

# Protocol for performing and submitting fine needle aspirate samples to Cytopathology

Last updated January 2010

Andrew Fischer, M.D., Director of Cytopathology

Marypatricia Scott, Supervisor of Cytopathology

UMass Memorial Health Care

Tel 508-793-6120

The following procedure maximizes the ability of Cytopathology to provide a definitive diagnosis from FNA material, including production of a cell block for immunohistochemistry when appropriate. If microbiology studies are needed, separate passes should be submitted with separate requisition to Microbiology. For microbiology cultures, express the FNA into microbiology transport media (available through Microbiology). 10 ml of sterile saline is satisfactory for most microbiology cultures. If flow cytometry is needed, separate passes should be performed and expressed into sterile Hank's saline (available through Cytopathology) and sent to Hematopathology with a separate requisition.

Before the procedure, label a 15 ml container of reddish cytology fixative ("Cytorich Red" containing proprietary alcohols, trace formalin, and salts) with the patient's name. 25-22 gauge needles should be sufficient. Starting the procedure with a few cc of air in the barrel of the syringe allows the material to be easily expelled into fixative after the procedure. Introduce the needle into the mass. For radiographically guided FNAs, it is advantageous to use a stylet while placing the needle in order to avoid clotting and contamination of the needle during needle placement. When the needle is properly placed and the stylet is removed, use constant mechanical motion without suction, with several mm of back-and-forth excursion of the needle per second. If, after 2 to 4 seconds, there is no material evident in the hub of the syringe, apply suction. *It is the mechanical action of the moving needle rather than suction that will provide the best sample.* This is because suction by itself cannot dislodge cells from even very soft tissues. Suction will generally increase the amount of blood or necrotic material obtained, diluting any useful material.

Rinse the needle into the labeled tube containing the CytoRich Red cytology fixative. Pull some fixative back and rinse the needle. If material is clotted into the hub of the needle, pull back sharply on the syringe and release suddenly to create a popping action that will dislodge the material and allow it to be expressed into the fixative. Cap the vial and shake to disperse the sample. In order to have an adequate sample, it is recommended to perform a second pass and express the sample into the CytoRich red fixative. This should allow a cell block to be made.

## IMPORTANT INFORMATION TO HELP ASSURE AN ADEQUATE SAMPLE:

1. **No smears should be made** – adding all material to the CytoRich Red fixative gives more flexibility to Cytopathology to optimally work up the sample.
2. Each pass should contain about 4 drops of material. If more than 1 cc of blood is obtained, or if abundant necrotic material is obtained, a repeat FNA should be performed and placed into a separate labeled tube of CytoRich Red cytology fixative.
3. Necrotic lesions have no blood. A fleck of blood in a sample is a sign that the edge of a necrotic lesion has been sampled, and the edge is where there is the best chance for procuring diagnostic cells.
4. The CytoRich Red fixative lyses the red cells after about 15 seconds. If the needle rinse is completely transparent after 30 seconds, there is no diagnostic material! A good sample should have obvious whitish granular tissue particles after the blood cells are lysed. Note that fibrin (not useful for diagnosis) does not lyse and may appear as larger filmy sheets, and blood clots are not lysed by CytoRich Red, and will appear as red-colored particles.