

Proposed Sentinel Lymph Node Injection Technique

Last Reviewed: Sept 25 2018 originally sent: April 20, 2006

Radiopharmacy Preparation:

Prepare 15 MBq of filtered (0.22 um filter) Tc-99m Sulfur Colloid, in a 10 cc syringe, and make to a total volume of 6 cc (with 2 cc 1% lidocaine and sterile saline to make 6 cc total volume). Attach a 1 1/4 inch 27 g needle to the syringe. If the patient's surgery is the next day, then use 37 MBq of activity.

Injection Technique:

For both techniques, prep and drape area with a sterile technique.

A) No Prior Breast Surgery (prior breast biopsy by Radiology okay)

- 1) Starting approximately 0.5 cm away from the outer edge of the areola in the upper outer quadrant (at 2 or 10 o'clock depending on which breast is affected) enter the skin and advance the needle medially and horizontally towards the nipple in the subdermal tissues, no more than 5 mm below the areola skin surface. (See Figure 1) Inject the tracer slowly, and slowly withdraw towards the end of the injection. You will see the areola dermis distend as you are injecting. Massage after injection is not required.

B) Prior Breast Surgery or Lumpectomy

- 1) Instill equal amounts of tracer around the breast in a peri-tumor or peri-scar approach, at least four separate locations around the tumor. Do NOT inject into the tumor or into any residual seroma. Have the patient gently massage the breast for 3 to 5 minutes after injection.

Always inject slowly!!!!!!!!!!!! It should take about 30 seconds to inject the tracer.

Technique is adapted from:

1) Kern K. Breast Lymphatic Mapping Using Subareolar Injection of Blue Dye and Radio colloid: Illustrated Technique. J Am Coll Surg Vol 192, No 2, April 2001.

We have made the following modifications from the technique outlined by Kern.

- (1) Filtered sulfur colloid with a 0.22 um filter is used as before to prevent excessive colloid clumping.
- (2) The dose is 15 to 20 MBq, instead of 37 MBq mentioned in the article, as this dose has been used in the past, and the intraoperative gamma probe at VIHA has been optimized for this dose.
- (3) Lidocaine is added to the radiopharmaceutical and injected as part of the total volume, as has been done in the past, instead of injecting separately to reduce patient discomfort, and prevent leakage on skin through skin freezing needle track.

Figure 1: Sub-areola injection (Figure from Reference #1)

