STANDARDIZED PROCEDURE
Diagnostic Head and Neck Ultrasonography

I. Definition

Head and neck ultrasonography is the use of an ultrasound transducer probe to evaluate normal anatomy and pathology of head and neck structures. This exam is also utilized for the guidance of needle placement for interventional procedures. Office-based ultrasound (US) provides real-time visualization of the thyroid gland, parathyroid glands, cervical lymph nodes, salivary glands, and base of tongue to correlate with and complement physical exam findings and other diagnostic results. Performing -office-based US is essential for pre-operative planning, serial exams for surveillance, and guidance for diagnostic and therapeutic interventions. Ultrasound is a non-invasive procedure that can be performed on adult or pediatric patients in an ambulatory or inpatient setting.

II. Background Information

A. Setting

The setting (inpatient vs. outpatient) and population (adult vs. pediatric) for the Advanced Health Practitioner (AHP) are determined by the approval of the privileges requested on the AHP Privileges Request Form. If the procedure is being done on a pediatric patient, it is required that Child Life Services be involved; and AHP must use age-appropriate language and developmental needs, as appropriate to the situation.

B. Supervision

The necessity of this procedure will be determined by the Advanced Health Practitioner in collaboration with the supervising physician/clinical expert/physician proctor or his/her designee based on applicable diagnoses or clinical scenarios as described in *Indications* below. Designee is defined as another attending physician who works directly with the supervising physician and is authorized to supervise the AHP. A resident or ACGME fellow cannot serve as the supervising physician's designee.

Direct supervision will not be necessary once competency is determined, as provided for in the protocol. The AHP will notify the physician immediately upon being involved in any emergency or resuscitative events or under the following circumstances:

1. Patient decompensation or intolerance to the procedure
2. Bleeding that is not resolved
3. Outcome of the procedure other than expected

C. Indications

Head and Neck US can be used for any subcutaneous lesion or subfascial mass in the head and neck that requires evaluation, characterization, or targeting for: biopsy, ablation, or other intervention. Specific indications for US examination include, but are not limited to:

1. Evaluation of the location and characteristics of palpable neck masses, including an enlarged thyroid.
2. Evaluation of abnormalities detected by other imaging examinations e.g., a thyroid/parathyroid nodule detected on computed tomography (CT), positron emission tomography (PET)-CT, magnetic resonance imaging (MRI), or seen on other ultrasound examination of the neck (e.g., carotid ultrasound).

3. Evaluation of cervical lymph nodes including size, characteristics, and location
4. Localization of thyroid/parathyroid abnormalities or adjacent cervical lymph nodes for biopsy, ablation, or other interventional procedures.
5. Evaluation of salivary glands for recurrent swelling, infection, mass, or obstruction

D. Precautions/Contraindications

Head and Neck US is performed on alert patients and requires thorough knowledge of head and neck anatomy. Contraindications to these procedures include severe cardiopulmonary compromise that would prevent the patient from lying flat; in this scenario, the procedure can be performed with the patient in reverse Trendelenburg position.

III. Materials

Equipment is available in the ambulatory Head and Neck Surgery and Oncology clinic and includes ultrasound scanner, ultrasound transmission gel, and exam table for an ultrasound procedure.

IV. Ultrasonography procedure

A. Pre-treatment evaluation:

The patient's history is obtained and a preliminary head and neck exam is performed including inspection and palpation of thyroid gland, cervical lymph nodes, and major salivary glands. Ensure standard equipment cleaning has been completed prior to commencing the procedure.

B. Set up:

Gather all necessary materials: ultrasound machine with correct indicated probe, correct software protocol, transmission gel, pillow, tissues, correct patient and accession number.

C. Patient Preparation:

1. Patient is identified with two approved patient identifiers prior to start of procedure.
2. Remove jewelry or high collared shirts to expose the neck.
3. Use towel or tissue to protect clothing from gel.
4. Position patient supine on exam table with pillow supporting neck and shoulders in a manner to gently hyperextend neck.

D. Procedure:

1. Ensure that all pre-procedure steps are taken prior to the procedure.
2. Apply gel to US transducer and place directly on patient's skin. Correlate anatomical landmarks with images on the monitor. Perform exam series as indicated by clinical situation, ie: thyroid exam, cervical lymph nodes, parathyroid exam, salivary glands.
3. Replace transducer in its cradle, wipe gel off patient's skin, and ask patient to sit upright slowly.
4. Memorialize images in PACS

E. Post-procedure:

No routine post-procedure monitoring is required.

F. Follow-up treatment:
No routine post-procedure diagnostic testing is required.

V. Documentation

A. Documentation of the following is required in patient's visit note in Apex:
1. Pretreatment evaluation.
2. Date of ultrasound, indications for procedure, comparison studies.
3. Procedure findings and patient toleration.
4. Images and video clips transferred to PACS.
5. A separate procedure note must be completed for billing purposes.

B. All abnormal or unexpected findings are reviewed with the supervising physician.

VI. Competency Assessment

A. Initial Competence
1. The Advanced Health Practitioner will be instructed on the efficacy and the indications of this procedure and demonstrate understanding of such.
2. Certification from "ACS Ultrasound Course" or equivalent CMEs.
3. The AHP will demonstrate knowledge of the following:
   a) Medical indication and contraindications of head and neck ultrasonography
   b) Risks and benefits of the procedure
   c) Related anatomy and physiology
   d) Ultrasound instrumentation and basic physics including probe choice and depth choice.
   e) Steps in performing the procedure
   f) Documentation of the procedure
   g) Ability to interpret results and implications for patient management.
4. The AHP will observe a clinical expert for six (6) months or a minimum of fifty (50) procedures. The AHP must perform this procedure with direct supervision of attending/supervising physician for a minimum of hundred (100) procedures to verify clinical competence prior to performing head and neck ultrasonography under indirect supervision.
5. After AHP has completed the required proctoring (as above) then competency will be met and the AHP may perform the procedure without direct supervision. Ten (10) of these independently performed US exams will be entered into the e-Log by the AHP, images & report reviewed by the clinical expert, and signed off by the physician proctor via UC Me e-Log/proctoring tools.
6. The AHP will ensure the completion of competency sign off documents and provide a copy for filing in their personnel file and a copy to the Medical Staff Office (MSO) for their credentialing file.

B. Continued proficiency
1. The Advanced Health Practitioner will demonstrate competence by successful completion of the initial competency.
2. The AHP must perform this procedure at least forty (40) times per 2 years and these will be entered into the e-Log by the AHP, images & report reviewed by the clinical expert, and signed off by the physician proctor via UC Me e-Log/proctoring tools.

3. Demonstration of continued proficiency shall be monitored through the e-Log (as described above) and MSO credentialing.
4. A standardized procedure e-Log is to be submitted with each renewal of credentials. It will include the number of procedures performed and any adverse outcomes. If any adverse outcome occurred then appropriate completion of an incident report should occur.

VII. RESPONSIBILITY

Questions about this procedure should be directed to the Chief Nursing and Patient Care Services Officer at 353-4380.

This procedure is intended for use by UCSF Medical Center staff and personnel and no representations or warranties are made for outside use. Not for outside production or publication without permission. Direct inquiries to the Office of Origin or Medical Center Administration at (415) 353-2733.