Teach the Teacher
Effective Methods for Teaching and Troubleshooting Techniques of Fine Needle Aspiration Procurement

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No Conflict of Interest
Objectives

- Learn successful methods for teaching FNA procurement techniques.
Palpation-Guided Fine Needle Aspiration
Step 1; Observation

- Live or video

  Resources:
  - Palpation Guided FNA – Dr Ljung Fine Needle Aspiration Biopsy (FNA) Techniques
    - [https://youtu.be/LW0KE9toGq4](https://youtu.be/LW0KE9toGq4)
  - Fine Needle Aspiration Biopsy (FNA) Techniques – Dr Ljung Smear Preparation and flip technique
    - [https://www.youtube.com/watch?v=CjwqwDRP7OY](https://www.youtube.com/watch?v=CjwqwDRP7OY)
    - [https://www.youtube.com/watch?v=wAfy_Jx7H-0](https://www.youtube.com/watch?v=wAfy_Jx7H-0)
There is a gap between perception and reality when it comes to learning

NPR Host; Shankar Vedantam Feb 18, 2019
Limitations of Observation

Easier SEEN than DONE:
Merely watching others perform can foster an illusion of skill acquisition.

Kardas M. O’Briane Psychological Science 2018 Vol. 29(4) 521-536
The Moon Walk

**Exposure:**
Low - 1 view
High - 20 views

**Rating:**
1 – pretty bad
10 – pretty good

Low-exposure participants accurately imagined the quality of their low-exposure moonwalks and high-exposure participants significantly overestimated the quality of their high-exposure moonwalks. Repeated observation inflated people’s perceived ability.

Ref. Kardas M. and O’Brien E. Easier Seen than Done: Merely watching Others Perform Can Foster an Illusion of Skill Acquisition Psychological Science 2018, Col 29(4)521-536
Step 2

- **Practice – simulated setting**
  
  Examples:
  - Needle placement within target with positive forward motion
    - External focus
      - What the needle is doing - facilitates automaticity (placement of the needle in 3 dimensions, range and carving)
    - Internal focus
      - Hand, arm, body position etc. (muscle memory)
  - Smearing technique
    - Perfect oval
    - Flip technique
    - Concentrating a bloody specimen
  - Cell block
    - Needle wash
    - Fat pad biopsy
  - Highlight the good practice!

- **Bench vs. reality**
Step 3

- EVALUATION of skill and feedback
- Repeat steps 2 and 3 until optimal
Step 4

- Practice live on patients with supervision and feedback
Step 5

- Independence → Mastery

- ROSE
  - Immediate feedback on specimen quality
  - Potential opportunity to reinforce optimal procurement or opportunity refine
Ultrasound-Guided Fine Needle Aspiration
Steps

- Ultrasound machine functions
- Practice normal anatomy
- US phantom practice, parallel and vertical approach, and indication of each
- Reading recommendation: Ultrasound Features of Superficial and Palpable Lesions by Drs. Cynthia Benedict and Susan Rollins published by CAP
- Radiology didactic sessions for cytopathology fellows (i.e. lymph node, salivary gland, thyroid)
- Elective Ultrasound rotation
Boot Camp for New Cytopathology Fellows

- Two weeks starting on July 1st
  - Safety and infection control
  - Develop a rapport
  - Consenting (potential adverse events in general and specific scenario and treatment)
  - Time out
  - FNA procurement
    - Palpation-Guided FNA
    - US-Guided FNA
  - After visit summary (E/M)
  - Patient discharge instruction
  - Patient Evaluation
Head and Neck Ultrasound Elective Rotation Goals and Objectives

Head and Neck Ultrasound Elective (Two-Weeks)
Department of Pathology/Division of Cytopathology - UCSF

On this elective, the fellow will participate in the examination of head and neck organs and diagnosis of disease under ultrasound imaging under supervision of Dr. Lina Poder and other UCSF radiologists.

Competency Based Goals and Objectives

1) Patient care (see specific objectives below)
   - Perform thyroid ultrasound examination and be able to explain the findings and come up with a TI-RADS score for thyroid nodules.
   - Perform ultrasound examination of salivary gland lesions and be able to describe the findings and correlate with pathology.
   - Perform ultrasound examination of head and neck lymph nodes and identify and explain abnormal findings.
   - Participate in ultrasound-guided procedures such as fine-needle aspiration and core biopsy.

2) Medical Knowledge (see specific objectives below)
   - Understand the basic principles and explain the physical properties of the ultrasound.
   - Identify various head and neck organs and their normal ultrasound characteristics.
   - Describe normal ultrasound anatomy of various head and neck organs and the ultrasound characteristics of important pathologies.
   - Scan thyroid and head and neck lesions using appropriate instrument.

3) Practice based learning and improvement
   - Evaluate their diagnostic and consultative practices and improve their practices in patient care.

4) Interpersonal and communication skills
   - Communicate effectively with other health care professionals, including ultrasonographers, radiologists, and trainees outside of the Pathology Department.

5) Professionalism
   - Demonstrate a commitment to fulfilling their professional responsibilities, adhering to ethical principles, interacting with other health care providers in a professional manner, and showing sensitivity to a diverse patient population.

6) Systems-based practice
   - Demonstrate an awareness and responsiveness to the larger context and health care system.
1. I authorize ____________________________, M.D., and associates to perform the following operation(s) or procedure(s):

   [Description of operations or procedures]

   I understand that UCSF Medical Center is a teaching institution and that associates or assistants involved in the operation(s) or procedure(s) may include residents, fellows, medical students or other allied healthcare professionals. I authorize that such associates or assistants may perform or observe portions of the operation(s) or procedure(s) under the direction of the physician(s) identified in paragraph 1 above. That physician may be out of the operating or procedural room for some of the surgical tasks done by the associates and assistants if the physician identified in paragraph 1 determines it is safe to do so.

2. I authorize the administration of anesthesia and/or sedation as may be considered necessary or advisable. I have been advised that there are certain risks associated with anesthetics that may include allergic reactions, and/or drug intolerances, and dental, mouth or throat damage, discomfort or soreness. I understand that the explanations that I have received may not be exhaustive or all-inclusive and that other more remote risks may be involved.

3. I authorize the use of pathology and radiology services as necessary. I understand that any tissue removed will be disposed of at the discretion of the hospital pathologist or designee. I authorize the pathologist to retain, preserve, use or dispose of any tissues, organs, bones, bodily fluid or medical devices that may be removed during the operation(s) or procedure(s). I understand that such specimens may be used for research, as permitted by federal and state law. I understand that I have no property ownership or interest in such specimens or data derived from these specimens and no right or entitlement in any research or research project using or derived from the specimens.

   [Signature]

4. The nature and purpose of the procedure or operation, the likelihood of benefits, risks, complications and side effects of the procedure or operation and its alternatives, possible alternative methods of treatment (including the risks related to not receiving the operation or procedure) and potential problems that might occur during recuperation have been explained to me by [Doctor]. My consent is given with the understanding that any operation or procedure involves risks and hazards some of which can be serious and possibly fatal. I understand that risks may vary depending on the operation or procedure for which I am consenting. I am aware that the practice of medicine and surgery is not an exact science and no guarantee has been made as to the results or cure. I understand that the explanations that I have received may not be exhaustive or all-inclusive and that other more remote risks may be involved.

5. Transfusion: (strike out if not applicable): My doctor has discussed with me that there is a reasonable possibility that a transfusion of blood or blood products may be necessary. I have received a copy of the transfusion information form describing my transfusion options (unless I have a life-threatening emergency or medical contraindications). My doctor has discussed the risks, benefits and alternatives of the transfusion of blood and blood products with me. I have also learned about the option of pre-donating my own blood and have had the opportunity to discuss this matter with my doctor.

   [Signature]

   My tissue: [ ] may be used in medical research [ ] may not be used in medical research

   STOP

   Date ________________________ Time ________________________ M. Patient’s Signature: ________________________

   [Signature]

   Consent obtained in: [ ] English [ ] Spanish [ ] Cantonese [ ] Mandarin [ ] Other: ________________________

   Source required: [ ] Certified bilingual [ ] In person [ ] Telephone [ ] Video

   Interpreter Name and/or ID Number required (please print): ________________________

   STOP

   STOP
UCSF Medical Center

Time Out for Fine Needle Aspiration (FNA) Procedure Form

Name:

DOB/MRN:

Date of Service:

*Involve patient in time-out – Use interpreter for Limited English Proficient Patients*

Completed by: **Cytopathologist / Cytopathology Fellow** (circle one)

1. **Procedure:** Fine Needle Aspiration Biopsy

2. **Consent**
   - [ ] Consent form completed
   - If Limited English Proficient Patient:
     - [ ] Interpreter present
     - [ ] Consent form in patient’s primary language

3. **Time-Out**
   - [ ] YES
   - [ ] NO
   - Anticoagulant or Antiplatelet
   - [ ] YES
   - [ ] NO
   - Medications
   - [ ] YES
   - [ ] NO
   - Implants/Special Equipment at Biopsy Site

Comments: ____________________________________________________________

Physician signature: ________________________________________________

Print Name: _________________________________________________________

4. **Post-Procedure Monitoring**
   - [ ] A post-procedure monitoring plan has been ordered (See physician orders) or the unit has a post-procedure monitoring protocol in place.
   - [ ] Not applicable

C201.fm13

This form is part of the medical record.
<table>
<thead>
<tr>
<th>Please select the best descriptor for this doctor</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Treated me in a friendly manner*</td>
<td>✗</td>
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<td>2. Listened and understood my concerns*</td>
<td>✗</td>
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<td>3. Was thorough*</td>
<td>✗</td>
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<td>4. Treated me with respect*</td>
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<td>5. Used words I could understand when explaining medical information*</td>
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<td>6. I have confidence in this doctor*</td>
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<td>7. I felt free to ask this doctor questions*</td>
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<tr>
<td>8. Spent an appropriate amount of time talking with me*</td>
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<td>Q 8. I overheard this doctor talking in public, about me?</td>
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<td>Yes</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Q 10. Overall Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Experience</td>
</tr>
</tbody>
</table>
Fine Needle Aspiration & Biopsy Post Procedure Instructions

- You may notice bruising or slight swelling in the biopsied area. These symptoms should resolve within 10 days.

- You may experience soreness after the procedure. Use a cold pack on the site as needed. Avoid aspirin products and NSAIDs (ibuprofen, Advil) on the day of the biopsy unless prescribed by your physician.

- Watch for signs of infection which could include: redness, swelling, warmth or yellowish drainage from area of biopsy. Please contact your referring physician (doctor requested you obtain this procedure) or go to the nearest emergency room should you experience any of these symptoms.

- You may shower as normal. The biopsy site can be gently cleaned with soap and water.

- Avoid heavy exercise for 1-2 days. Light exercise such as walking or jogging is acceptable.

- Occasionally, additional evaluation, including another biopsy, may be required for a final diagnosis.

- Results may take 7 to 10 business days. The clinician who ordered the biopsy will receive the report once it is finalized. If you have not heard from your provider in 14 days, please call her/his office to inquire regarding results.
ThyroSeq® GC is a test used to help determine whether a lump or nodule in your thyroid is benign (non-cancerous) or malignant (cancerous). Most thyroid nodules are non-cancerous or benign but the only way to be certain is to examine the cells in the nodule. This is done by performing a fine needle aspiration or FNA.

What is an FNA?
For those thyroid nodules that are large or have suspicious ultrasound features, a Fine Needle Aspiration (FNA) biopsy is frequently performed to collect cells for diagnostic cytology. FNA biopsy is a procedure performed by your doctor by inserting a very small needle into your thyroid using ultrasound guidance to collect a small sample of cells from your thyroid nodule.

What happens after my FNA biopsy?
The FNA biopsy is sent to a doctor called a cytopathologist, who is specially trained to diagnose disease by examining your body's cells under a microscope. After careful examination of your FNA biopsy material, the cytopathologist is often able to provide a definitive diagnosis of benign or malignant disease in most cases.

Sometimes the cytopathologist is not able to make a definitive diagnosis and the results are "indeterminate" (not conclusively benign or malignant). In the past, surgery was recommended for most patients with indeterminate FNAs even though most thyroid nodules are benign.

If your thyroid nodule is found to be benign, no further treatment is typically required. For nodules found to be malignant on FNA cytology, surgical treatment is typically recommended.

However, in those nodules where cytology is indeterminate, clinical management is not clear and many of the cases can avoid surgery by using ThyroSeq.

Today improved testing is available and your physician may order the ThyroSeq test using the cells that have already been collected, avoiding another biopsy and potentially unnecessary surgery.

What is the ThyroSeq Test and How Does it Help Me?
The ThyroSeq test gives you and your doctor insight into your thyroid nodule. ThyroSeq is specifically designed for thyroid nodules when other clinical tools are unable to confidently say whether your thyroid nodule is benign or malignant.

ThyroSeq utilizes cutting-edge sequencing technology to identify key factors unique to your thyroid nodule. Your doctor will use ThyroSeq results in conjunction with cytology and your personal health to determine your treatment plan.

ThyroSeq can help clarify all types of indeterminate cytology, provide an accurate diagnosis, and help avoid unnecessary surgery. Visit our website at www.thyroseq.com

Assignment of Benefits (if your health plan requires)
For services rendered by Laboratory, I assign all applicable health insurance benefits and/or insurance reimbursement as well as rights and obligations that I have under my health plan to Laboratory including the right to:

- Release medical and insurance information necessary to process claims or appeals.
- Release medical records related to services provided by Laboratory when it is required to process a prior-authorization.
- Submit claims to the health plan.
- File appeals with the health plan or with other agencies as necessary.
- Collect payment of any and all medical benefits and insurance proceeds (including without limitation Medicare and Medicaid).
- Bill Patient/Guarantor for payments made by the health plan for services rendered by Laboratory.

A copy of this form may be submitted with your claim for payment.

I, ____________________________, have read and understand the information as documented above including any financial responsibility that may result from this testing.

______________________________  ________________________________  _____________________________
Signature of Patient/Guarantor          Relationship to Patient          Date

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Importance of Procurement Training

Ljung B-M *et al.* Diagnostic Accuracy of FNAB is Determined by Physician Training in Sampling Technique. Cancer (Cytopathology) 2001; Vol 93, No 4, 263-268

<table>
<thead>
<tr>
<th>Physician</th>
<th>Cancer or atypical by FNAB</th>
<th>False-negative or nondiagnostic</th>
<th>Sensitivity</th>
<th>Sampling error</th>
<th>Interpretive error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formally trained</td>
<td>53</td>
<td>1</td>
<td>98%</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Without formal training</td>
<td>36</td>
<td>12</td>
<td>75%</td>
<td>11</td>
<td>1</td>
</tr>
</tbody>
</table>

* P = 0.0014 versus physicians without formal training (chi-square test).
## Patient Care 3: Performance of Fine Needle Aspirations

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognizes indications for fine needle aspirations; properly identifies patient and describes the anatomy of the area</td>
<td>Performs a simple fine needle aspiration with appropriate patient consent and time-out with assistance (actual or simulated)</td>
<td>Independently performs a simple fine needle aspiration; performs a complex fine needle aspiration with assistance</td>
<td>Independently performs a complex fine needle aspiration</td>
<td>Teaches/consults in the performance of fine needle aspirations</td>
</tr>
<tr>
<td>Describes potential adverse events of various superficial fine needle aspiration procedures</td>
<td>Describes potential adverse events for specific clinical scenarios</td>
<td>Manages adverse patient events, with assistance (actual or simulated)</td>
<td>Independently manages adverse patient events (actual or simulated)</td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**
- Not Yet Completed Level 1
- Not Yet Rotated
Thank you!