Clinical Significance

The Ferning test detects the leakage of amniotic fluid from the membranes surrounding the fetus during pregnancy. It is used to diagnose premature rupture of the membranes occurring more than one hour before onset of labor, which may lead to infection and subsequent mortality. This risk is highest 24 hours after rupture. It can be eliminated by induction of labor.

Principle:

Ferning Test: Amniotic fluid, after 20 weeks' gestation, will crystallize upon drying on a microscope slide. The crystals look like fern fronds. Crystallization is due to the interaction of amniotic fluid proteins with salts. A positive test indicates leakage of amniotic fluid.

SCOPE

All McLaren Health Care physicians, including McLaren Medical Group (MMG) Managed sites and practices managed by their subsidiary hospital performing Provider Performed Microscopy testing.

Policy:

Ferning Test:

1. The Ferning test is a moderate complexity test. Staff must follow all Provider Performed Microscopy (PPM) guidelines. See Provider Performed Microscopy (PPM) procedure.

2. An online, image-based program called Med-Training Solutions is used to distribute competency and proficiency assignments, track test completion, test scores, and provide printable reports for documentation. An Email notification is sent to the Providers and provides an autologin link. The Provider clicks on this link to go directly to their test menu and assignments.

3. Results will be documented in the Med Training Solutions online program. Reports can be downloaded to PDF or copied to an Excel file. Real time printable reports and documentation are available by the POC administrators of the Med Training Solutions program.

4. If staff does not meet the minimum requirements of 80% on the proficiency or competency, the staff will be reassigned training modules with review of testing procedures. Staff will repeat proficiency or competency testing.

5. The off-site POC Coordinator will assign the staff competency annually upon hire and each year thereafter. Alternate Proficiency material will be assigned 2 times per year to all staff performing PPM (Provider Performed Microscopy) testing.

6. All testing personnel must be tested for colorblindness before performing patient tests.

7. Follow universal precautions during test performance using appropriate personal protective equipment.

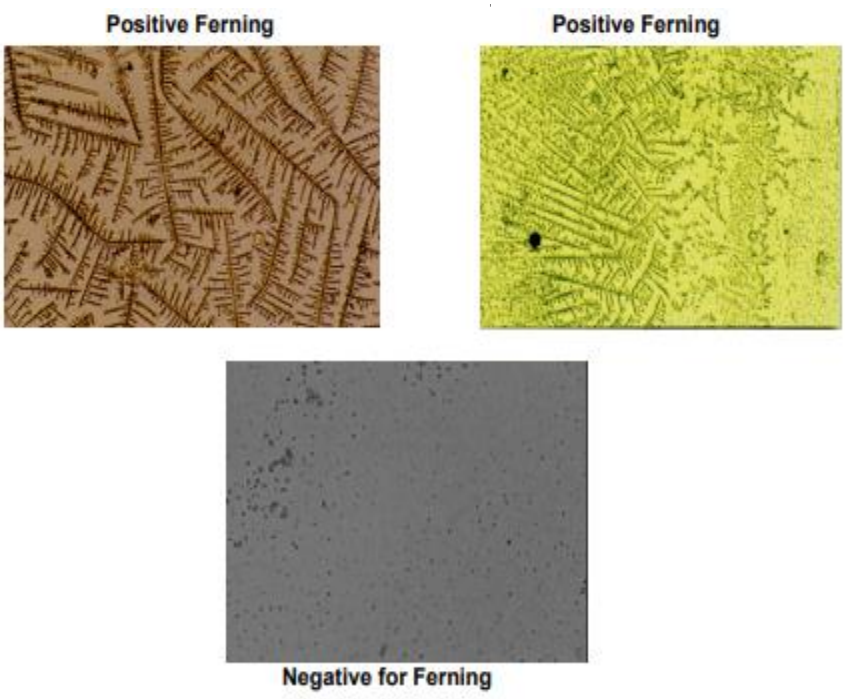
FERNING PROCEDURE –

Specimen Collection and Handling:

1. Wash hands and put on gloves.
2. Position patient for a pelvic exam.
3. Place a sterile speculum in the vagina, do not use lubricant or antiseptic as these may interfere with test results.
4. Collect vaginal secretions from the posterior vaginal area using a sterile swab for Ferning test, avoiding contact with the mucus plug in the cervix, or any lubricants, antiseptics, because these may interfere with the test.

Testing:

1. Immediately rub a sterile swab against a clean glass slide and make a thin smear.
2. Allow the slide to air dry for at least 5 minutes (do not blow or heat to shorten dry time) Do not apply a coverslip.
3. Examine several fields of the dry slide under the microscope on low power (10X) for the presence or absence of arborization, “fern” patterned crystals.
4. If present, the amniotic fluid crystallizes to form a fern-like pattern due to the relative concentrations of sodium chloride, proteins, and carbohydrates in the fluid.



Result Reporting:

1. Document the date, identity of testing personnel and ferning results in the medical record.
2. Interpretation of microscopic findings:
   a. Presence of “fern” patterned crystals in most microscope fields indicates the presence of amniotic fluid. Report as Positive.
   b. Absence of “fern” patterned crystals indicates the absence of amniotic fluid. Report as Negative.

Limitation of Procedure:

1. The ferning test
   a. False positive results occur from the presence of blood, urine or cervical mucus which also “ferns” but in a coarser pattern.
   b. False negative results can occur if the slide is not allowed to completely air dry.
   c. False negative results may occur from prolonged rupture of the membranes (longer than 24 hours).
   d. False negative results may occur if only a small volume of fluid has leaked.
   e. Meconium-stained fluid need not be assessed for ferning.

Quality Control:

No commercially prepared controls are available for the fern test. Reference material and/or the intranet can be used as a resource to aid in identification.

References:

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AmnioTest is a trademark of Pro-Lab Incorporated, January, 2001.
Massachusetts General Hospital-Pathology Service, Fern test procedure

9/17: alternate proficiency
1/18 PPM scope
2/19 Updated procedure with pics
6/19 MTS program