Breast Biopsy Marker Insertion

Purpose

To provide Lower Mainland Medical Imaging (LMMI) staff with guidelines for the placement of biopsy markers in patients who have undergone a breast biopsy. The guideline is based on the CAR Practice Guidelines and Technical Standards for Breast Imaging and Intervention 2016.

Site Applicability

This guideline applies to LMMI staff within Fraser Health (FH), Providence Health Care (PHC), Provincial Health Services Authority (PHSA) and Vancouver Coastal Health (VCH) who perform breast biopsy procedures.

Practice Level

MI staff: radiologists, residents and fellows.

Need to Know

- Placement of a biopsy marker at the tissue sampling site facilitates localization of the area, potentially minimizing the volume of breast tissue to be removed, should surgery be indicated.
- The placement of breast biopsy marker allows localization of multiple lesions, permits correlation between imaging modalities and facilitates follow-up.
- The use of a biopsy marker aids the oncologist and pathologist by localizing the site when neoadjuvant therapy (NAT) is used.
- The biopsy marker may help confirm that the lesion has been excised.
- The biopsy marker will not trigger alarms at airport security.
- Markers are MRI compatible.
- Marker placement:
    - Facilitates localization of the area, potentially minimizing the volume of tissue to be removed
    - Allows distinction between multiple lesions
    - Permits correlation between imaging modalities and facilitates follow-up
    - Aids the oncologist and pathologist: localizing tumour site when neoadjuvant therapy (NAT) is used
    - Can help confirm that the lesion has been excised
    - Will not trigger alarms at airport security
    - MRI compatible
- Prior to the procedure, the physician performing the breast biopsy and marker placement should obtain informed patient consent and document the scope of the discussion, significant risks and benefits considered, questions asked/answered and the ultimate decision of the patient or appropriate substitute decision maker.

Contraindications

- Allergy/sensitvity to titanium
- Allergy/sensitivity to nickel (Ultracor Twirl)

Guidelines

1. Indications for marker placement:
   a. Any lesion which may be difficult to identify at follow-up or at time of subsequent fine wire localization
   b. Complete or near complete removal of the biopsy target at time of sampling
   c. Modification of the lesion after biopsy to an extent that the lesion is no longer recognizable with imaging (small, solid intra-cystic lesion, calcifications)
   d. Lesion for which the distribution or morphology may create ambiguity in the event that wire localization is needed (ex: multiple lesions, calcifications superimposing other calcifications or asymmetry/architectural distortion biopsied under ultrasound guidance)
   e. Lymph node involvement - if sampled, US visible markers are preferred at this site.
   f. Lesion that may fulfill criteria for neo-adjuvant therapy.
      1) Suspicious mass > 2cm
      2) If axillary node biopsied
      3) Patient under 40 years
      4) Biomarkers already known and HER2+ or <50yo triple negative

      ***** Note: Eligibility for neoadjuvant therapy will be determined by the patient's oncologist. Adaptation to site-specific practice is recommended.**
   g. All lesions biopsied under stereotactic, tomosynthesis or MRI guidance
   h. Any lesion which may be confused with similar adjacent lesion
2. The practice of leaving behind calcifications as a "natural" marker is not recommended as this may result in under-sampling of the lesion.
3. Where there is more than one marker placed in the same breast, different shaped markers should be used at the biopsy sites.
4. Post-biopsy mammographic images in 2 projections (full CC and full MLO or 90) are required when a marker has been placed following a biopsy. The positioning of the marker, in relation to the location of the lesion biopsied is to be included in the report.
5. Report should include vendor designated marker shape +/- brand of marker placed (ie. coil shaped/Hydromark).

Documentation

1. Complete health organization patient consent form.
2. Obtain post-procedure mammogram and document marker shape and location in the radiology report.

Related Documents

CAR Practice Guidelines and Standards for Breast Imaging and Intervention, 2016 p. 32
https://car.ca/wp-content/uploads/Breast-Imaging-and-Intervention-2016.pdf

Definitions

"biopsy marker" refers to a clip or marker made of surgical grade material used to identify the biopsy site after removal of tissue samples.

"Staff" indicates all employees, approved students including but not limited to radiologists, supervisors, managers, technologists, sonographers, echocardiographers, nurses, aides, clerical staff and support staff engaged by LMMI.

References

Canadian Association of Radiologists. CAR Practice Guidelines and Technical Standards for Breast Imaging and Intervention. 2016. Retrieved from: https://car.ca/wp-content/uploads/Breast-Imaging-and-Intervention-2016.pdf (p32)

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