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Fine Needle Aspiration

PRINCIPLE

Aspiration may be performed, with minimal/no trauma, on superficial, palpable masses of various body sites, most frequently breast, thyroid, or salivary gland. Under fluoroscopy or other radiologic imaging techniques, deep aspirates may be obtained of liver, lung, pancreas, mediastinum, muscle/soft tissue masses, or bone. Fine needle aspiration is a convenient, cost-effective, and minimally invasive way to sample clinically abnormal masses.

ADDITIONAL POLICIES

Toluidine Blue Stain C:357; Diff-Quick Staining C 353

SPECIMEN

Any specimen that may be aspirated; this includes superficial, palpable masses at/near the surface of the skin (e.g., breast, thyroid lesions) and deep-seated lesions that may be located by radiologic imaging techniques (e.g., lung, liver lesions).

MATERIALS

1. Three Coplin jars with 95% ethanol
2. Three prepared vials containing 20 ml CytoLyt solution
3. Three vials containing sterile saline
4. One prepared vial containing RPMI medium
5. Aluminum holder for CytoLyt vials
6. One box end-frosted slides
7. One box 24X50mm #1 cover glasses
8. Cardboard slide holder
9. Two 20ml syringes
10. Two 10ml syringes
11. 5 - 6 22gauge needles
12. 2 - 3 small formalin containers (for impromptu core biopsies)
13. 2 - 3 alcohol wipes
14. One pencil, one ball-point pen, and one indelible marker
15. Two Surgical Pathology requisitions
16. Steel cart with microscope*
17. Toluidine blue stain*
18. Diff-quick Stain*
19. One Coplin jar filled with water*
20. Immediate evaluation forms
21. Eye protection

*For rapid cellularity evaluation by pathologist

SAFETY

Standard precautions

QUALITY CONTROL

Specimen adequacy is documented on final report.

PROCEDURE

1. Upon arrival at location of procedure, lay out 3 - 4 clean glass slides, preferably on paper towel, on a stable, level work surface.
2. Place Coplin jars close to slides, but out of the way of the clinician / radiologist, who should have an unobstructed access to the slides. Open one jar.
3. Write the name or initials of the patient on the frosted head of the slides in pencil.
4. Label one vial of CytoLyt solution with the patient's name or initials, cytology case number, and open it.
5. Take one slide in the dominant hand; (this is the smearing slide) When clinician is about to express material onto the slide(s) place smearing slide at a 45 degree angle on top of specimen slide to catch expressed material.
6. Pick up specimen slide in left hand; holding smearing slide parallel to this slide, use an edge to gather expressed material toward label end (often this will show a line of tissue fragments suspended in blood).
7. Still holding smearing slide parallel to specimen slide, lay smearing slide flush on top of specimen slide across this line of material
8. With a steady motion, pull smearing slide across specimen slide, moving away from the label end. Immediately immerse slide in alcohol-filled Coplin jar. Repeat for each smear made.
9. The presence of a pathologist is required to give immediate reading of the specimen for cellularity. A slide is selected by the pathologist for either Toluidine blue stain or Diff Quick; the radiologist is informed as to the cellularity (i.e., adequacy) of the specimen. See Toluidine Blue stain procedure.
10. When adequate material has been expressed, the needle and hub should be rinsed with CytoLyt solution; the syringe is inserted into the CytoLyt solution, some CytoLyt aspirated, and the rinse material expressed into the CytoLyt vial. If the same area is being sampled several times, the same vial can be used for several rinses.
11. If a lymphoma is suspected, the contents of the syringe can be expressed into the vial containing RPMI medium. This vial is taken to Immunology, where flow cytometry can be performed.
12. If multiple sites on the same patient are sampled, these must be treated as separate specimens. If a second specimen is obtained, immediately seal all containers and package together all material from the previous aspiration. Repeat the above procedure.
13. The pathologist may request air-dried material, especially for thyroid aspirations. If sufficient material is available, make 1 - 2 air-dried smears; place them in a cardboard folder and submit them for Diff-quick staining.
14. If a core biopsy is done, open a container of 100% buffered formalin so clinician can submit tissue core for histologic studies. Specimen is triaged by cytopreparatory tech.
15. In radiology, the nurse in charge will present a completed Surgical Pathology requisition. Check for completeness and ask about any abbreviations you may not know. The cytoprep tech will need the information during accessioning.
16. Bring to Cytology laboratory for processing (see "Staining" and "Cytopreparatory Techniques" in this manual).

INTERPRETATION

The pathologist is responsible for addressing the specimen adequacy, and communicating with the radiologist.

RESULT REPORTING

FNA evaluations are noted on the final report.

LIMITATIONS

1. Insufficient experience of pathologist in interpreting FNA specimens.
2. Insufficient knowledge / experience of cytotechnologists.
3. Insufficient amounts of material (either due to poor aspiration technique or difficulty in sampling correct area, e.g., lesion blocked by bone).
4. Poor specimen preparation.
5. Making a diagnosis on inadequate/non-representative/poorly-prepared material.
6. Uncooperative patient

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