

Cavity Effusions: Tips & Tricks

Wipe the skin free of ultrasound gel prior to -centesis procedure.

- Ultrasound gel will obscure the nucleated cells and can mimic bacterial organisms.

Save more effusion fluid than you think you'll need!

- Plain tubes +/- EDTA
 - EDTA does not actually “preserve” the cells better. Protein does that.
- No tubes with a crystalline clot activator

Components of fluid analysis (minimum necessary to classify an effusion in **bold**):

- Gross appearance
- **Total protein**
- Packed cell volume
- **Total nucleated cell count**
- Cytologic review

Add a bit of protein to those very low protein fluids prior to slide preparation.

- Commercially available purified albumin or serum. It doesn't take much. Even a dip of the pipette into some serum will do.

Slide preparation — more is just more.

- Start with less sample than you'd think.
- Make the angle of the spreader slide less acute for thinner samples.

Types of slide preparations:

- Direct — necessary to subjectively assess the cellularity of the effusion.
 - “Blood smear”-type
- Concentrated — necessary to sensitively screen for atypical cells, infectious agents, free bile, etc.
 - Line- or spun/sedimented-type

Consider an archive of stained, direct-preparation effusion slides with known numerical total nucleated cell counts for reference.

Mesothelial cells are almost ALWAYS scary looking and almost ALWAYS present.

- Don't be too quick to judge their numbers or features.
- Expecting their presence—especially in dogs—should increase your caution about calling a neoplastic effusion.

Serum-effusion biochemical comparisons to consider:

Triglycerides	Chylous effusion has > 2x the Trig concentration of serum
Bilirubin	Bile peritonitis typically has > 2x the Tbili concentration of serum, but white bile peritonitis related to a ruptured mucocele can break this rule
Creatinine	Uroabdomen has > 2x the creatinine concentration of serum
Glucose	Septic peritonitis often has glucose concentration > 20 mg/dL less than serum. Measure on an analyzer and NOT a strip-based hand-held (e.g., Alpha Trak)
Lactate	Septic peritonitis often has a lactate concentration > 2.0 mmol/L higher than serum.

Take the guesswork out and most effectively document — use a worksheet.