia

Tx
- Treatment
- Differential Diagnosis
- Investigation
- Treatment
- Results

See Aids & Resources, back page, for references & suggested reading.