



## LIVER FINE NEEDLE ASPIRATION CYTOLOGY

### 1. Prepare your patient for liver aspirate:

- a. CBC – platelet count >50,000/ul
- b. BMBT < 2 minutes
- c. \*\*optional if available – PT/PTT, ultrasound to confirm no hypochoic areas in the liver.
- d. Light sedation only rarely needed for fractious animals

### 2. Gather supplies:

- a. 1-1/2-inch x 22g-25g needles
- b. 10-12cc syringes
- c. Glass slides
- d. Diff Quick or equivalent stains
- e. Microscope and immersion oil

### 3. Liver Aspirate – patient in dorsal recumbency

- a. Shave and prep a 3x3-inch area just to the left of the sternum, at the costal arch.
- b. Introduce the needle in the angle between the xyphoid and the left costal arch. Pause immediately after penetrating the skin. Direct needle cranially at 45° angle to the table top surface. If the pet jumps it will usually be during this stage.
- c. When patient is still, advance the needle to the hub, and as deep as possible, and then withdraw, without redirecting
- d. Fill a 10-12cc syringe with air, attach to the needle, and blow contents out of needle forcefully onto a glass slide. A normal liver aspirate will yield a drop of blood.
- e. Prepare vertical and horizontal pull apart slides – be gentle to avoid trauma to the cells.

- f. Stain as desired.
  - g. Confirm that adequate liver cells are on the slide. If you get only peripheral blood, repeat to try to get another sample. If you get fat only, try ultrasound guidance or introducing the needle more laterally.
- 4. Liver aspirate through the left caudal lung lobe – deep chested dogs, obese pets, patients with small livers, with patient in right lateral recumbency.**
- a. Shave and prep a 3x3-inch area in the 8<sup>th</sup> intercostal space,  $\frac{3}{4}$  of the way from dorsal to ventral.
  - b. Introduce the needle in the center of the prepped area, directing the needle toward the right (down) shoulder. Pause immediately after penetrating the skin. If the pet jumps it will usually be during this stage.
  - c. When patient is still, advance the needle to the hub, and as deep as possible, and then withdraw, without redirecting. If you hit a rib, withdraw the needle and try again either 0.5-1cm more cranially or 0.5-1 cm more caudally.
  - d. Fill a 10-12cc syringe with air, attach to the needle, and blow contents out of needle forcefully onto a glass slide. A normal liver aspirate will yield a drop of blood.
  - e. Prepare vertical and horizontal pull apart slides – be gentle to avoid trauma to the cells.
  - f. Stain as desired.
  - g. Confirm that adequate liver cells are on the slide. If you get only peripheral blood, repeat to try to get another sample. If you get fat only, try ultrasound guidance or a longer needle.
- 5. Monitor for bleeding for 24 hours.**