The role of ultrasound (US) and US-guided core needle biopsy of axillary lymph nodes in preoperative staging of breast cancer

Poster No.: B-307
Congress: ECR 2010
Type: Scientific Paper
Topic: Breast
Authors: M. Melado, R. Bermejo, A. Burguete, J. Zabalza, S. Solchaga, A. M. Osa; Pamplona/ES
Keywords: Breast, Ultrasound, Biopsy
DOI: 10.1594/ecr2010/B-307

Any information contained in this pdf file is automatically generated from digital material submitted to EPOS by third parties in the form of scientific presentations. References to any names, marks, products, or services of third parties or hypertext links to third-party sites or information are provided solely as a convenience to you and do not in any way constitute or imply ECR’s endorsement, sponsorship or recommendation of the third party, information, product or service. ECR is not responsible for the content of these pages and does not make any representations regarding the content or accuracy of material in this file.

As per copyright regulations, any unauthorised use of the material or parts thereof as well as commercial reproduction or multiple distribution by any traditional or electronically based reproduction/publication method is strictly prohibited.

You agree to defend, indemnify, and hold ECR harmless from and against any and all claims, damages, costs, and expenses, including attorneys' fees, arising from or related to your use of these pages.

Please note: Links to movies, ppt slideshows and any other multimedia files are not available in the pdf version of presentations.

www.myESR.org
Purpose

Introduction

• Sentinel lymph node biopsy (SLNB) has replaced axillary dissection for lymph node staging in patients with breast cancer. However, according to some series, from 15% to 40% of SLNB have axillary metastases.

• Determination of nodal invasion is important because if nodal affection is proved preoperatively (FNA or core needle biopsy), Sentinel Lymph Node Biopsy can be avoided and the surgeon will perform an axillary programmed lymphadenectomy.

• Fine Needle Aspiration (FNA) or Core Needle Biopsy (CNB) can be used to provide histopathologic analysis to the axillary lymph nodes before SLNB. Fine Needle Aspiration is more operator dependent than CNB and it needs cooperation of experienced cytologists. Ultrasound Core Needle Biopsy is a standard procedure in breast diagnosis but is not widely used for axillary lymph node staging. In our institution we have better results using axillary core needle biopsy than using fine needle aspiration.

• Axillary US CNB is an easy procedure because most sentinel lymph nodes are located at level one in the inferior axilla and it has a higher reproducibility.

Purpose

To evaluate the role of Ultrasound and Ultrasound Guided Core Needle Biopsy of axillary lymph nodes in preoperative staging of breast cancer.

Methods and Materials
A retrospective analysis of all axillary preoperative ultrasound performed in patients who had indication of Sentinel Lymph Node Biopsy between August 2008 and December 2009. A total of 190 patients

**Ultrasound Findings**

- **Normal**: if axillary nodes had a thin cortex and a relatively large fatty hilium
- **Asymmetric Cortical Thickening**: > 2.5 mm and < 5 mm
- **Suspicious Axillary Lymph Nodes**: Cortical thickening > 5mm or without fatty hilium

**Core Needle Biopsy**

We performed 56 Core Needles Biopsies in patients with Asymmetric Cortical Thickening (35 biopsies) and with Suspicious Axillary Lymph Nodes (21 biopsies)

**Biopsy Device**: automated biopsy gun 14-gauge (needle notch length 25 mm and 1-3 passes performed per biopsy)

**Technique of axillary ultrasound guided procedure**: The patient is placed in supine position with her arm raised and with the axilla flattened using a pillow. The approaching point is selected by using the shortest skin-lesion path, usually from inferolateral to superomedial approach at the tail of the axila. Sterile technique. Local anaesthesia and small skin incision. The biopsy needle advance to the target is aligned with the tip of the needle we can perform the fire. After the procedure we perform local compresion.
Results

Axillary preoperative ultrasound were performed in 190 patients who had indication of Sentinel Lymph Node Biopsy

- A total of **118 patients had the axillary ultrasound normal**. After SLNB 99 were diagnosed accurately (true negative), and the other 19 had metastases (false negative); 12/19 micrometastases (<3mm) and 7/19 macrometastases
- Of the **43 asimetric cortical thickening**, 29 had metastases proven by axillary lymphadenectomy or ultrasound CNB (true positive). 14/43 had no metastases at surgery (SLNB) (false positive)
- All of the **29 suspicious axillary lymph nodes** were proved by ultrasound CNB or axilar lymphadenectomy (true positive)

Correlation Axillary Ultrasound - Surgery (SLNB or AL) on page

- Sensibility 75%
- Specificity 88%
- PPV 81%
- NPV 84%

Correlation Axillary Core Needle Biopsy- Surgery (SLNB or AL): on page

- **56 Core Needle Biopsy**: 41/56 were positive and 15/56 were negative. Of the 15 negative Core Needle Biopsies, 11 had no metastases (true negative) and 4 had metastases (false negative)
- Sensibility 93,2%
- Specificity 100%
- PPV 100 %
- NPV 73,3%
Conclusion

• **Axillary Ultrasound** has a high Sensibility and Positive Predictive Value in the axillary preoperative study, specially if findings are normal or if there are suspicious lymph nodes

• **Ultrasound Core Needle Biopsy** is an easy procedure and less operator dependent than FNA. It can be performed the same day and before the Diagnostic Breast Core Needle Biopsy

• **Asymmetric Cortical Thickening** is related in a high percentage of cases with axillary metastases

References


Personal Information

Maite Mellado.
Servicio de Radiología. Hospital de Navarra.
C/Irunlarrea s/n
Pamplona. Navarra
Spain

mmelladr@cfnavarra.es