



ANIMAL EMERGENCY CENTER

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at the heart of critical care

Fine Needle Aspirate Techniques and Basic Cytology

Part 1 – Obtaining your sample

One of the least invasive and most clinically useful methods of identifying cancerous and benign lesions is fine needle aspiration. Almost any lesion can be aspirated with practice and the information gained from this test can be extremely valuable in treatment planning and also prognosticating for clients. Fine needle aspiration has the added benefit that it can be performed on conscious animals or with only light sedation in the fractious animal.

For cutaneous or subcutaneous masses or for lymph nodes no special preparation is needed. For areas within a body cavity, surgical preparation at the site of entry is recommended. Instrumentation includes a 20 or 22 gauge needle (smaller gauges result in cellular destruction while larger gauges increase peripheral blood contamination), a 10 cc syringe and cytology slides.

Two techniques for aspiration are described. One is the “needle only” method in which a needle (20 or 22 gauge) is inserted into the lesion/mass. This technique works well for lesions that readily exfoliate cells such as lymph nodes or also for very small lesions on the skin. In fact many cytologists prefer this method for lymph nodes, as it results in less cellular destruction secondary to vacuum aspiration and less peripheral blood contamination. It also allows the operator to better feel the texture of the lesion during the procedure, which may help to ensure that the actual lesion is being sampled, and not the surrounding tissues.

The alternative method is to use a needle (20 or 22 gauge) with a 10 cc syringe attached. With this method, suction is created after the needle is inserted into the lesion by rapid aspiration of the syringe several times. It is the method of choice for lesions in the abdominal and thoracic cavities. Metal or plastic mechanical aspiration devices are commercially available as well and may be helpful for ultrasound-guided aspirates of abdominal or thoracic lesions. This method can also be used for lesions that do not readily exfoliate cells with the “needle only” technique.

For cutaneous or subcutaneous lesions or lymph nodes, the lesion should be held or isolated with the non-dominant hand while the operator holds the needle with the dominant hand. The needle is passed in to the lesion followed by several quick thrusts into the site without exiting the lesion (if using the syringe technique, suction is applied with each thrust). The sample may be only in barrel of needle **not in syringe**. If no specimen is seen in syringe it does not mean an adequate sample has not been obtained! The needle is then removed for the lesion, and the syringe removed from the needle if used for aspiration. A 10 cc syringe is then filled with air and attached to the needle. The contents of needle are expressed onto several slides. The sample is smeared out by placing another slide on top of the first, and gently pulling the slides apart. This allows even dispersal of the material onto the slide. A common mistake is for the smeared material to be too thick on the slide. This hinders evaluation because individual cells cannot be identified so that cellular size and shape cannot be identified; so remember to smear out the slides to allow the most information to be gained from your sample.

In part II of this informational series, the basics of diagnostic cytology will be discussed.