



Cardiac Amyloidosis with SPECT

Approval: K. Shamlou, MD

rev:2

7/15/2026

Cardiac Amyloidosis with SPECT

Radiopharmaceutical: ^{99m}Tc -PYP (HDP can be used when PYP is unavailable)

Dose: 20 mCi

T1/2: 6 hours

Energy: 140 keV

CPT: Amyloid Planar spot view and SPECT: 78803, Amyloid Planar spot view only: 78800

Indications include, but are not limited to:

1. Suspected transthyretin (ATTR) cardiac amyloidosis.

Patient prep:

1. No prep, no fasting required.
2. Instruct patient to drink at least 4 cups of 8 oz of water between injection and images.

Equipment

1. GE 830

Procedure:

1. Inject 25 mCi of ^{99m}Tc -pertechnetate into PYP vial, let stand for at least 10 minutes
2. Set intravenous line for injection of radiotracer.
3. Withdraw 20 mCi of ^{99m}Tc -PYP from kit and inject patient followed by at least 20 ml normal saline flush. Technetium Tc 99m Pyrophosphate Injection is injected intravenously over a 10- to 20-second period.
4. At 3 hours post injection acquire planar images of the chest in the Anterior, Lateral and Left Anterior Oblique projections with the detector configuration at 90° .
5. Immediately following static views, acquire SPECT scan of the chest with the detector configuration at 180° .

Acquisition Parameters

STATIC IMAGES

- LEHRS collimator
- Matrix size: 256 x 256
- Zoom: 1.0 (full field)
- Total counts 1,000K
- Detector angle 90° - L mode

SPECT

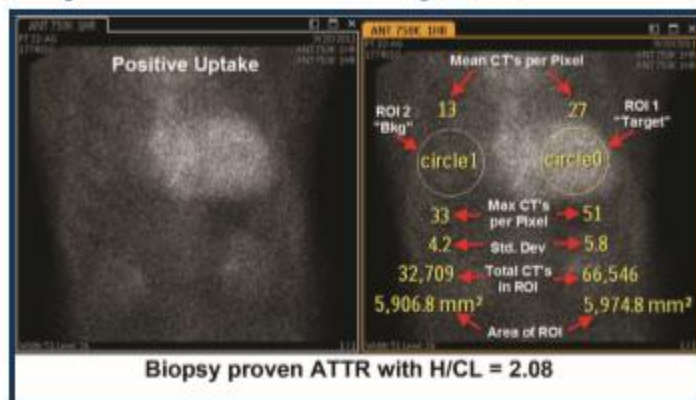
- LEHRS collimator
- Matrix size: 128 x 128
- Zoom: 1.0 (Full Field)
- Number of angles: 120
- View angle: 3
- Time per angle: 15 sec
- H-mode

- Starting angle 0°
- SPECT mode: Step
- Orbit type: Body contour
- Rotation direction: Clockwise
- Acquire during motion between steps: ON
- Rough overlap: 4

Processing

1. image below for ROI reference of size and location)

Figure 1. Quantitation of Cardiac ^{99m}Tc -PYP Uptake Using Heart to Contralateral Lung (H/CL) Ratio



2. **Circular** target regions of interest (ROI) are drawn over the heart on the planar images and are mirrored over the contralateral chest to account for background and ribs.
3. When drawing ROIs the "target" ROI needs to be over the left ventricle of the heart, the "bkgd" ROI needs to be over the lung (this will include ribs, the sternum should not be included in either ROI) if the heart is enlarged the "bkgd" ROI may need to be shifted laterally as not to include any cardiac uptake.

Processing/ Datasets for PACS

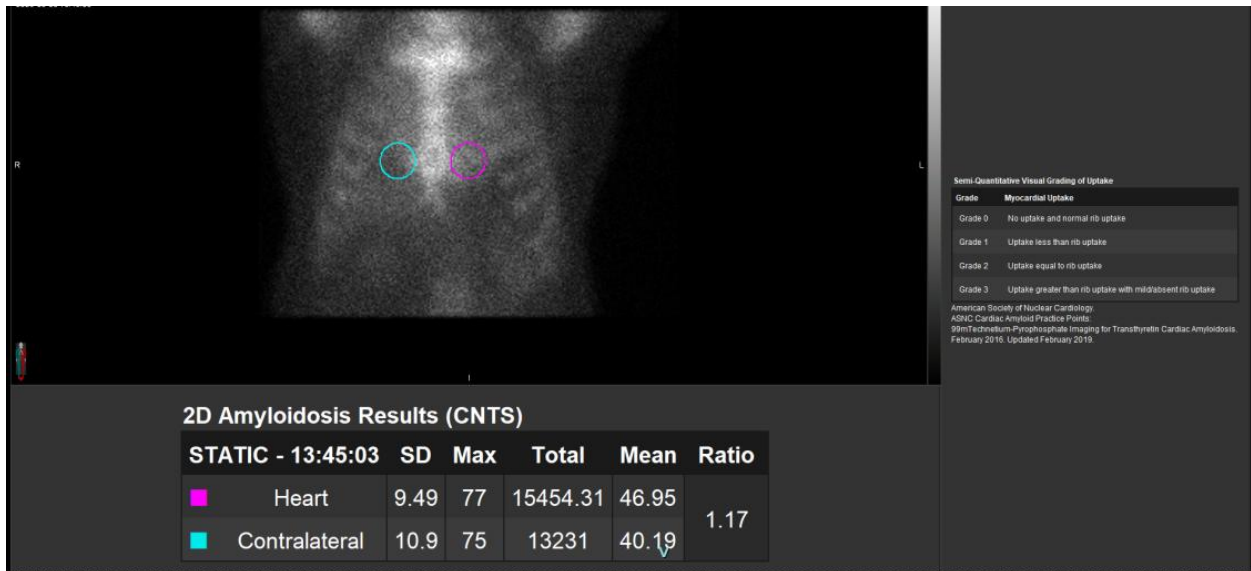
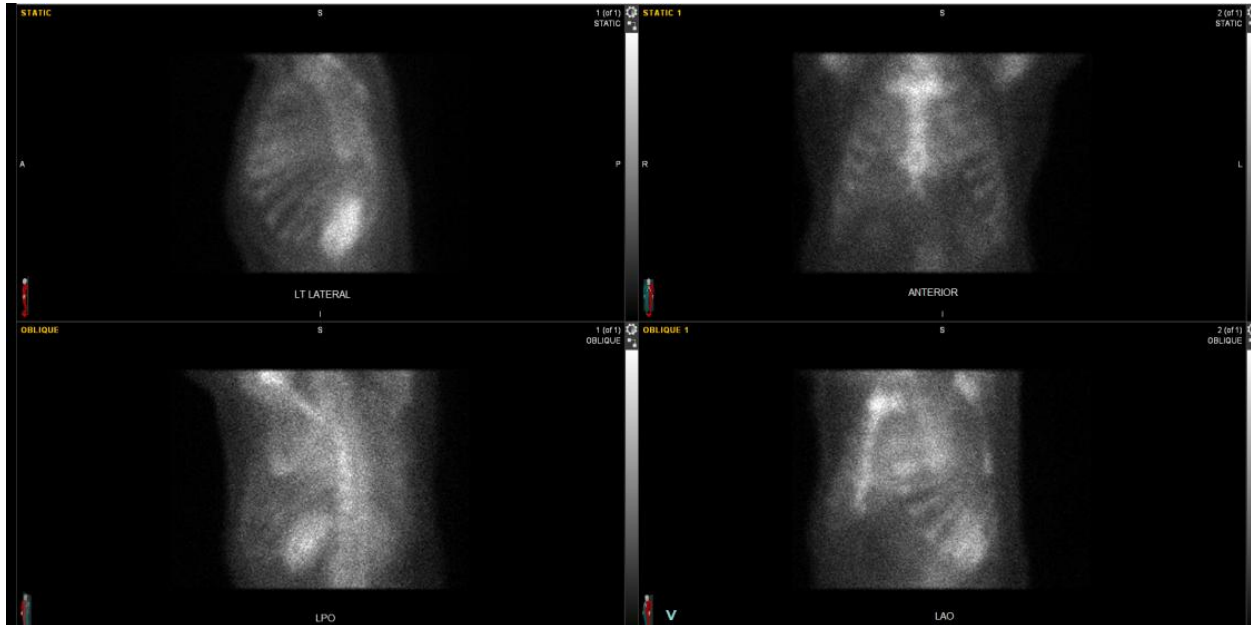
- Screenshot of the 4 planar statics
- Screenshot of ROI / Ratio calculation
- Axial, coronal, and sagittal dynamic SPECT datasets
- Composite screen shot of the dynamic SPECT data reformatted into summed frames (3 frames per image) – Axial, coronal, and sagittal
- Raw projection dataset & Volume SPECT reconstruction

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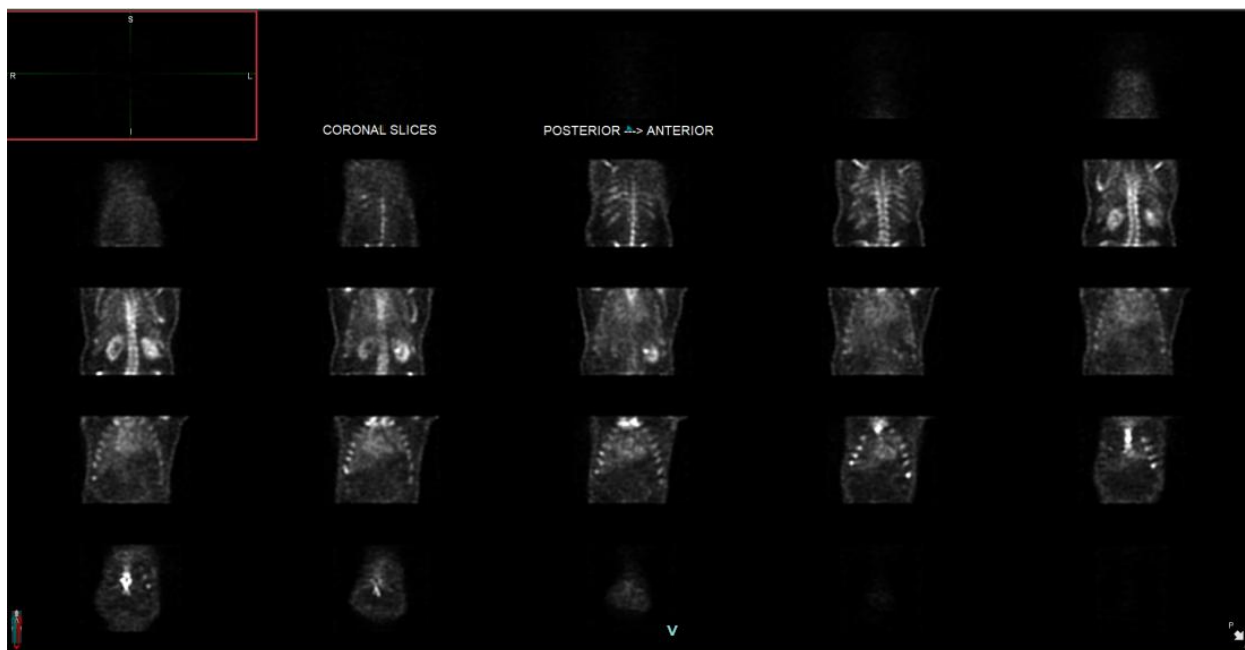
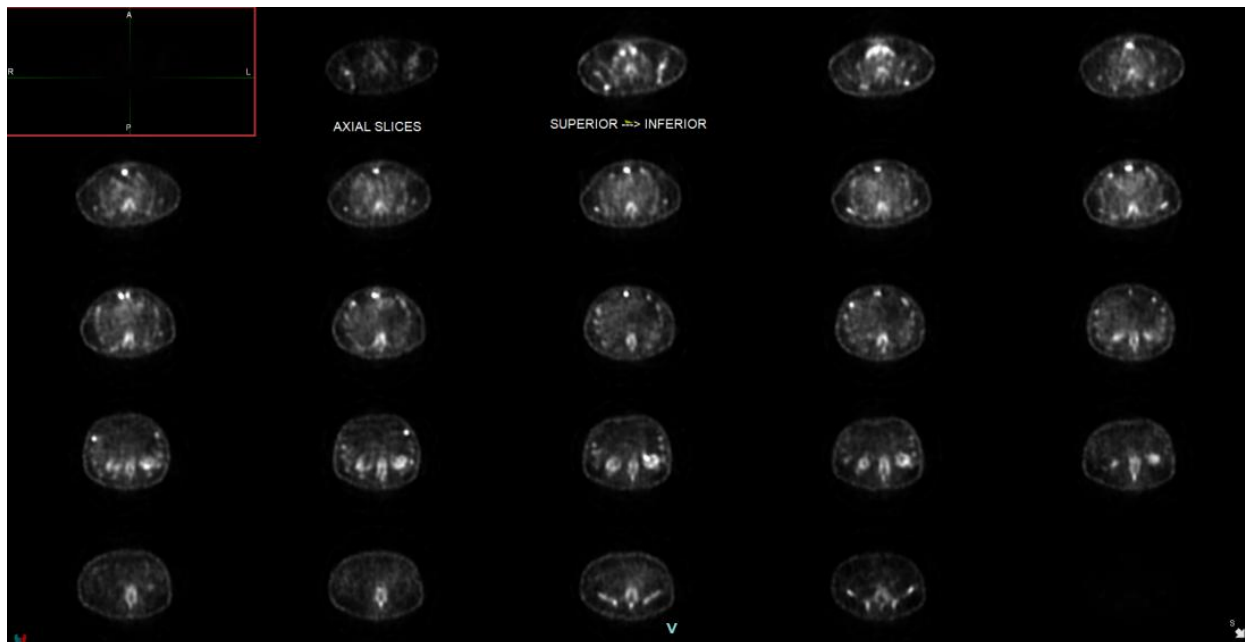


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