Advanced Pathology Laboratory

Technique for Fine Needle Aspiration

Fine needle aspiration for cytologic diagnosis has become an indispensable component of the patients' work-up.
The following is a general guideline for obtaining cytology material from various organs and body sites.

- Obtain informed consent and advise the patient of the indications, advantages, and complications of the procedure.
- Use universal precautions.
- Label appropriate number of slides with the patient's name and date of service.
- The use off 22 gauge biopsy needle is recommended as a safe size in aspiration biopsies. In specific instances, smaller needles are advisable.
- The skin is prepared with an iodine solution and allowed to dry. Use isopropyl alcohol to move the iodine.
- Infiltrate the skin and subcutaneous tissue of the needle insertion site with local anesthetic
- Insert the needle perpendicular to the skin until you "feel" the needle enters the lesion.
- While the needle tip in the lesion, attach a 10- or 20- cc syringe to the needle.
- The needle is then rotated back and forth, while short (4 to 5 mm) advances and withdrawals of the needle are made.
- Suction is applied to the syringe during this procedure. The syringe is observed for the appearance of tissue and blood. If none is seen, a second or third pass can be made depending on the patient's tolerance and the risk.
- Slide preparation: place a drop of content of the needle on a clean, dust-free dry slide that is on a flat surface. Hold a second (spreader) slide against the surface of the first slide at an angle of 30 to 45° and draw back to contact the drop of tissue. Allow the tissue to spend and fill the angle between the two slides. Push the spreader slide at a moderate speed forward until all the sample has been spread into a moderately thin film. The spreader slide should be clean and dry. The thickness of the film can be adjusted by changing the angel of the spreader slide or the speed of spreading, or by using a smaller or larger drop of sample.

In many instances both a fixed and unfixed smears are required to provide an adequate cytologic evaluation.

- Immediate fixation while the sample is a still wet is necessary to preserve the cellular features needed for cytomorphologic interpretation. Even minimal air drying of the sample alters cellular features.

- Wet Fixation: immediate submission of the slide into a fixative solution.

- Spray fixation, immediate fixation of the slide with a spray fixative.
- Air dry slides: the slides should be rapidly air dried by waving the slides or with an electric fan.