**INTRODUCTION**

- Approximately 10,000 new cases of cutaneous melanoma annually (~7,300 US).
- Melanoma first disseminates in an orderly progression through lymphatic channels to the regional lymph nodes.
- Regional lymph node metastatic involvement is the single most important prognostic factor, lowering the 5-year survival rate to approximately 50%.
- Lymphoscintigraphy has proved reliable in demonstrating variability in cutaneous lymphatic flow and identifying the drainage patterns.

**REFERENCES**


**LYMPHATIC DRAINAGE**

**An Ideal Tracer should:**

- Tracers: 99mTc filtered sulfur colloid (US), 99mTc human serum albumin (Europe), 99mTc antimony trisulphide colloid (Australia, Europe, Canada), 99mTc Tilmanocept (US)
- Small particles (<100 nm diameter) to clear the interstitial space and enter the lymphatic channels
- Have rapid clearance from the interstitial space into the lymphatic system

**PROTOCOL**

- Intradermal (not subcutaneous) radiotracer injection is recommended.
- A 25-27 G needle, as tangentially as possible to the skin surface.
- 0.2–0.3 mL volume is recommended to avoid collapsing the lymphatic channels.
- Avoid contamination of the skin.

**IMAGING:**

- Total injected activity ranges from 200 to 1000 μ Ci, divided into aliquots of 100–250 μ Ci, in a volume of 0.1–0.2 mL.
- 2–8 separate injections may be necessary, depending on the excision scar size and area.
- Avoid inflamed, infected, or scarred areas.
- Avoid contamination of the skin.

- Lateral, oblique views and SPECT/CT to facilitate lymph node visualization over injection site or superimposed lymph nodes.

**Lymphoscintigraphy and Sentinel Node Biopsy:**

- In-transit nodes may be the first place for tumor or radionuclide to be trapped and reflect a true “sentinel node”.
- Prior studies have shown ~10–20% of in-transit nodes to have metastatic cells with a rare cases of no associated tumor involvement in the regional lymph node basin.

**Anatomical Areas:**

**ANATOMICAL AREA**

**COMMON**

- Multi-field common, often small and very near or directly under melanoma site
- In-transit nodes represent embolic lymphatic tissue found along the pathway of a lymphatic channel, occasionally seen between a tumor and the regional lymph node basin
- In-transit nodes may be the first place for tumor or radionuclide to be trapped and reflect a true “sentinel node”

**LESS COMMON**

- Approximately 10% of in-transit nodes have to be dissected site
- In-transit nodes may be the first place for tumor or radionuclide to be trapped and reflect a true “sentinel node”

**REFERENCES**


