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UPDATE IN RADIOLOGY

Diagnostic intervention in breast disease☆

A. Vega Bolívar

Sección de diagnóstico por imagen mamaria, Hospital Universitario Marqués de Valdecilla, Santander, Spain

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Core biopsy;
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Abstract Imaging-guided percutaneous biopsy techniques have been developed to diagnose the lesions detected in breast cancer screening programs based on mammography.

Although traditional fine-needle aspiration cytology continues to be indicated in some cases, in many others it has been supplanted by more modern techniques such as core biopsy or vacuum-assisted biopsy guided by ultrasonography, stereotaxy, or magnetic resonance imaging. These highly reliable techniques have minimized the need for surgical biopsy.

Radiologists play a key role in the histological diagnosis of breast cancer in the early stages of disease and in the evaluation of its local and regional extensions through magnetic resonance imaging and sentinel node biopsy.

PALABRAS CLAVE
Biopsia mama;
Estereotaxia;
Galactografía

Intervencionismo diagnóstico en patología de mama

Resumen Con el desarrollo de los programas de detección precoz de cáncer de mama basados en la mamografía se han ido desarrollando de forma paralela técnicas de biopsia percutánea guiadas por la imagen para el diagnóstico de las lesiones detectadas sospechosas de cáncer de mama.

Aunque la técnica tradicional de punción con aguja fina sigue teniendo indicaciones, se ha ido sustituyendo por las mas modernas técnicas de biopsia con aguja gruesa o sistemas de biopsia asistidos por vacío, con guía ecográfica, estereotáxica o por resonancia magnética (RM). Los resultados de esta técnica son de una alta fiabilidad, por lo que se ha reducido al mínimo la biopsia quirúrgica.

El papel del radiólogo es determinante para el diagnóstico histológico del cáncer de mama en sus fases iniciales, la valoración de su extensión local y regional mediante la utilización de la RM y realización de la técnica del ganglio centinela.

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E-mail address: avegab@telefonica.net

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Mammography, ultrasonography, and magnetic resonance imaging (MRI) have proved to be very effective in the early detection, diagnosis, and evaluation of the extension of breast cancer, which have played a decisive role in reducing mortality caused by this disease.[1]

Radiologists specialising in this field have recently assumed new responsabilities, including early detection of breast cancer, accurate diagnosis through percutaneous biopsy techniques, assessment of local extension using MRI, and use of radiotracers for a correct performance of the sentinel node technique.

Until recently, excisional surgical biopsy was the traditional technique for diagnostic confirmation. However, with the widespread implementation of population-based screening programs for early breast cancer detection and the definitive consolidation of ultrasonography and MRI as complementary imaging techniques, new interventional procedures guided by these techniques have been developed with the aim of achieving an accurate histologic diagnosis without the need of surgery.[2]

Preoperative localization of non-palpable lesions

Preoperative localization is the traditional technique and the most commonly used technique. Operative excision of non-palpable lesions requires prior localization of lesions that usually involves the placement of guide wires or marking the site of the biopsy by injecting a stable carbon solution or a radiotracer.[3]

Technique and results

Although the localization technique originally involved the placement of needles into the lesion site, guided by localization coordinates provided by mammography, overtime the use of needles has been replaced by wires as they allow for better anchorage into the breast.

Wires (hookwires)

Wires are radiopaque and their tips have been designed to avoid displacement once placed into the breast. Mammographic or ultrasonographic guidance can be used for placement, depending on which technique provides the best visualisation of the lesion.

Mammographic guidance is commonly performed with fenestrated compression plates with a radiopaque alphanumeric grid (Fig. 1). Some radiologists prefer to use the stereotactic device, but we need to keep in mind that unwanted displacement may occur due to the ''accordion effect'' that appears when the breast is decompressed.

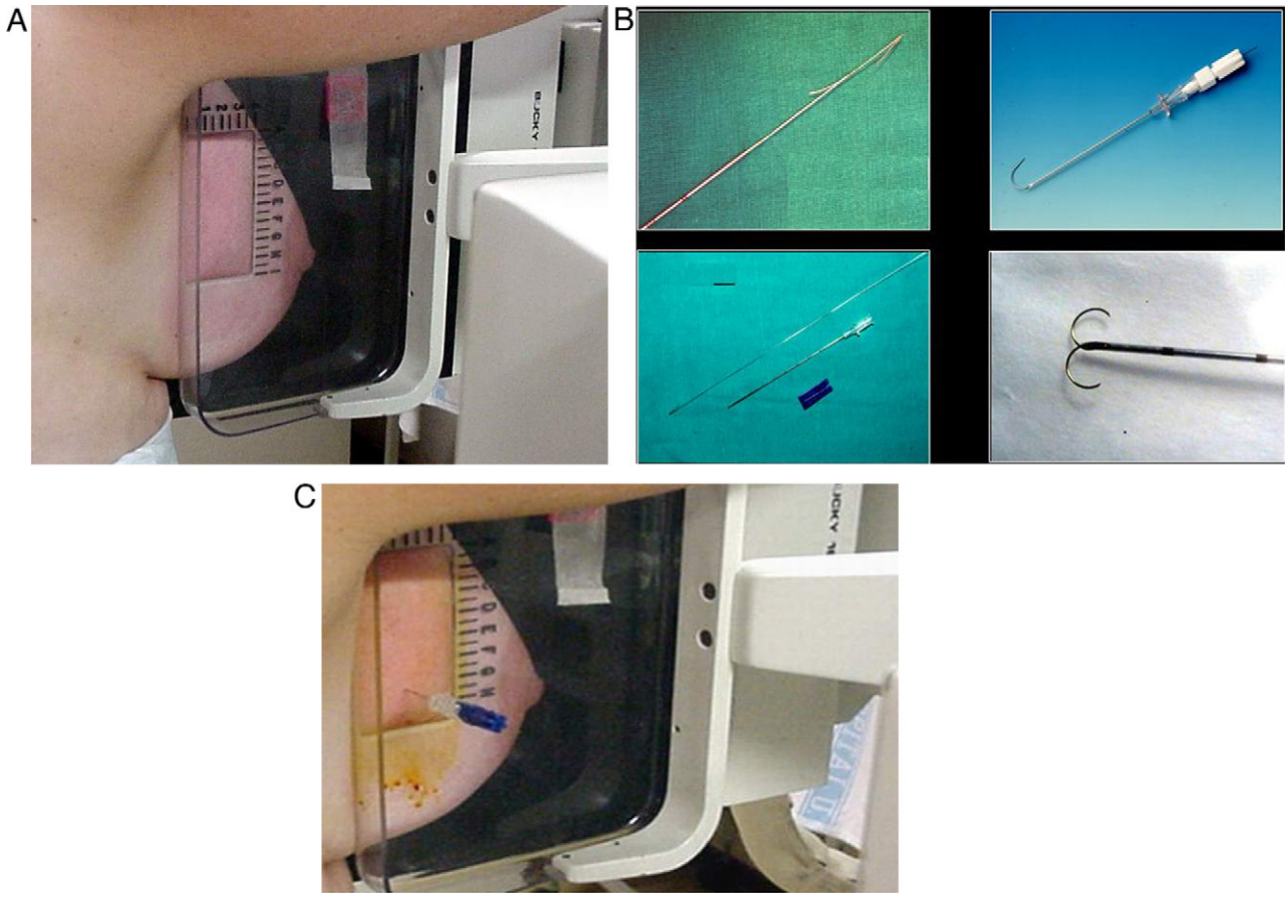

Figure 1 Preoperative localization for biopsy of a non-palpable lesion. (A) Fenestrated compression plate with radiopaque alphanumeric grid. (B) Types of needles with localizing guide wires (''hook wires''). (C) Harpoon insertion with fenestrated compression plate.