



American Society of Breast Disease

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Contact: Brooke Breslow 917-691-5418 - bbreslow@asbd.org
Chris Brockles 214-368-6836 - cbrockles@asbd.org

Policy Statement on Routine Orientation of Excised Breast Specimens

Advances in minimally invasive image-guided biopsy methods continue to optimize surgical planning. A common circumstance confronting breast surgeons whose patients have excisions performed by other surgeons and without specimen orientation prompted the Consensus Committee of the American Society for Breast Disease to establish an expert working group to develop a statement on orientation of partial breast excisions (lumpectomy and excisional specimens.)

We conclude that:

1. Specimen orientation should be performed in all patients that undergo partial breast excisions for a lesion that is suspicious or known to be malignant.
2. Routine orientation of breast specimens allows for targeted re-excision of close or involved margins with less volume removed, better cosmetics and clearer margins.
3. Specimen orientation is unnecessary when excision is performed for known benign breast disease such as fibroadenomas, lipomas or cysts.
4. Each hospital should establish acceptable technique(s) for specimen orientation for breast specimens.

Background

The expert working group recognizes that an interdisciplinary team including surgeons, pathologists, radiologists, and operating room nurses all work to ensure that breast conservation is an achievable goal for the majority of patients with breast cancer. Minimally invasive image-guided biopsy methods optimize surgical planning. Excellent surgical technique helps achieve the goals of complete excision with good cosmesis.



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Executive Director
Brooke Breslow

Administrative Associate
Chris Brockles
PO Box 140186
Dallas, Texas 75214
V 214-368-6836
F 214-368-5719
E info@asbd.org



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We are constantly changing the techniques of specimen processing, based on treatment needs and outcomes. Not too long ago, it was the norm to submit breast biopsies to the laboratory without inking the margins of resection. With the increasing acceptance of breast conservation, it became a basic need to know the status of the excision margins and therefore pathologists started inking the edges of the specimens. We now have gone one step further. Surgeons are re-excising specific margins to make sure the entire tumor has been removed before recommending radiation therapy.

A frequent problem occurs when patients have excisions performed without specimen orientation. If malignancy is diagnosed with involved or close undesignated margins, re-excision of the entire excisional biopsy cavity is required. This greatly increases the overall volume of breast tissue removed and significantly worsens the aesthetic results. Occasionally, this circumstance even precludes breast conservation (postop hematoma or extensive tunneling).

In order to adequately orient a specimen, we must start with the premise that a breast excision should be obtained in one piece by the surgeon. Piecemeal specimens for the purpose of excision of a lesion are not acceptable in today's environment. The use of specimen x-ray (via faxitron or regular mammography) is the standard for the evaluation of image-identified breast lesions that are removed under the guidance of the radiological techniques.

Margin status is the key factor for local control. Under the best scenario, the surgeon goes into the operating room with a firm diagnosis by the radiologist and the pathologist. The lesion should be removed in its entirety, in one piece, x-rayed if radiologically discovered, and oriented by the surgeon in the OR suite. The radiologist, pathologist, and surgeon (or at least 2 of these) should participate in the evaluation of the specimen intra-operatively to determine if the amount of tissue removed is adequate or a re-excision is needed before the patient leaves the operating room. The pathologist should process the specimen in a format that allows reconstruction of the tissue for evaluation of specific margins among other things (i.e., size, multifocality, etc.). When margins are close, re-excision provides better local control (Eur J Surg Oncol. 23:123-127, 1997; Fowble, B. The Breast J 4:126-131, 1998).

A number of techniques for routine orientation of excisional specimens exist, including sutures, clips or safety pins (see Chart 1). The goal of specimen orientation is to help provide a three-dimensional description of the area(s) of malignancy within a specimen. This enables the pathologist to describe as accurately as possible the margin status. The person in the best position to mark the orientation of the specimen is clearly the surgeon who should place the markers during the operation, preferably before the entire tissue is removed from the patient.

Inking of the specimen is best and most accurate when the surgeon in the operating room performs it. However, the pathologist can perform it, as long as the specimen is oriented in 2 planes plus laterality (i.e., Left, Superior, Lateral) or 3 planes (i.e., Medial, Anterior, Superior).



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When the pathologist receives the specimen (with specimen x-rays for image-guided biopsies), he or she has to make sure the orientation is maintained throughout the process. The orientation scheme and the sectioning technique must be included in the pathology report. The use of diagrams can prove beneficial when attempting to reconstruct specimens after the initial sections have been reviewed. The pathologist must exercise care to assure that ink is not running onto the cut surfaces. This can be accomplished by several means, such as the use of a mordant (i.e., Bouin's solution for a couple of seconds), air drying at room temperature for a few minutes, or active drying (i.e., use of a fan-like instrument).

Inking can be done with four or six colors. If the specimen is sequentially processed, there is no absolute need for six ink colors.

We restate our conclusions, therefore, that:

1. Specimen orientation should be performed in all patients that undergo partial breast excisions for a lesion that is suspicious or known to be malignant.
2. Routine orientation of breast specimens allows for targeted re-excision of close or involved margins with less volume removed, better cosmetics and clearer margins.
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Chart 1. SPECIMEN-ORIENTATION TECHNIQUES

Approaches to Specimen Orientation:

- | | | |
|---|----------------------|---|
| 1 | Suture Technique - | designate as desired |
| 2 | Metallic Clips – | designate as desired |
| 3 | Safety Pins – | designate as desired |
| 4 | Color-Coded Inking – | designate colors as desired |
| 5 | Combo suture/clip - | designate as desired, clips attached to base of suture. |

Suggested patterns for sutures/clips/combo:

- 1) Sutures:
 - a) Superior = Short
 - b) Lateral = Long
 - c) Designate Right or Left side

- 2) Metal clips:
 - a) Medial = One clip
 - b) Anterior = Two clips
 - c) Superior = Three clips or designate Right or left

This technique has the potential for the clips to fall off during handling and it is much harder for the pathologist to find the clips than sutures, even if they stay in place.

- 3) Combination sutures and clips:
 - a) Medial = 2 long sutures and one metal clip at the base of the suture
 - b) Anterior = 2 short sutures and 2 metal clips at the base of the suture
 - c) Superior = 1 long and one short sutures and 3 metal clips at the base of the suture

This technique allows the radiologist to see the orientation using the metal clips; while the pathologist uses the sutures. Whether the specimen is inked by the surgeon or the pathologist, the radiologist needs the clips or radio-opaque sutures.



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SUBCOMMITTEE ON BREAST SPECIMEN ORIENTATION

Sheldon Feldman, MD, *Chair*, Chief, Division of Breast Surgery, Department of Surgery, Louis B. Venet, M.D., Comprehensive Breast Center, Beth Israel Medical Center, New York, New York

Julio Ibarra, MD, Medical Director, MemorialCare Breast Center, Pathology Department of Orange Coast Memorial Medical Center, Associate Clinical Professor, Department of Pathology, University of California, Irvine, California

Ira Bleiweiss, MD, Professor of Pathology, Mount Sinai School of Medicine, New York, Director, Division of Breast Pathology, Mount Sinai Medical Center, New York, New York

Jane Kakkis, MD, Director of Surgery, Breastlink Medical Group, Surgical Director, MemorialCare Breast Center at Orange Coast Memorial Medical Center, California

Krystyna Kiel, MD, Assistant Professor of Radiology, Northwestern University, Feinberg School of Medicine, Chicago, Illinois

Marilyn Leitch, MD, Professor, Division of Surgical Oncology, Department of Surgery, The University of Texas Southwestern Medical Center at Dallas

Kalliopi (Popi) Siziopikou, MD, PhD, Associate Professor of Pathology, Rush University, Chicago, Illinois

The above Committee convened in fall 2004. It presented its draft statement to the ASBD Consensus Committee and then to the full ASBD membership for comment. Following incorporation of comments, the Committee reviewed and resubmitted the statement for final approval by the ASBD's Consensus Committee.

About the American Society of Breast Disease

The American Society of Breast Disease is the only clinically based medical society in the United States to bring together physicians and allied professionals committed to and advocating an interdisciplinary team approach to breast disease management, prevention, early detection, treatment, and research.

Founded in 1976, the Society sponsors education symposia and advocates for improvements in breast health management in the United States.

The ASBD is committed to strict adherence to guidelines of the Accreditation Council for Continuing Medical Education (ACCME) for all ASBD education programming and policy statements. Fair balance and candid exchange are central to ASBD programs and communications.

For more information about the Society, visit us on the web at www.asbd.org.