Category II  B. Breast Surgery  3. Nodal Evaluations

The Breast Center at Medical City
Medical City Dallas Hospital (MCDH)

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Intraoperative Sentinel Lymph Node Biopsy Radioisotope Tracer Injections
Pain or No-Pain – Let’s Make It Better for the Patient!

Introduction: Significant advancement in surgical management of women with breast cancer has included sentinel lymph node (SLN) biopsy as an accurate and reliable technique to evaluate the axilla. This involves injection of a radioisotope and/or blue dye for identification of the SLN. The radioisotope injection into the subareolar breast is generally regarded by the vast majority of patients as an uncomfortable, often painful experience. The anticipation of this procedure, as well as having injections into the breast by an unfamiliar health care provider, can contribute to psychological distress. The NAPBC accredited Breast Center at Medical City believes that breast patients should not experience preoperative procedural pain and distress, and therefore conducted the following quality improvement initiative to address this problem.

Objective: Eliminate preoperative procedural pain and distress associated with sentinel lymph node biopsy radioisotope tracer injections by instituting a process of intraoperative administration after the induction of anesthesia.

Method:
• Conducted a thorough literature review on topic, as well as communicated via e-mails and phone calls with other breast cancer programs regarding evidence-based “best practices” for pain management during SLN biopsy tracer injections
• Topical analgesic EMLA cream used experimentally for approximately 6 months, with patient applying to periareolar area prior to arrival for procedure
  o Developed survey to assess breast patients’ perception of pain and distress during tracer injection, which patients completed post-operatively either in hospital or office setting
  o Found less than optimal reduction in pain per patient reports via post-procedure surveys, and confirmed in further literature findings
• Met with Research Manager and interdisciplinary team, including nuclear medicine, pharmacy, radiology, and surgery, and explored feasibility of conducting a formal research study comparing EMLA cream vs. buffered lidocaine mixed with radioisotope injection
• Group also studied evidence-based research which demonstrated successful identification of sentinel lymph node via immediate intraoperative tracer injection (reference list available)
• Met with Breast Surgeon and interdisciplinary professionals including Radiologists, Radiation Oncologist, Radiology Director, Oncology Director, Radiation Safety Officer, OR Manager, Surgical RN/CRNFA and Breast Oncology Navigator
• Radiologists verified current MCDH policy and procedure included the provision for nuclear medicine technicians to perform SLN biopsy tracer injections. Each technician was personally supervised by the Radiologist during four administrations.
• Intraoperative tracer injection protocol developed and implemented
  o In OR, just prior to intubation of patient, breast surgeon’s first assistant RN notifies radiology and requests radiologist or nuclear medicine technician come to OR for tracer injection administration
  o Tracer injection administered following anesthesia induction and breast massaged for 5 minutes
  o Surgery initiated, breast and axillary staging procedures performed

Results: Since September, 2013, thirty Medical City mastectomy and breast conservation patients have received sentinel lymph node biopsy radioisotope tracer injections in the operating room after anesthesia initiated, thus omitting the necessity of undergoing a separate, painful procedure prior to surgery. All patients had successful gamma probe identification of their axillary sentinel lymph nodes.

Conclusion: Incorporating intraoperative injection of radioisotope tracer is not only a feasible, effective technique which rapidly localizes and accurately identifies axillary sentinel lymph node(s) in breast cancer, but does so without any pain or distress to the patient.