General Reference:
Infrequently Performed Studies in Nuclear Medicine - Part 2

Common Indications:
Obstructed ventriculoperitoneal (VP) shunt

Pre-scan Clinical History:
Determine history related to stated clinical history. Locate any pertinent imaging results which describe related findings.

Patient Preparation:
None

Relative Contraindications (if present, consult with nuclear medicine physician prior to scan):
1. Recent nuclear medicine studies
2. Pregnancy

Radiopharmaceutical and Route of Administration:
500 uCi In111 DTPA, injected into VP shunt reservoir

Procedure:
1. As soon as a shunt patency is ordered, consult with the attending physician and determine when their schedule will permit the procedure to be done.
2. Obtain the following materials and arrange on cart in imaging room:
    a. One (1) lumbar puncture tray.
    b. One (1) 25g Whitacare ***non-coring*** spinal needle
    c. One (1) package of 7 ½ size sterile gloves
    d. One (1) bottle of betadine solution
    e. One (1) 10ml 0.9% saline flush
    f. Electric clippers with a sterile blade (if the patient has hair on his/her scalp covering the shunt).
3. Draw 500 uCi of In111 DTPA into a 3ml syringe using sterile technique. Wrap the dose syringe and place it in a lead-lined dose carrier.
4. Position the patient supine on the imaging table and notify the attending physician.
5. The attending physician will perform the injection directly into the patient's shunt reservoir; ***only a physician may inject into the shunt.***
6. Begin imaging immediately after the injection is complete. Acquire dynamic acquisitions over the head, chest, and abdomen, 128x128 matrix, 30 frames, 30 seconds per frame, 15% windows around 172 and 247 keV. Head and chest acquisitions may be halted and moved to the next set upon visualization of shunt tubing activity reaching the bottom of the FOV. During the abdominal acquisition, look for the activity spilling into the abdominal cavity.
7. Show the completed images to the nuclear medicine physician. They will determine the need for any delayed static images, 128x128 matrix, 300 seconds.

Review:
Prepare images and documents for clinical review as per **Nuclear Imaging Acquisition and Presentation Guidelines**

Dr. Barr | Date Implemented: 2012 | Date Revised: 11/2018 | Date Reviewed: 8/2025