

Ultrasound (Elective)

Length: 1 month during PGY-2, -3, or -4 year
Location: Kuakini Medical Center
Primary Supervisor: Junji Machi, M.D.
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The American Board of Surgery expects graduates of ACGME-accredited residencies to have a working knowledge of, and exposure to, certain evolving diagnostic and therapeutic methods. The Surgical Resident should have the opportunity to become familiar with evolving diagnostic and therapeutic methods, including:

- Diagnostic ultrasonography of the following areas: Head and Neck, Breast, Abdomen, including intraoperative and laparoscopic ultrasound, and Endorectal.
- Non-invasive diagnostic evaluation of the vascular system and invasive vascular interventional techniques.

A full understanding and proficiency in the performance of surgically oriented ultrasound (e.g., evaluation of the breast, focused abdominal ultrasonography in trauma, intraoperative ultrasound) will be acquired over five years of Residency. The purpose of the one-month ultrasound rotation (under the direct supervision of Dr. Junji Machi) is to refine the knowledge acquired prior to the rotation, to ensure an intense period of hands-on ultrasonography and to afford a period of time for in depth study of surgeon-performed ultrasound.

Goals

Upon completion of the Ultrasound rotation, the resident will be able to:

1. Describe the normal ultrasound anatomy of various organs and recognize the ultrasound characteristics of various pathologic conditions.
2. Scan various organs using appropriate instruments.
3. Perform ultrasound-guided procedures such as needle aspirations and biopsies.

Objectives

At the end of the Ultrasound rotation and through the period of residency training, the resident will be able to:

1. Understand ultrasound principles and explain the basic physical properties of ultrasound.
2. Select and use appropriate instruments for percutaneous, transabdominal, intraoperative and laparoscopic ultrasound.
3. Describe the indications of ultrasound, particularly in the evaluation of disease of the

- thyroid, breast, abdominal contents, rectum, and vascular system.
4. Describe advantages and limitations of ultrasound, compared to other imaging modalities.
 5. Describe various types of ultrasound-guided diagnostic and therapeutic procedures.
 6. Perform breast ultrasound examination and ultrasound-guided biopsies of breast abnormalities.
 7. Perform thyroid ultrasound examination and ultrasound-guided biopsies of thyroid abnormalities.
 8. Perform appropriate abdominal ultrasound examination of the liver, biliary system and pancreas.
 9. Explain the capabilities of endorectal and endoscopic ultrasound in the evaluation of diseases of the rectum and gastrointestinal system.
 10. Perform intraoperative and laparoscopic ultrasound examination of the liver, biliary system and pancreas.

Implementation

Residents will obtain ultrasound experience primarily at Kuakini Medical Center, The Queen's Medical Center, Straub Clinic and Hospital, and in Physician's offices throughout their rotations. The ultrasound fields, supervising Attending Faculty and the location (or rotation) of ultrasound examinations being performed are:

1. One-month ultrasound rotation at Kuakini, under the supervision of Dr. Junji Machi, mainly to learn ultrasound basics and thyroid, breast, abdominal, and intraoperative/laparoscopic ultrasound (close communication with Dr. Junji Machi is essential).
2. During the general surgery rotation at Kuakini, didactic lectures and hands-on practice of ultrasound by Dr. Junji Machi.
3. Endorectal and endoscopic ultrasound, didactic lecture by Dr. Donn Marutani (or Dr. Junji Machi).
4. Ultrasound principles, instrumentation and scanning techniques basics, didactic lecture by Dr. Junji Machi.

Tests (e.g. basic ultrasound tests) should be answered and returned in a few weeks after provided by Dr. Junji Machi. Each Resident is required to keep track of ultrasound case experience throughout the 5-year training by keeping a log sheet (refer to Documentation of Ultrasound Experience During Residency included herein). After the PGY-IV year, each Resident's ultrasound experience will be reviewed and discussed with Dr. Junji Machi. This will be important in the future as documentation will be required in order to obtain privileges from Hospitals to perform ultrasound examination independently as a practicing surgeon.

Suggested Readings

Machi J., Sigel B., 1997: *Ultrasound for Surgeons*.

Staren E.D., Arregui M.E., 1997: *Ultrasound for the Surgeon*.

Syllabus: American College of Surgeons, 2006: *Postgraduate Course on Abdominal Ultrasound: Transabdominal / Intraoperative / Laparoscopic.*

Machi J., Staren, E.D., 2004: *Ultrasound for Surgeons., Second Edition*

The above-suggested readings can be checked out through the Program office.

DOCUMENTATION OF ULTRASOUND EXPERIENCE DURING RESIDENCY

Name: _____ Date of Completion of Residency: _____

Ultrasound Courses Attended:

Date: _____ Location: _____

Type of Course: _____ Sponsoring Organization: _____

Ultrasound Rotation at Kuakini Medical Center (one month) Date: _____

Ultrasound Didactic Lectures Attended:

Dr. Machi's lectures on ultrasound principles _____ Hours
Instrumentation / Scanning Techniques _____ Hours
Clinical Applications _____ Hours
Other Lectures _____ Hours
Subjects _____

Ultrasound Hands-On Training Attended:

Dr. Machi's Skills Training _____ Hours
Other Training _____ Hours

Tests Answered and Returned:

Ultrasound Basics Yes _____ No _____
Abdominal Ultrasound Yes _____ No _____

Name: _____

Practical Ultrasound experience during residency:

	<u># Examinations Observed</u>	<u>#Examinations Performed</u>
Diagnostic Ultrasound		
Head & Neck	_____	_____
Breast	_____	_____
Trauma/Acute Setting	_____	_____
Abdominal	_____	_____
Intraoperative/Laparoscopic	_____	_____
Vascular	_____	_____
Endorectal/Endoscopic	_____	_____
Ultrasound-Guided Procedures		
Thyroid Interventional	_____	_____
Breast Interventional	_____	_____
Abdominal Interventional	_____	_____

Reviewed by and discussed with Dr. Junji Machi Date: _____