

Procedure
Dignity Health Central Coast Service Area

SUBJECT: Amniotic Fluid Ferning Microscopic Examination by Provider

ORIGIN: Point of Care Testing

NUMBER: 7500.POC.300

Applies to:		
<input checked="" type="checkbox"/> Santa Maria Campus, Marian Regional Medical Center	<input type="checkbox"/> Arroyo Grande Campus, Marian Regional Medical Center	<input type="checkbox"/> French Hospital Medical Center
<input type="checkbox"/> St. John's Pleasant Valley Hospital	<input type="checkbox"/> St. John's Regional Medical Center	

I. PURPOSE:

To provide instruction on the performance and reporting of the amniotic fluid ferning test.

II. CLINICAL COMPLEXITY:

Moderate Complexity

III. TESTING PERSONNEL:

Physicians who have been trained in specimen collection, slide preparation, and microscopic examination and who have demonstrated competency as assessed by the Point of Care Coordinator.

IV. CLINICAL UTILITY:

To aid in the diagnosis of ruptured membranes by detecting the presence or absence of amniotic fluid.

V. PRINCIPLE:

High concentrations of electrolytes and protein in amniotic fluid will result in a ferning (arborized) pattern when allowed to dry on a microscope slide.

VI. SPECIMEN COLLECTION:

Vaginal secretion is collected from the posterior vaginal pool via sterile swab. Care is taken not to touch the cervical mucus plug. Avoid the use of any lubricants or antiseptics which may interfere with the test.

Sample Type	Container	Storage Temperature	Stability
Vaginal secretion	Sterile swab collection	Room temperature	specimen swabs are to be processed immediately; smeared slides are to be dried for 5-10 minutes; examine immediately once dry

VII. MATERIALS:

Supplies / Materials	Equipment
<ul style="list-style-type: none">• Specimen swab• Microscope slide	<ul style="list-style-type: none">• Bright field microscope

VIII. QUALITY CONTROL:

N/A – reference photographs of positive and negative ferning are available

IX. PROCEDURE:

A. Vaginal secretion collection

1. Swab Procedure

- a) Label a clean glass slide with the patient's name and unique identifier.
- b) Saturate a sterile swab with vaginal fluid obtained from the posterior vaginal pool. Do not touch the mucous plug while sampling.
- c) Roll the saturated swab tip across the slide while applying slight pressure to express the fluid from the slide. Spread the specimen so that a thin smear is formed.
- d) Place the slide on a flat surface avoiding air currents.
- e) Allow the slide to dry completely in room air. This will require approximately five to ten minutes; do not blow air or heat the slide to shorten dry time. Do not apply a coverslip.

B. Microscopic examination

1. Dried microscope slide will be examined using bright field microscopy on low power without a coverslip.
2. If ferning is difficult to locate, examine all fields on the slide thoroughly.

X. REFERENCE RANGE:

Normal value for amniotic fluid ferning is negative indicating no rupture of membranes.

XI. RESULT REPORTING:

Record the presence of ferning as "positive" and the absence of ferning as "negative".

XII. PROFICIENCY TESTING:

Photographs are provided by the College of American Pathologists twice annually.

XIII. LIMITATION OF PROCEDURE:

A positive fern test should be used in conjunction with the patient's clinical history and presentation when deciding whether or not fetal membrane rupture has occurred.

False positive results may occur from specimens contaminated with blood, urine, or cervical mucus.

False negative results may occur from prolonged rupture of the membranes (longer than 24 hours) or if only a small volume of fluid has leaked.

Erroneous results may be obtained when:

- The slide is examined before it is completely dried.
- The slide is dried under a circulating air current (near or under a fan).

- Dirty or detergent-contaminated slides and/or pipettes are used.
- The slide is heat fixed.
- Cytological fixatives or preservatives are used on the slide.

Slides should be maintained in a covered box when not in use to minimize contaminants, which could lead to erroneous results.

XIV. REFERENCES:

- CLSI POCT10-A2:2011 Physician Microscopy Testing, 2nd Edition.
- Massachusetts General Hospital PPM Procedure LTR20894.
- UCSF Medical Center Fern Test Examination of Amniotic Fluid by Microscopy SOP-0032 Revision 2.
- MTS Fern Testing University of Washington Department of Laboratory Medicine (C) 2018.
- Provider-performed Microscopy Frederick L. Kiechle MD, PhD and Isabel Gauss MT(ASCP) Clinics in Laboratory Medicine, 2009-09-01, Volume 29, Issue 3, Pages 573-582.
- Mercer, Brian M., MD; Chien, Edward K.S., MD, MBA. Creasy and Resnik's Maternal-Fetal Medicine: Principles and Practice. Published December 31, 2018. Pages 712-722.e5. Figure 42.1
- McClatchey KD. Clinical Laboratory Medicine, 2nd Edition. Philadelphia: Lippincott Williams & Wilkins, 2002.
- Beckmann CRB, Ling FW, Smith RP, et al. Obstetrics and Gynecology, 5th Edition. Philadelphia: Lippincott Williams & Wilkins, 2006.

XV. ASSOCIATED DOCUMENTS:

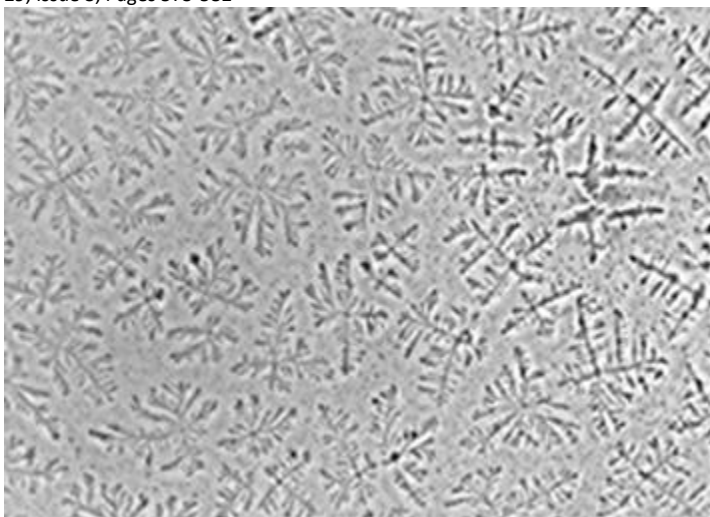
Amniotic Fluid Ferning Reference Images

Amniotic Fluid Ferning Reference Images

POSITIVE FERNING



Provider-performed Microscopy Frederick L. Kiechle MD, PhD and Isabel Gauss MT(ASCP) Clinics in Laboratory Medicine, 2009-09-01, Volume 29, Issue 3, Pages 573-582

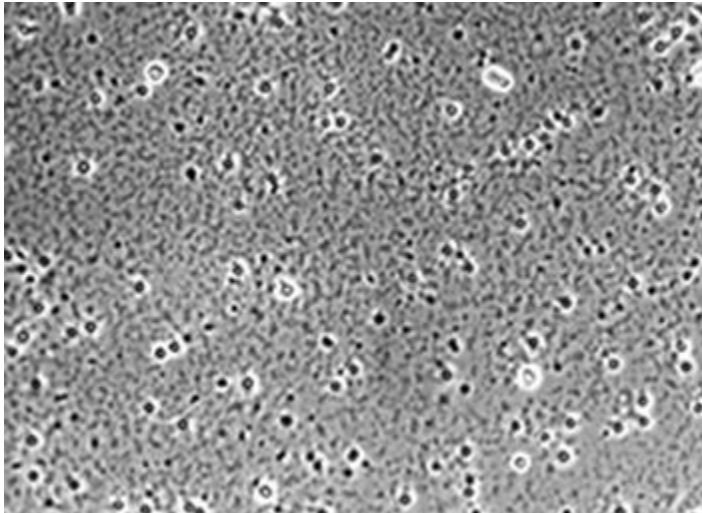


McClatchey KD. Clinical Laboratory Medicine, 2nd Edition. Philadelphia: Lippincott Williams & Wilkins, 2002.

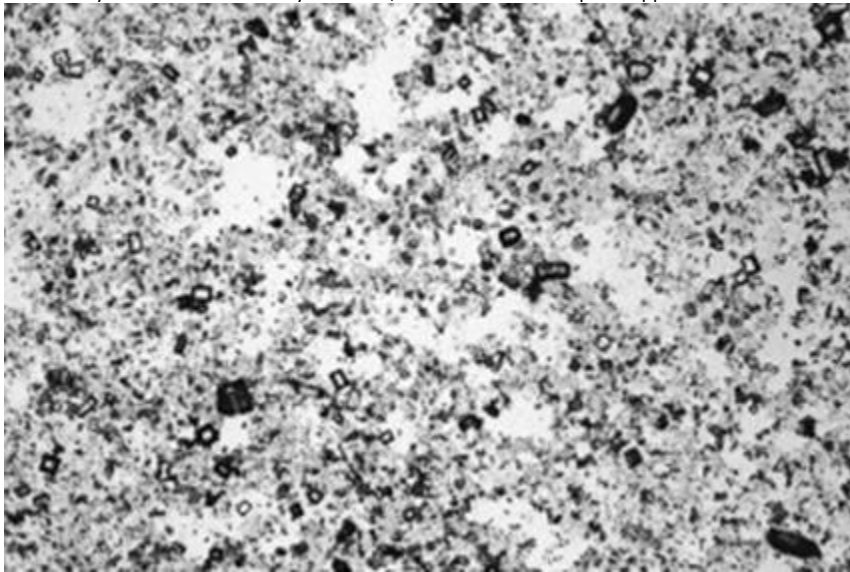


Beckmann CRB, Ling FW, Smith RP, et al. Obstetrics and Gynecology, 5th Edition. Philadelphia: Lippincott Williams & Wilkins, 2006.

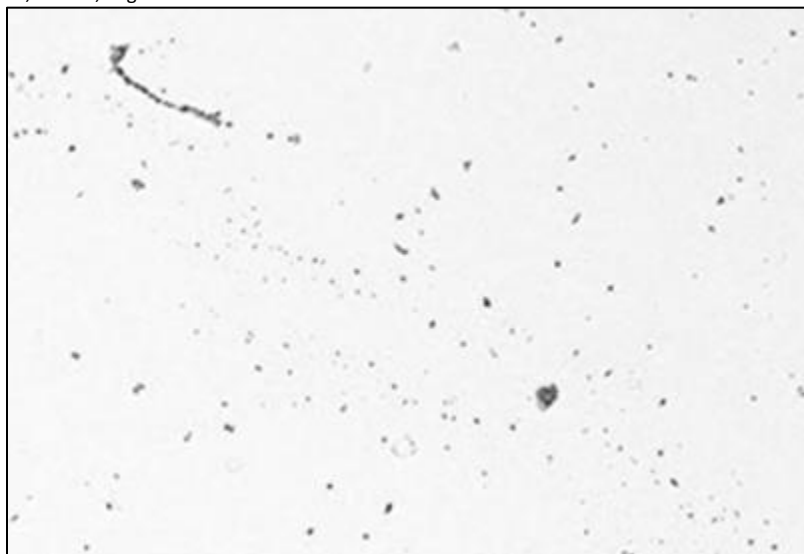
NEGATIVE FERNING



McClatchey KD. Clinical Laboratory Medicine, 2nd Edition. Philadelphia: Lippincott Williams & Wilkins, 2002.



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