

Azienda USL di Bologna  
Azienda Ospedaliero-Universitaria di Bologna

collaborazione con:  
Assessorato Politiche per la salute  
Regione Emilia-Romagna



*Seminario di studio*

Analisi dei dati sulla qualità del  
trattamento dei tumori della  
mammella screen-detected nella  
Regione Emilia-Romagna:  
problematiche anatomo-patologiche,  
chirurgiche e radioterapiche

*23 settembre 2009*

Auditorium Via Aldo Moro n. 18  
Bologna



# Diagnosi istologica preoperatoria e conseguenti strategie terapeutiche.

**M.G.Cattani**

**U.O. Anatomia e Istologia Patologica**

**Ospedale Bellaria**

**Azienda USL Bologna**

# Scopo della diagnosi preoperatoria nelle lesioni mammarie

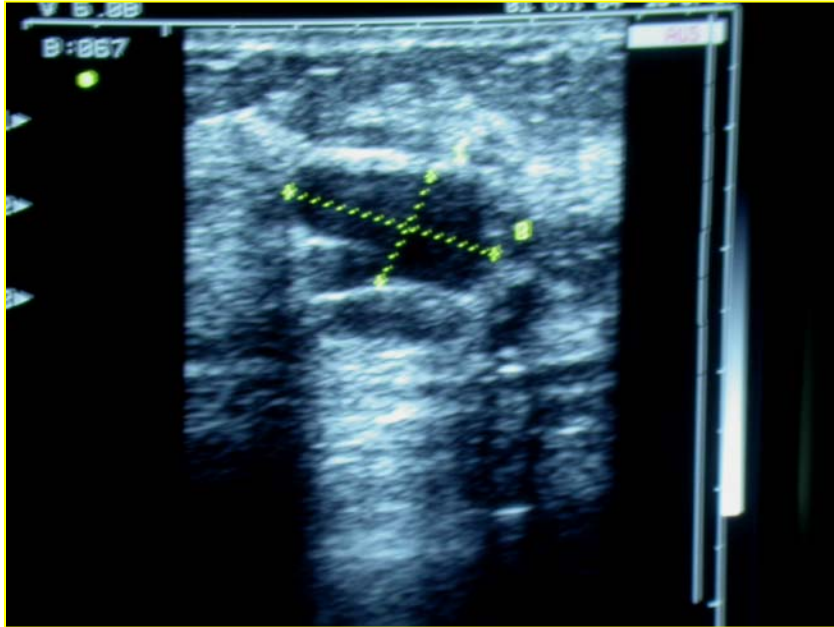
***“The role of non-operative diagnosis is to attempt to provide a definitive diagnosis that allows rapid referral for treatment, ideally in one operative procedure.”***

**NHSBSP, June 2001**



**Attualmente le diverse tecniche di diagnosi preoperatoria consentono di programmare interventi terapeutici specifici e mirati per ogni singola paziente**

# Caratteristiche della lesione



**LESIONE PALPABILE O  
ECOGRAFICAMENTE  
INDIVIDUABILE**



**LESIONE NON  
PALPABILE  
(MIC, OPACITA',  
DISTORSIONE)**

# Secondo le caratteristiche della lesione: diversi strumenti per tipizzarla

- AGOASPIRATO (FNAC) sotto guida ecografica

- AGOBIOPSIA (tru-cut: biopsy gun system)

- AGOBIOPSIA VACUUM-ASSISTED (mammotome)



# - NHSBSP, 2001

## - European guidelines for quality assurance in breast cancer screening and diagnosis, 2006

Reporting forms

BREAST SCREENING CYTOPATHOLOGY

Surname \_\_\_\_\_ Forenames \_\_\_\_\_ Date of birth \_\_\_\_\_

Screening no. \_\_\_\_\_ Hospital no. \_\_\_\_\_ Centre \_\_\_\_\_ Report no. \_\_\_\_\_

Side  Right  Left

Specimen type  FNA (solid lesion)  FNA (cyst)  Nipple discharge  Nipple or skin scrapings

Localisation technique  Palpation  X-ray guided  Ultrasound guided  Stereotaxis

Opinion  1 Unsatisfactory  2 Benign  3 Atypia probably benign  4 Suspicious of malignancy  5 Malignant

Comment \_\_\_\_\_

Case for review ?

PATHOLOGIST \_\_\_\_\_
NAME OF ASPIRATOR \_\_\_\_\_
DATE \_\_\_\_\_

Figure 6 Example of a cytopathology reporting form.

Non-operative diagnostic procedures and reporting

BREAST SCREENING WIDE BORE NEEDLE BIOPSY FORM

Surname \_\_\_\_\_ Forenames \_\_\_\_\_ Date of birth \_\_\_\_\_

NHS no. \_\_\_\_\_ Screening no. \_\_\_\_\_ Hospital no. \_\_\_\_\_

Centre \_\_\_\_\_ Report no. \_\_\_\_\_

Side  Right  Left Number of cores \_\_\_\_\_

Calcification present on specimen x-ray?  Yes  No  Radiograph not seen

Histological calcification  Absent  Benign  Malignant  Both

Localisation technique  Palpation  X-ray guided  Ultrasound guided  Stereotactic

Opinion  B1. Unsatisfactory/Normal tissue only  
 B2. Benign  
 B3. Lesion of uncertain malignant potential  
 B4. Suspicion of malignancy  
 B5. Malignant

a.  In-situ  
b.  Invasive  
c.  Not assessable

PATHOLOGIST \_\_\_\_\_ Operator taking biopsy \_\_\_\_\_

Date \_\_\_\_\_

Comment \_\_\_\_\_

\_\_\_\_\_

# Diagnosi citologica e istologica preoperatoria

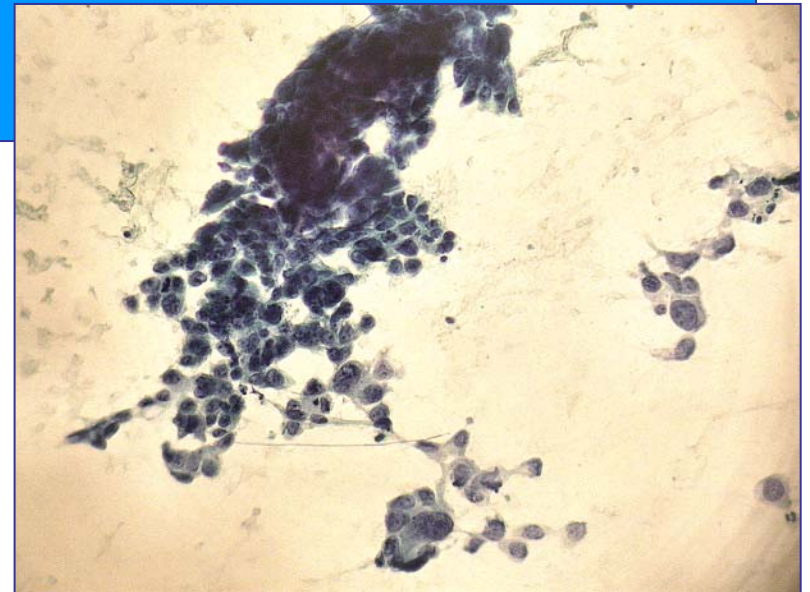
- 1) Quali diagnosi richiedono sempre l'intervento chirurgico? Quanti C3 e B3 che vanno all'intervento sono lesioni maligne?
- 2) Quale intervento e' il piu' appropriato ?  
In particolare per i CDIS ad alto grado e' indicato il linfonodo sentinella ?

# Diagnosi citologica e istologica preoperatoria

- 1) Quali diagnosi richiedono sempre l'intervento chirurgico? Quanti C3 e B3 che vanno all'intervento sono lesioni maligne?



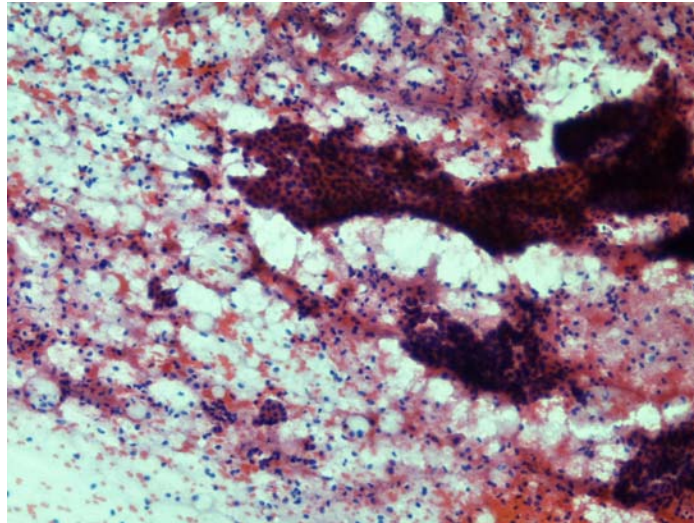
- C1 inadeguato
- C2 benigno
- C3 lesione probabilmente benigna, con atipia
- C4 sospetto per malignità
- C5 maligno



## C3

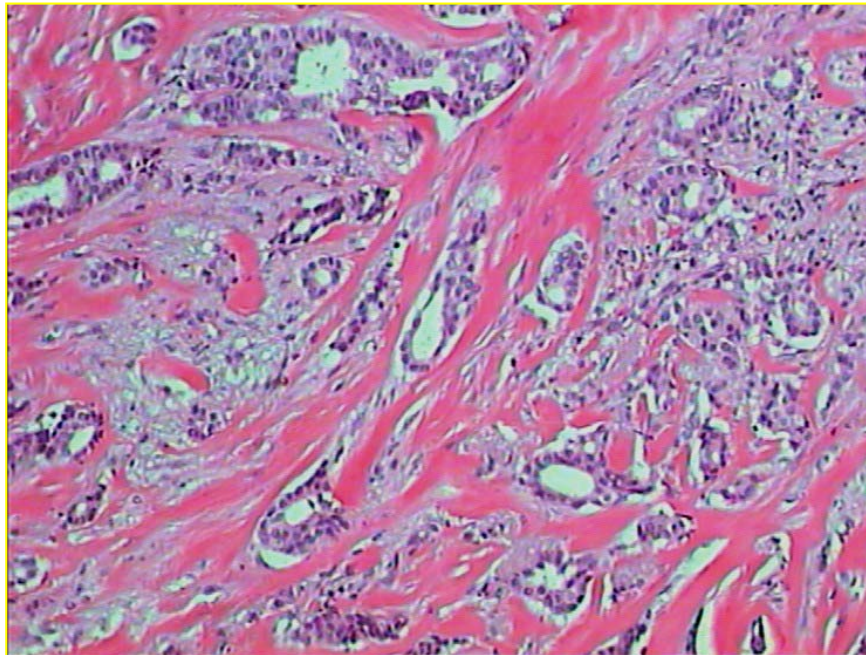
(atipia, piu' probabilmente benigno)

- **Lesioni benigne piu' frequentemente classificate come C3:**  
fibroadenoma cellulato e papilloma



- **Lesioni maligne piu' frequentemente diagnosticate come C3:**

CDIS basso grado, carcinoma tubulare, carcinoma cribriforme, carcinoma lobulare



# C3: quante sono?

**FNAC eco guidata: lesione 1 cm**

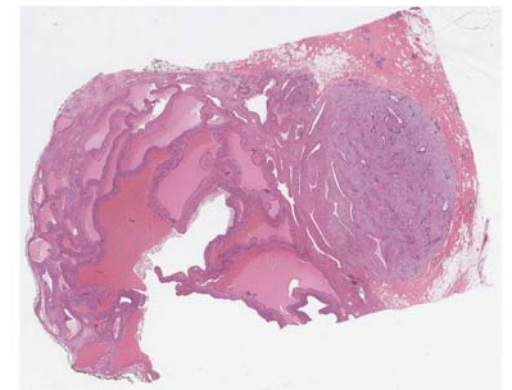
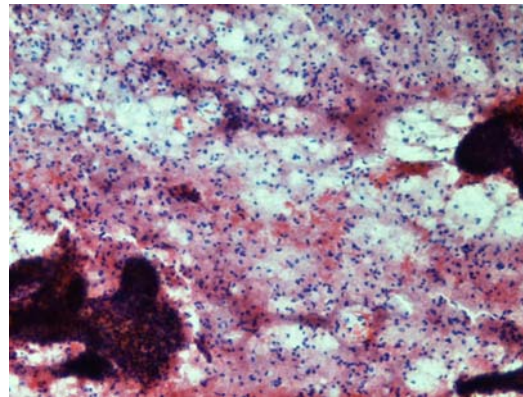
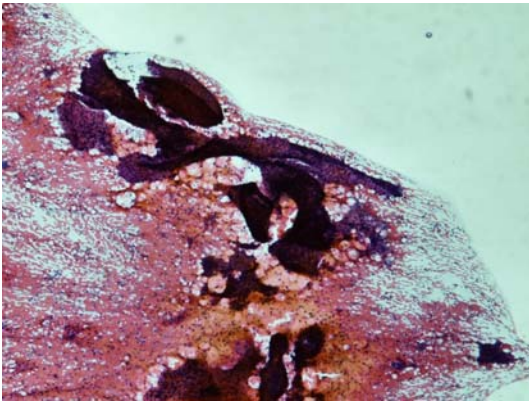
C1	C2	C3	C4	C5
15 %	45 %	7%	9%	24%

- Accurata selezione casi
- Personale dedicato
- Assistenza all' agoaspirazione

# C 3 (atipia, probabilmente benigno)

***Valore Predittivo Positivo: 30 %***

VPP= numero dei carcinomi identificati come C3 (numero di C3 meno i C3 benigni) espresso come percentuale del numero totale delle diagnosi C3



# C3: Indicazione all'approfondimento

Ann Surg Oncol (2009) 16:281–284  
DOI 10.1245/s10434-008-0246-y

Annals of  
**SURGICAL ONCOLOGY**  
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – BREAST ONCOLOGY

## Indeterminate Breast Fine-Needle Aspiration: Repeat Aspiration or Core Needle Biopsy?

**Bauke Kooistra, MSc<sup>1</sup>, Carla Wauters, MD<sup>2</sup>, and Luc Strobbe, MD, PhD<sup>1</sup>**

<sup>1</sup>Department of Surgery, Canisius Wilhelmina Ziekenhuis, Weg door Jonkerbosch 100, Nijmegen, SZ 6532, The Netherlands; <sup>2</sup>Department of Pathology, Canisius Wilhelmina Ziekenhuis, Nijmegen, The Netherlands

# C3: Indicazione all'agobiopsia

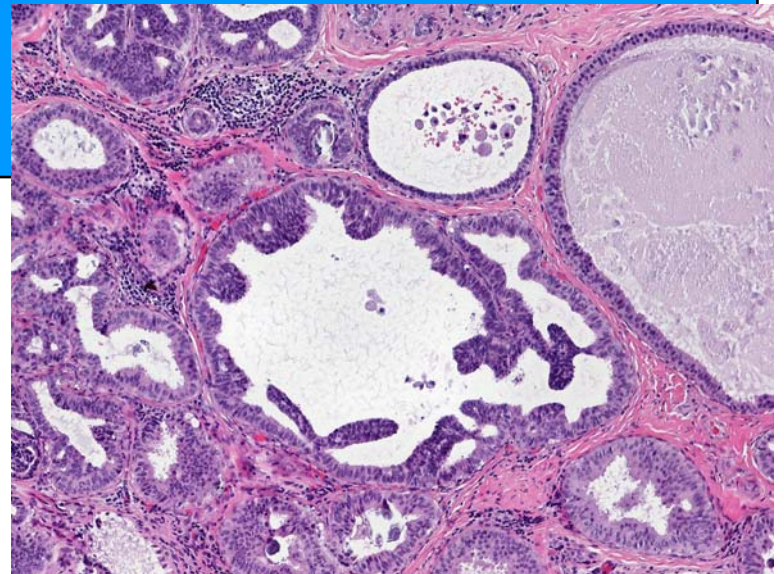
Abbate F, Bacigalupo I, Latronico A, Trentin C, Penco S, Menna S, Viale G, Cassano E, Bellomi M.

**Ultrasound-guided vacuum assisted breast biopsy in the assessment of C3 breast lesions by ultrasound – guided fine needle aspiration cytology: results and costs in comparison with surgery.**

Breast 2009 18 (2): 73-7.

Riduzione dei costi del 45 % utilizzando VABB  
anziche' biopsia chirurgica

- B1 Inadeguato/Tessuto mammario normale
- B2 Lesione benigna
- B3 Incerto potenziale di malignita'
- B4 Sospetto di malignita'
- B5 Maligno





**Jacobs, Timothy W. M.D.; Connolly, James L. M.D.; Schnitt, Stuart J. M.D.**

# **Nonmalignant Lesions in Breast Core Needle Biopsies: To Excise or Not to Excise?**

**The American Journal of Surgical Pathology: Volume 26(9)  
September 2002, 1095-1110**

Quanti B3 che vanno all'intervento  
sono lesioni maligne?

*Histopathology* 2003, 42, 331–336

## **Excision biopsy findings of patients with breast needle core biopsies reported as suspicious of malignancy (B4) or lesion of uncertain malignant potential (B3)**

A H S Lee, H E Denley, S E Pinder, I O Ellis, C W Elston, P Vujovic, R D Macmillan & A J Evans for the Nottingham Breast Team

*Departments of Histopathology, Surgery and Radiology, City Hospital, Nottingham, UK*

*Date of submission: 13 June 2002*

***“ THE B3 GROUP IS MORE HETEROGENEOUS AND HAS A LOWER RATE OF MALIGNANCY (25 %).. ”***

# **B3**

**(lesion of uncertain malignant potential)**

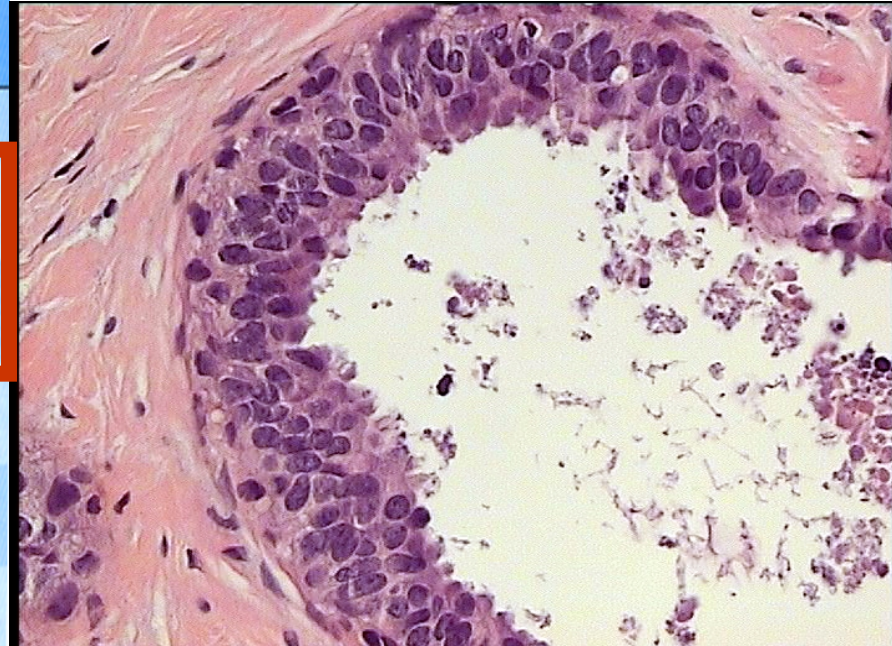
- **atypical ductal hyperplasia (adh)**
- **lobular neoplasia (alh and clis)**
- **papillary lesion**
- **radial scar/complex sclerosing lesion**
- **fibroepithelial lesion**
- **mucocele-like lesion**

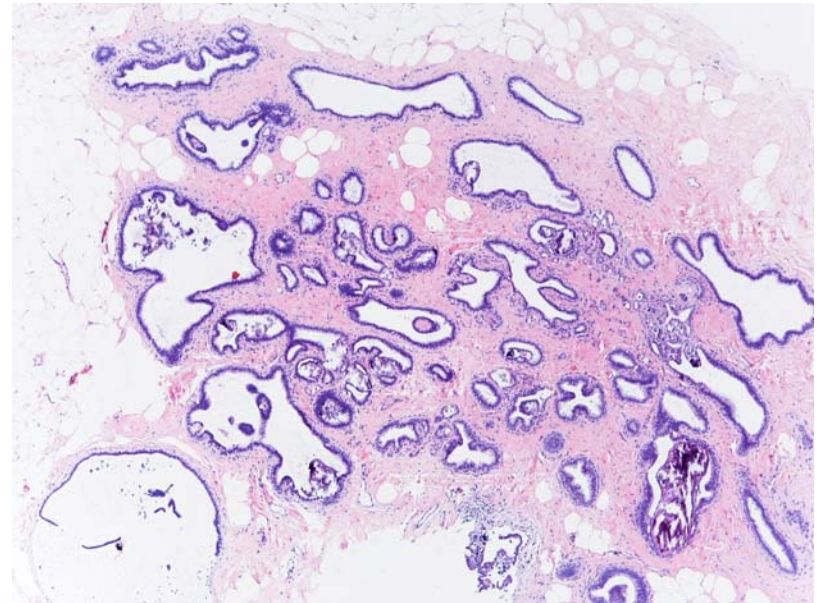
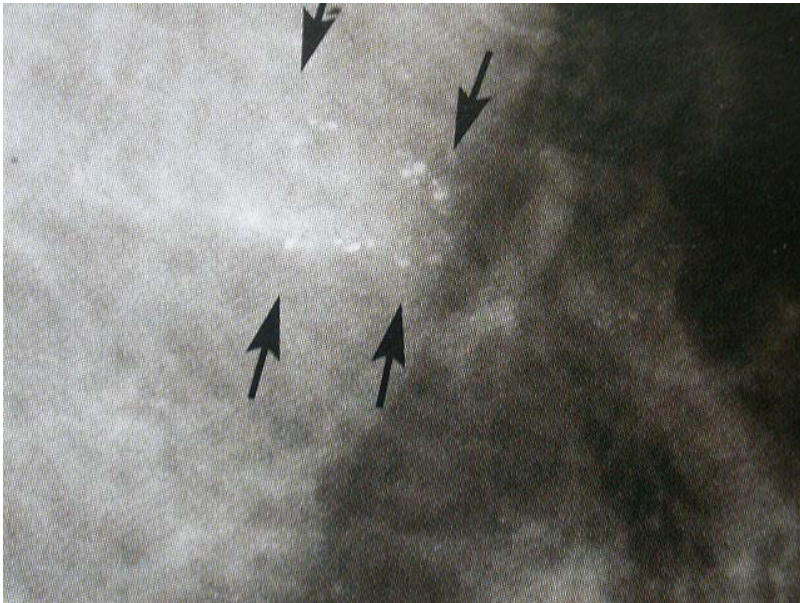
# Iperplasia duttale atipica

**Table 1.11**  
Classification of intraductal proliferative lesions.

**WHO 2003**

<b>Traditional terminology</b>	<b>Ductal intraepithelial neoplasia (DIN) terminology</b>
Usual ductal hyperplasia (UDH)	Usual ductal hyperplasia (UDH)
Flat epithelial atypia	Ductal intraepithelial neoplasia, grade 1A (DIN 1A)
Atypical ductal hyperplasia (ADH)	Ductal intraepithelial neoplasia, grade 1B (DIN 1B)
Ductal carcinoma in situ, low grade (DCIS grade 1)	Ductal intraepithelial neoplasia, grade 1C (DIN 1C)
Ductal carcinoma in situ, intermediate grade (DCIS grade 2)	Ductal intraepithelial neoplasia, grade 2 (DIN 2)
Ductal carcinoma in situ, high grade (DCIS grade 3)	Ductal intraepithelial neoplasia, grade 3 (DIN 3)





L' ATIPIA EPITELIALE PIATTA E' SPESSO ASSOCIATA AD UNA SPECIFICA PRESENTAZIONE MAMMOGRAFICA

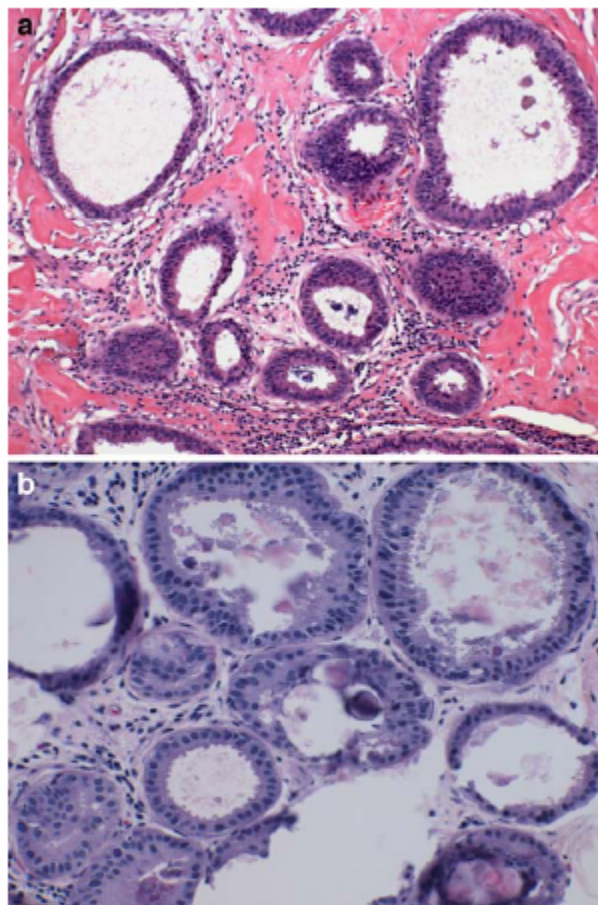
## Flat DIN 1 (flat epithelial atypia) on core needle biopsy: 63 cases identified retrospectively among 1,751 core biopsies performed over an 8-year period (1992–1999)

Maritza Martel · Patricia Barron-Rodriguez ·  
Idris Tolgay Ocal · Jorge Dotto · Fattaneh A. Tavassoli

Received: 15 May 2007 / Revised: 26 July 2007 / Accepted: 3 August 2007 / Published online: 5 September 2007  
© Springer-Verlag 2007

**Abstract** Uniform management of flat DIN 1 (flat epithelial atypia) on core needle biopsy (CNB) concerning surgical excision or clinical follow-up are lacking. In a retrospective review of 1,751 CNB over an 8-year period, we found 63 cases with flat DIN 1 as the most advanced lesion; follow-up was available in 55 cases. Of the 63 patients, 24 had a subsequent biopsy for 15 days to 10 years after the initial CNB, an infiltrating carcinoma was found in nine (14.3%) patients, seven (11.1%) in the ipsilateral, and two (3.2%) in the contralateral breast. Five underwent an excisional biopsy of the ipsilateral breast within less than 3 months of the initial CNB; none had either an invasive or intraepithelial carcinoma. Based on our findings, we consider flat DIN 1 a marker of slightly increased risk for subsequent development of invasive breast carcinoma. When flat DIN 1 is found on CNB as the most advanced lesion after mammographic correlation, an excisional biopsy is not mandatory; however, close follow-up is advised with repeat mammograms for early detection of any clinically occult carcinoma in the vicinity of flat DIN 1 that may have been missed by the CNB.

or three to five layers of mildly atypical cells. The ducts involved are variably distended and often contain intraluminal microcalcifications or secretory material [33]. Azzopardi, using the term “Clinging carcinoma, monomorphous type,” provided a thorough description of this lesion in 1979 [1]; however, the lesion remained widely unrecognized and/or ignored, until recent years when its neoplastic nature was confirmed at the molecular level [18]. Because of the often subtle cytologic atypia and absence of architectural alterations, it can be easily mistaken for normal breast tissue and has been misinterpreted as a component of fibrocystic changes, as blunt duct adenosis and normal breast for many years. Over the past 5–6 years, there has been a surge of interest in flat epithelial atypia with the increasing frequency of its detection in breast biopsies performed for mammographically detected microcalcifications. A number of reports have referred to this lesion by a wide variety of terms including columnar alteration with prominent apical snouts and secretion [10], atypical cystic lobules [14, 23], columnar cell change with atypia, and columnar cell hyperplasia with



**Fig. 1** **a** Case 32, flat DIN 1 on CNB, variably distended acini lined by one to three layers of monotonous cells. No evidence of breast carcinoma in 8 years of available follow-up. **b** Case 42, flat DIN 1 with microcalcifications, no evidence of breast carcinoma in 3 years of available follow-up

The use of standardized criteria for the diagnosis and common terminology is essential in establishing the significance and determining guidelines for management of this lesion, particularly on CNB. As we continue to study the biology of this lesion and more data emerge in the literature, we propose performing three additional levels, beyond the usual three initial levels, when flat DIN 1 is found as the most advanced lesion on CNB. If additional levels fail to reveal a more advanced lesion, an excisional

890

biopsy is not mandatory if there are no mammographic features of concern. Because clinically occult, more advanced DIN and low-grade carcinomas may be missed, close follow-up is advised with repeat mammogram every 6 months for 2–3 years for early detection of any such invasive carcinomas in the vicinity of flat DIN 1. Finally, after assessment of additional levels and the immunoprofile, if there remains doubts about the presence of flat DIN 1, it is better to underdiagnose this lesion or refrain from diagnosing.



## Conclusion

Flat DIN 1 found on CNB is often in the setting of a biopsy performed for the evaluation of microcalcifications identified on screening mammogram. Cognizant of the retrospective nature of the study, based on our findings, flat DIN 1 is a marker of slightly increased risk for subsequent development of invasive breast carcinoma. However, follow-up studies of flat DIN 1 as the most advanced lesion are needed to better understand the significance of this lesion and establishing uniform guidelines in its management.

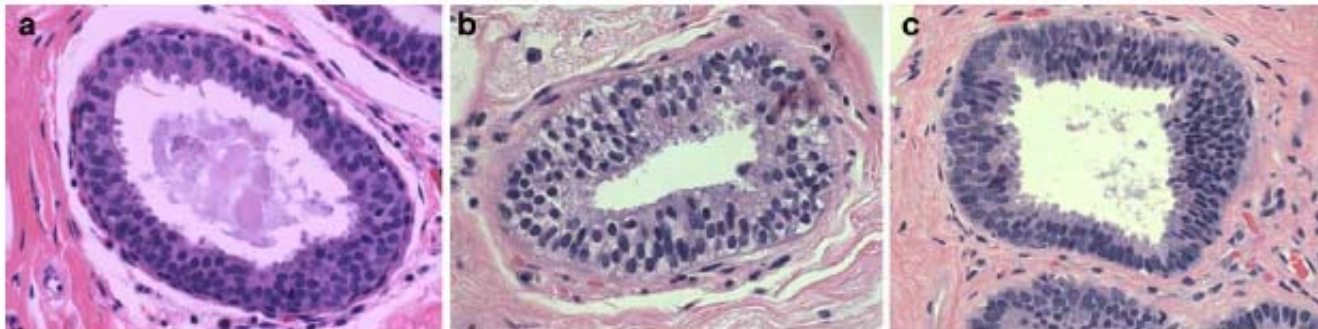


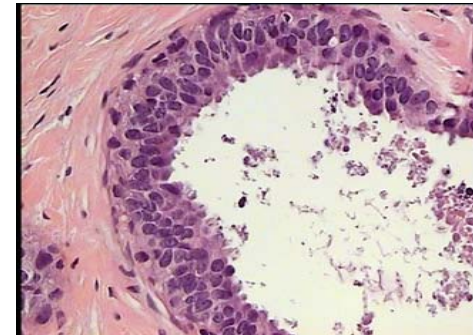
Fig. 5 a, b, c Three examples of multilayered Flat DIN 1, characterized by replacement of the native epithelial cell layer by two to four cell layers of monotonous mildly atypical cells

# Columnar Cell Lesions of the Breast: The Missing Link in Breast Cancer Progression? A Morphological and Molecular Analysis

Peter T. Simpson, PhD,\* Theo Gale, BSc,\* Jorge S. Reis-Filho, MD,\*  
Chris Jones, PhD,† Suzanne Parry, MSc,\* John P. Sloane, FRCPath,‡  
Andrew Hanby, FRCPath,§ Sarah E. Pinder, FRCPath,k Andrew H. S.  
Lee, MRCPath,k Steve Humphreys, FRCPath,¶ Ian O. Ellis,  
FRCPath,k and Sunil R. Lakhani, FRCPath\*#\*\*

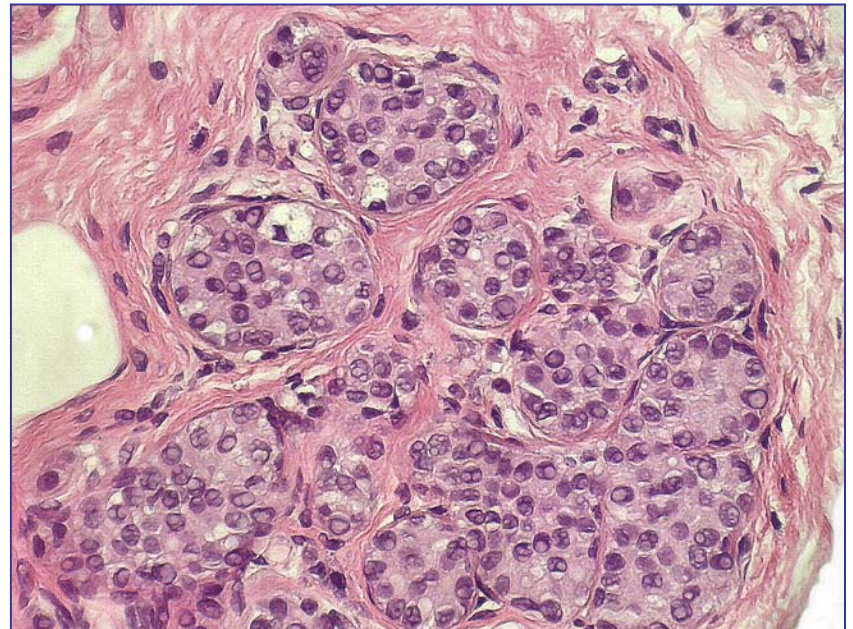
**Am J Surg Pathol Volume 29, Number 6, June 2005**

**CCLs were ER and PgR positive, CK 5/6 and CK 14 negative, exhibit low numbers of genetic alteration and recurrent 16Q loss, features that are similar to those of low grade in situ and invasive carcinoma.**



# NEOPLASIA LOBULARE (ALH AND CLIS)

- Non ha una specifica presentazione mammografica



# DG PREOPERATORIA DI NEOPLASIA LOBULARE: VA ESEGUITA BIOPSIA ESCISSIONALE ?

G.L.Bratthauer, F.A.Tavassoli.

Lobular intraepithelial neoplasia: previously unexplored aspects assessed in 775 cases and their clinical implications.

Virchows Arch (2002) 440:134-138

**38/92 (41%) casi di LIN 3 hanno ca  
invasivo o DIN 3 all'escissione**

# Follow-up Surgical Excision Is Indicated When Breast Core Needle Biopsies Show Atypical Lobular Hyperplasia or Lobular Carcinoma In Situ

## A Correlative Study of 33 Patients With Review of the Literature

Tarik M. Elsheikh, MD\* and Jan F. Silverman, MD†

**Abstract:** Atypical lobular hyperplasia (ALH) and lobular carcinoma in situ (LCIS) diagnosed in core needle biopsy (CNB) are generally regarded as risk indicators for developing invasive ductal or lobular carcinoma in either breast. Currently, there are no well-established guidelines for management of these patients. The most common management options are careful observation and endocrine chemoprophylaxis for high-risk patients. Previous studies had contradicting recommendations regarding follow-up surgical excision (FSE) of CNB yielding ALH or LCIS. These studies, unfortunately, have been limited by their retrospective nature, small number of patients examined, and association with other high-risk lesions. Only CNB diagnosed as pure LCIS or ALH (not associated with other high-risk lesions such as ADH, radial scar, or papilloma) were included in the study. We reviewed 33 CNB (20 ALH and 13 LCIS) with subsequent FSE from 33 patients (age range, 30–83 years; mean, 58 years). Eighteen of these patients were prospectively analyzed, where FSE was performed in an unselected fashion. All CNBs were obtained by mammotome (11-gauge, 30 cases; and 14-gauge, 3 cases). Mammography identified calcifications in 29 cases (88%) and a mass in 4 cases (12%). FSE revealed infiltrating ductal and/or lobular carcinoma in 4 of 13 LCIS (31%). FSE of 20 ALH revealed cancer in 5 cases (25%), including 4 ductal carcinoma in situ (DCIS) and 1 invasive lobular carcinoma. Several of these nine cancers were associated with calcifications, and two presented as masses. Sampling error and underestimation of cancer (DCIS or invasive carcinoma) was associated with CNB diagnosis of LCIS or ALH in 27% of all cases. Underestimation of cancer was seen in 28% of prospectively examined patients, including 20% of ALH and 38% of LCIS. CNB associated with mass lesions or that showed histologic features of pleomorphic LCIS or extensive classic LCIS had a higher rate of cancer underestimation. Despite removal of all abnormal mammographic calcifications by CNB in 6 patients, one cancer was detected on FSE. To the best of our knowledge, this is the largest study reported to date, and the only one to include prospectively examined patients with no pre-selection bias. Our data strongly

suggests that subsequent FSE is warranted in all patients with CNB diagnoses of LCIS or ALH, to exclude the presence of cancer.

**Key Words:** needle core biopsy, lobular neoplasia, atypical lobular hyperplasia, lobular carcinoma in situ  
(*Am J Surg Pathol* 2005;29:534–543)

Lobular neoplasia encompassing atypical lobular hyperplasia (ALH) and lobular carcinoma in situ (LCIS) diagnosed by core needle biopsy (CNB) is generally regarded as a risk factor or a marker for developing invasive ductal or lobular carcinoma in either breast. Usually, patients with pure LCIS are not considered to need further treatment. However, more recent literature has challenged this view, indicating that lobular neoplasia may play a more direct role as a precursor of invasive carcinoma. The uncertainties concerning the biologic significance of a CNB diagnosis of LCIS or ALH have created considerable confusion and controversy regarding their management. Currently, there are no well-established guidelines for the management of these patients. The most common option is careful observation, and more recently, endocrine chemoprophylaxis for high-risk patients. We reviewed 33 CNBs from 33 patients with the diagnosis of pure LCIS or ALH. Follow-up wider surgical excision was available on all cases. Clinical and histopathologic findings are presented. Review of the literature and recent developments in the understanding of this controversial issue, as well as recommendations for management, are discussed.

### MATERIALS AND METHODS

Breast CNBs with the diagnosis of pure LCIS or ALH (not associated with other high-risk lesions such as ADH, radial scar, papillary lesion, etc) were retrieved from the files of Pathologists Associated at Ball Memorial Hospital (28 cases) and Allegheny General Hospital (5 cases) between the years 1997 and 2003. The study included 33 CNB of nonpalpable mammographic abnormalities from 33 women with follow-up wider surgical excision (FSE). The patients ranged in age from 30 to 83 years (mean, 58 years). Six cases (5 ALH + 1 LCIS), not included in the study, had no FSE. Three of these patients had CNB diagnoses of ALH and showed no mammographic interval changes on clinical follow-up, ranging from 2 to 4

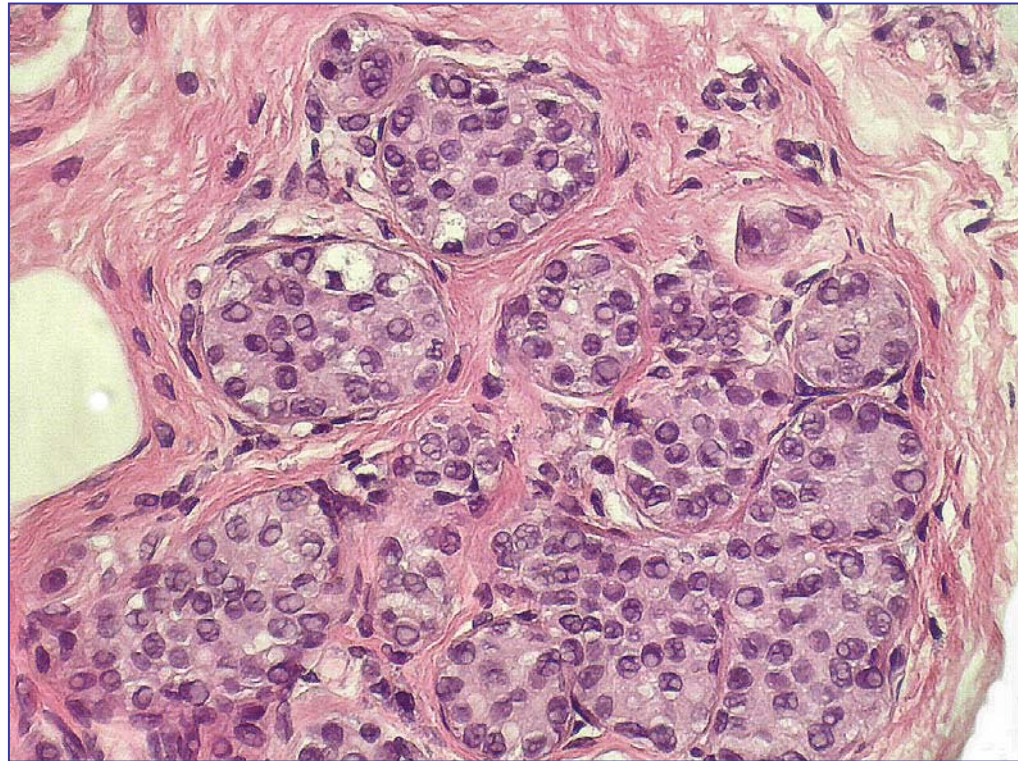
From \*Pathologists Associated/Ball Memorial Hospital Muncie, IN; and †Department of Pathology, Allegheny General Hospital, Pittsburgh, PA.  
Correspondence: Tarik M. Elsheikh, MD, Pathologists Associated/Ball Memorial Hospital, 2401 University Avenue, Muncie, IN 47303 (e-mail: elsheikh@pslah.com).

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# NEOPLASIA LOBULARE (ALH AND CLIS)

**-38 casi NL 11 lesioni  
maligne all'intervento  
(30%):**

- 2 CDIS**
- 6 CLIS**
- 1 CDI**
- 2 CLI**



# RADIAL SCAR / LESIONI SCLEROSANTI COMPLESSE

**RX: 21 distorsioni**

**12 opacita'**

**3 MIC**

**28/38 INTERVENTO:**

**12 non residuo**

**11 Adenosi florida e  
sclerosante**

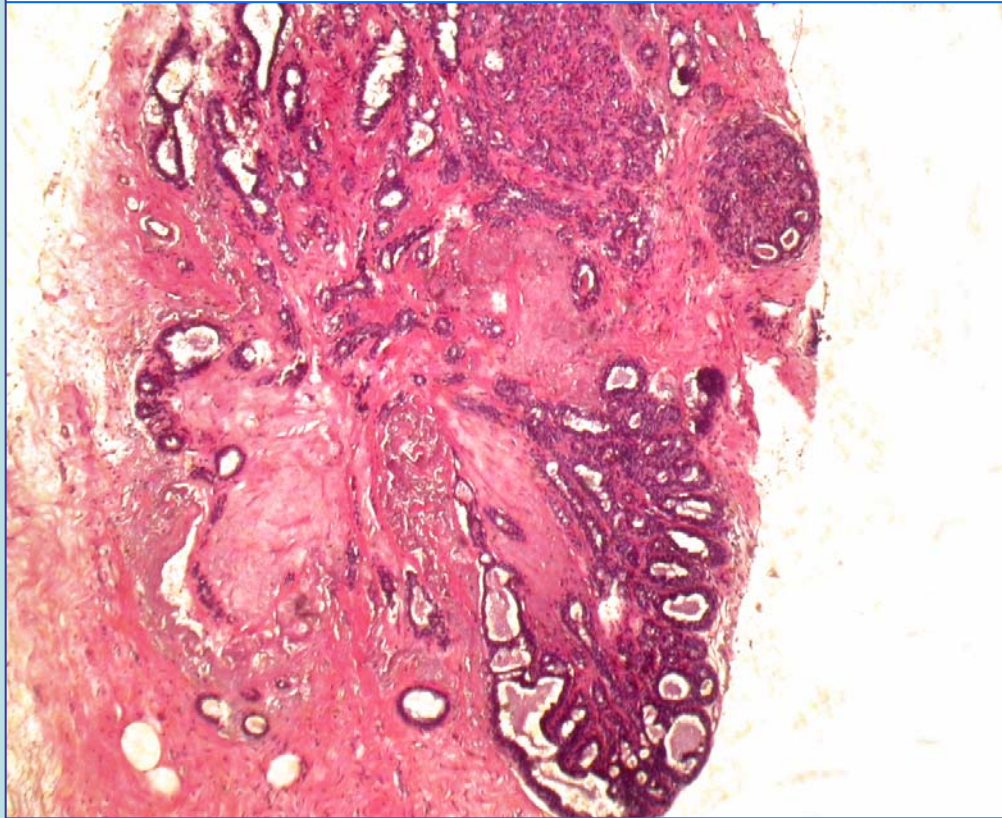
**5 MALIGNI (17 %):**

**1 CLIS**

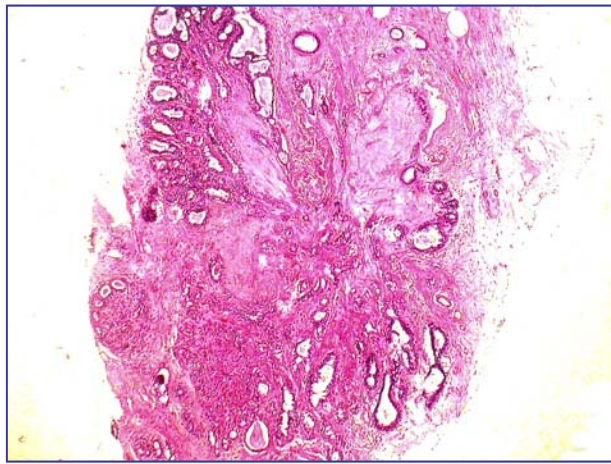
**2 CDIS**

**1 CDI GR. 2**

**1 CA TUBULARE**



**Maggio, 2005**



ORIGINAL ARTICLE

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# Assessment of 142 Stellate Lesions With Imaging Features Suggestive of Radial Scar Discovered During Population-based Screening for Breast Cancer

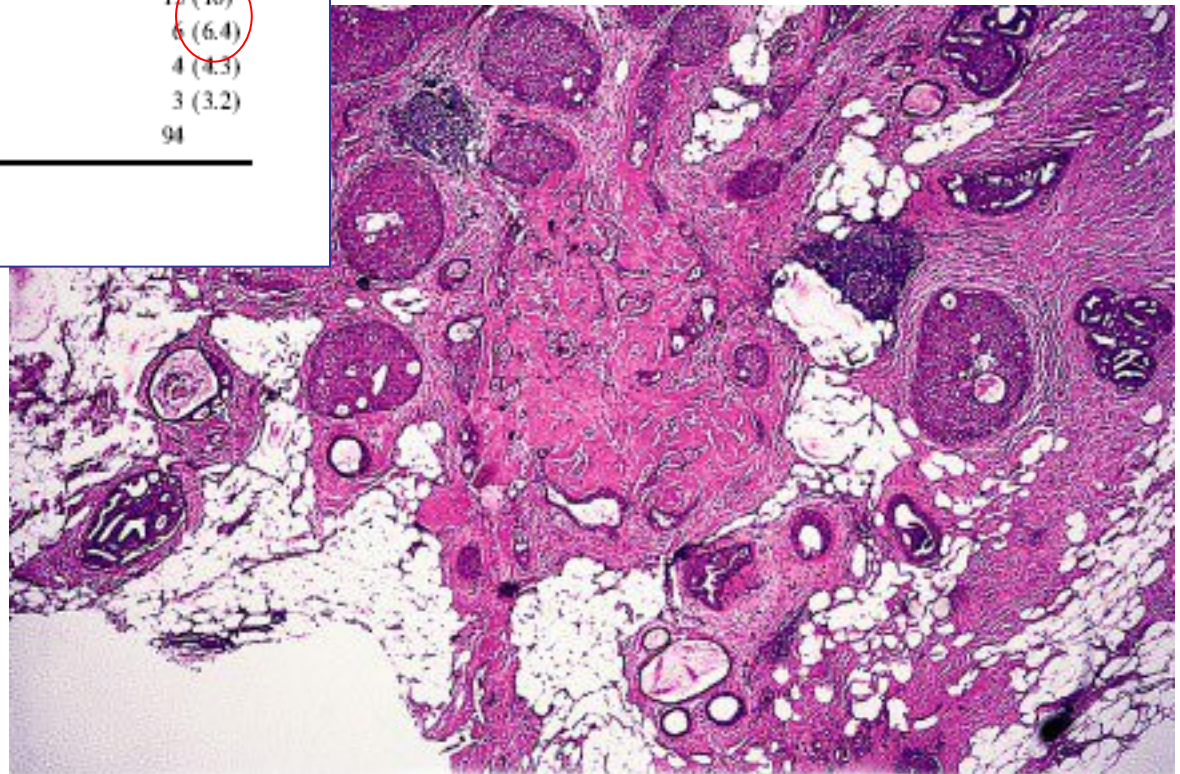
*Gelareh Farshid, MBBS, FRCPA\* and Gill Rush, MBBS, FRANZCR†*

**Am J Surg Pathol 28 (12), 1626-1631, 2004**



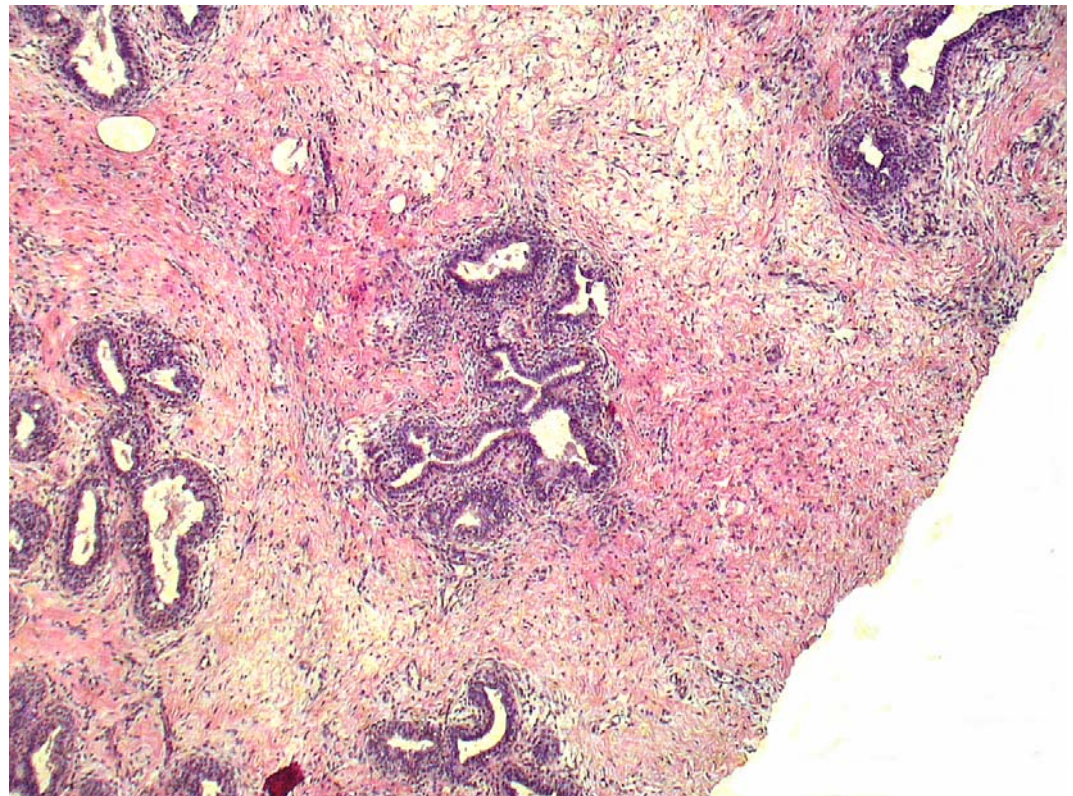
**TABLE 2.** The Nature and Frequency of Various Proliferative Lesions Arising in Screen-detected Radial Scars

Histology of Radial Scars	N (%)
RS, no significant hyperplasia	21 (22.3)
RS and proliferations up to florid hyperplasia	45 (47.9)
RS and atypical ductal hyperplasia	15 (16)
RS and DCIS	6 (6.4)
RS and lobular neoplasia (ALH, LCIS)	4 (4.3)
RS and invasive carcinoma	3 (3.2)
Total	94



# LESIONI FIBROEPITELIALI

NHSBSP, June  
2001 :.....a cellular  
stroma within a  
fibroepithelial  
lesion... B3

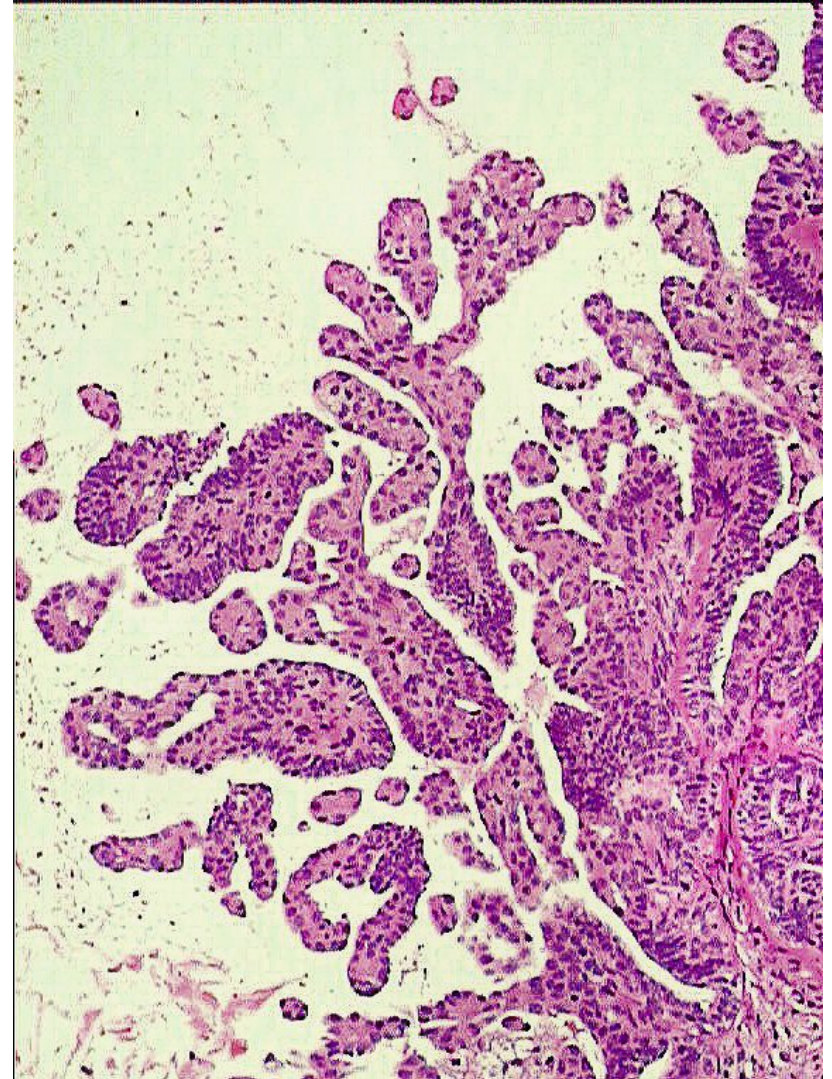


Any fibroepithelial lesion with cellular stroma in which the differential diagnosis includes pyloides tumor must be excised for complete evaluation.

Jacobs et al, 2002

# LESIONE PAPILLARE

- Papilloma intraduttale
- CDIS con aspetti papillari, al carcinoma papillare intracistico al carcinoma papillare invasivo
- Frammentarietà del materiale in esame amplifica le difficoltà interpretative



# LESIONE PAPILLARE

## **20/24 INTERVENTO:**

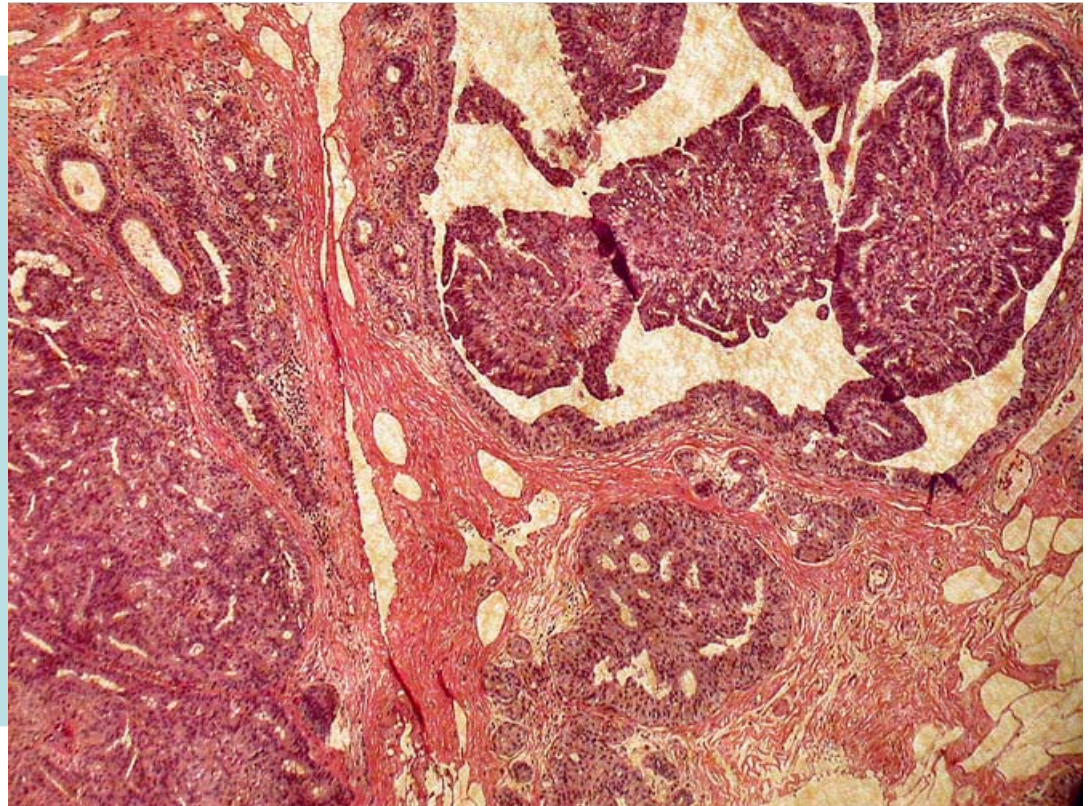
**10 papillomi duttali**

**7 adenosi + epiteliiosi**

**2 CDIS**

**1 CA INFILTRANTE**

**(15 %)**



## Needle core biopsy can reliably distinguish between benign and malignant papillary lesions of the breast

P J Carder, J Garvican, I Haigh<sup>1</sup> & J C Liston<sup>1</sup>

Department of Pathology, St James's University Hospital and <sup>1</sup>Leads/Wakefield Breast Screening Unit, Seacroft Hospital, Leeds, UK

Date of submission 12 August 2004

Accepted for publication 3 September 2004

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Carder P J, Garvican J, Haigh I & Liston J C

(2005) *Histopathology* 46, 320-327

### Needle core biopsy can reliably distinguish between benign and malignant papillary lesions of the breast

**Aims:** To review 21 screen-detected papillary lesions in which the core biopsy findings suggested a papillary lesion and to correlate pathological and radiological findings in order to assess the risks of associated malignancy and the need for surgical intervention. The appropriate management of non-malignant papillary breast lesions detected on needle core biopsy (NCB) is currently uncertain.

**Methods and results:** Forty-seven papillary breast lesions with a histological diagnosis of papilloma, papilloma with atypical ductal hyperplasia (ADH) or ductal carcinoma *in situ* (DCIS), multiple papillomas, 'papillomatosis' or papillary carcinoma (invasive or *in situ*) were identified from records at the Leeds Breast Screening and Assessment Unit. The cases were diagnosed between between May 1995 and May 2002. In 21 cases the previous NCB contained a papillary proliferation which had been categorized

as either 'B2', benign, 'B3', of uncertain malignant potential, or 'B4', suspicious of malignancy. All of the 19 'B3' or 'B4' cases and one of the two 'B2' lesions had undergone open surgical biopsy. All cases with a previous 'B4' were malignant on subsequent excision. All excised cases with a previous 'B3' or 'B2' were found benign, although four of the 'B3's derived from papillomata associated with an atypical proliferation amounting to ADH. In three of these four (75%) the papillary proliferation had been associated with epithelial hyperplasia of usual type (HUT) on the core and the radiological features were of a mass lesion detected on incident round screen which had increased in size.

**Conclusion:** Our results confirm the accuracy of NCB in the diagnosis of screen-detected papillary lesions of the breast. Surgical excision may not always be necessary following a 'B3' core biopsy.

**Keywords:** breast screening mammotome, core biopsy, papillary carcinoma, papilloma

**Abbreviations:** ADH, atypical ductal hyperplasia; DCIS, ductal carcinoma *in situ*; HUT, hyperplasia of usual type; NCB, needle core biopsy; NHSBSP, National Health Service Breast Screening Programme

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# LESIONI MUCOCELE-LIKE

ORIGINAL ARTICLE

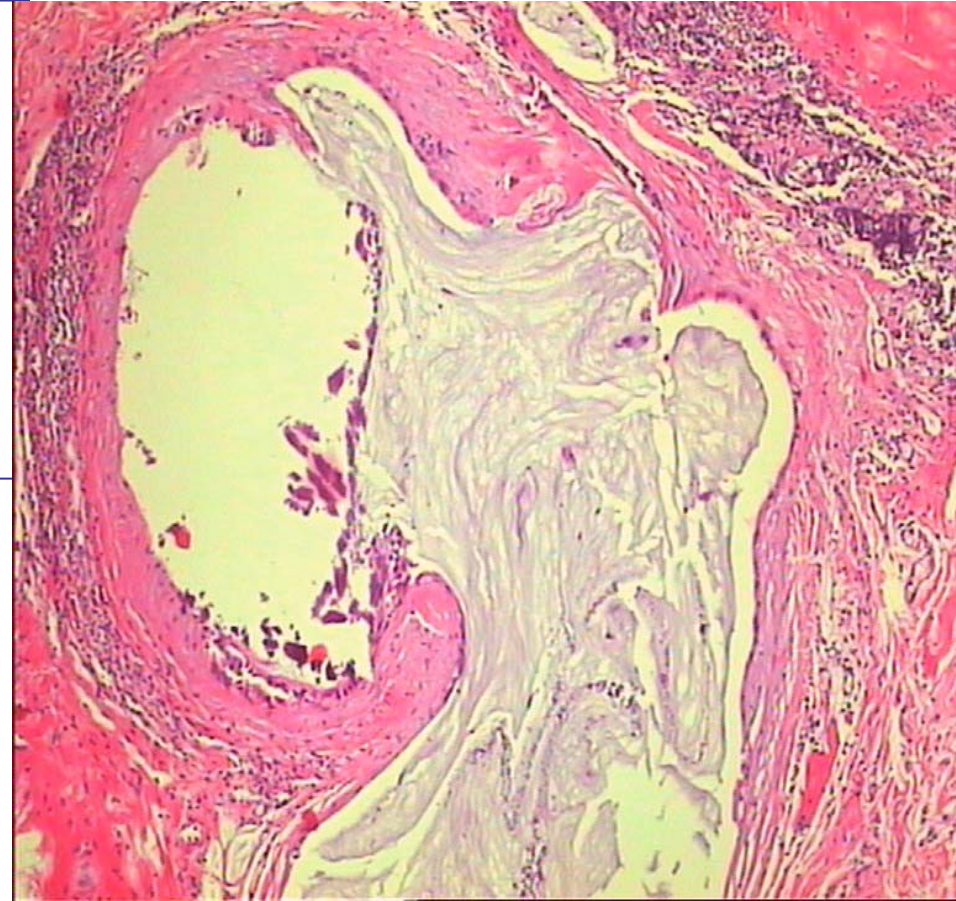
## Observations on the Pathologic Diagnosis of Selected Unusual Lesions in Needle Core Biopsies of Breast

Syed A. Hoda, MD, and Paul Peter Rosen, MD

*Department of Pathology, Weill Medical College of Cornell University and New York Presbyterian Hospital-Weill Cornell Center, New York, New York*

■ **Abstract:** Pathologic diagnoses rendered on needle core biopsies of mammary lesions are primary determinants of further intervention. Such biopsies are being performed for an ever-widening range of diseases in an attempt to reliably and efficiently render a diagnosis. This review is intended to provide practical guidance to pathologists in dealing with selected unusual lesions encountered in these biopsies. Herein we offer advice on avoiding common diagnostic errors and on considering the relevant differential diagnosis of mucocele-like lesions, spindle-cell metaplastic carcinoma, adenomyoepithelioma, pseudoangiomatous stromal hyperplasia (PASH), collagenous spherulosis, myofibroblastoma, vascular lesions, and lymphoid infiltrates in the breast. ■

**Key Words:** breast, breast carcinoma, core biopsy, diagnosis, pathology



**Breast J, 10 (6):522-7, 2004.**

# LESIONI MUCOCELE-LIKE

6 MIC: mammotome

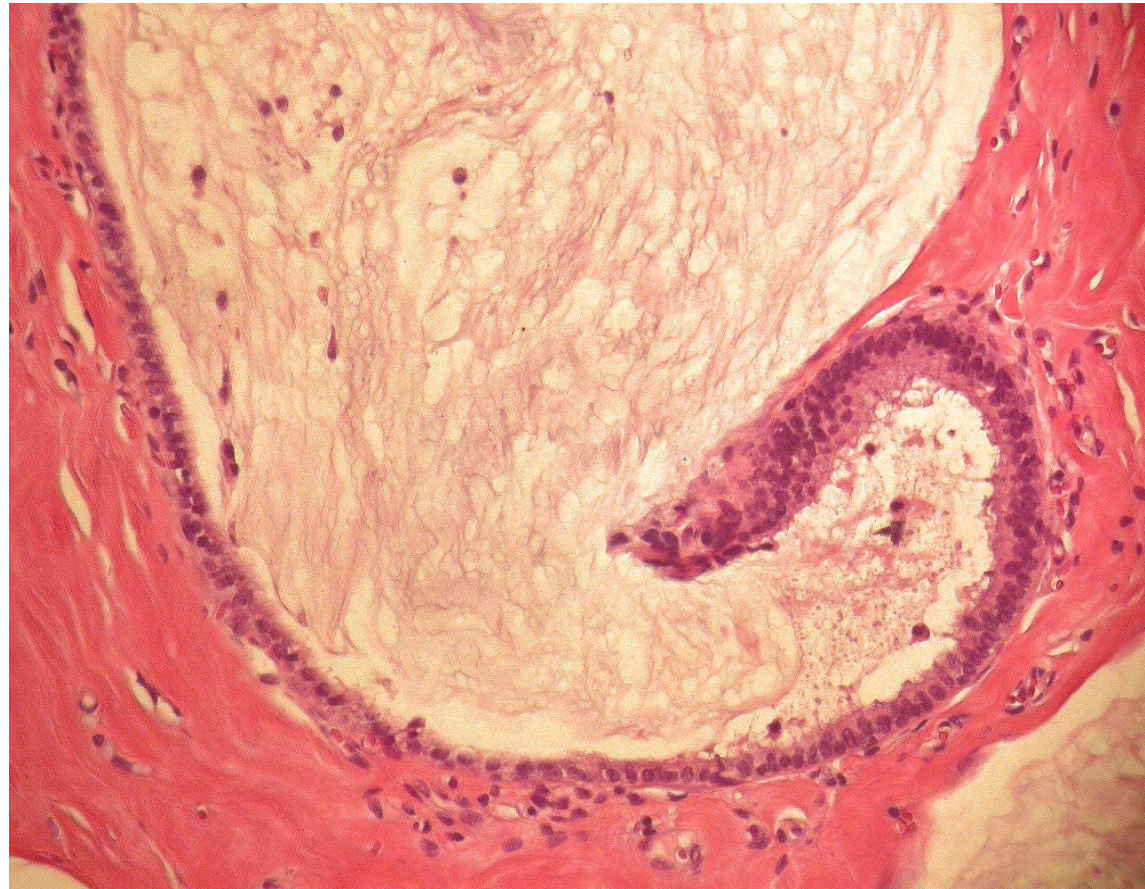
6 intervento:

2 benigno

2 CDIS

2 CA MUCINOSO

(66 % maligni)





# Surgical excision is warranted following a core biopsy diagnosis of mucocoele-like lesion of the breast

P J Carder,<sup>1,4</sup> C E Murphy<sup>2</sup> & J C Liston<sup>3,4</sup>

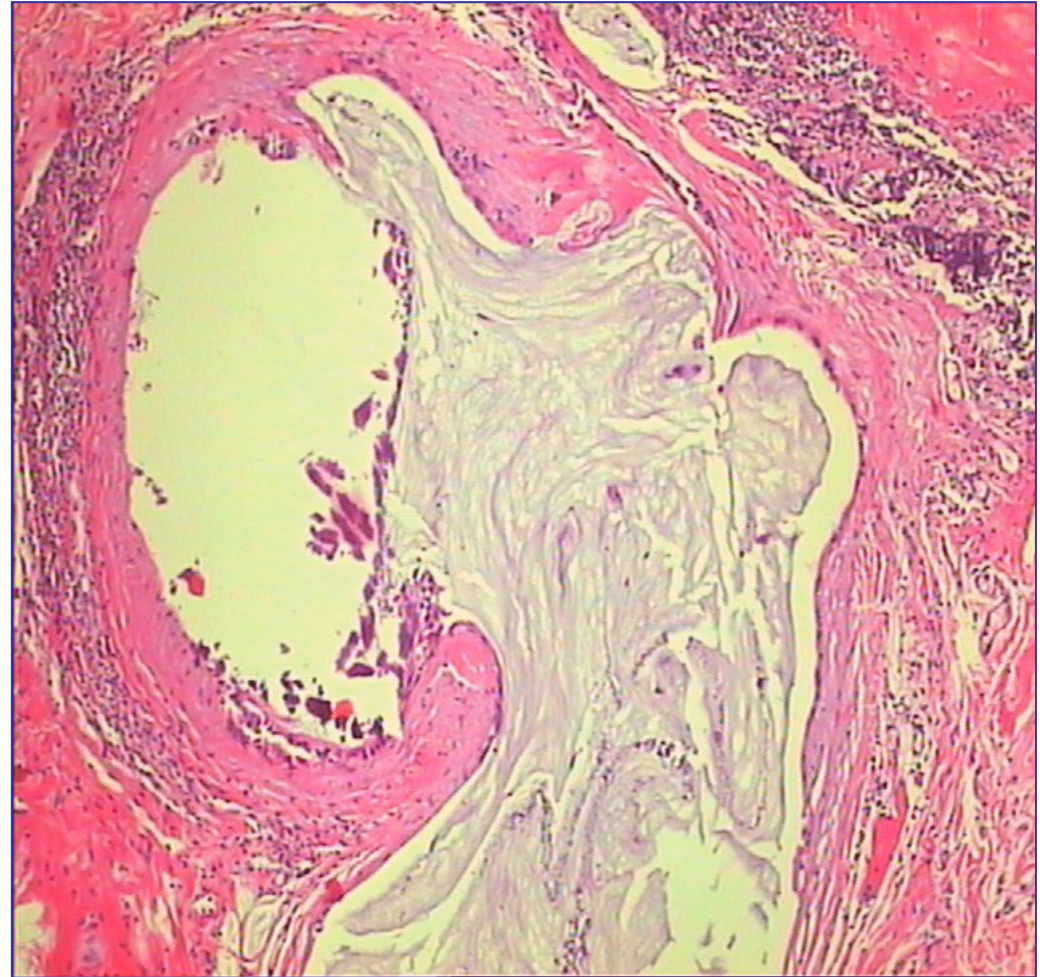
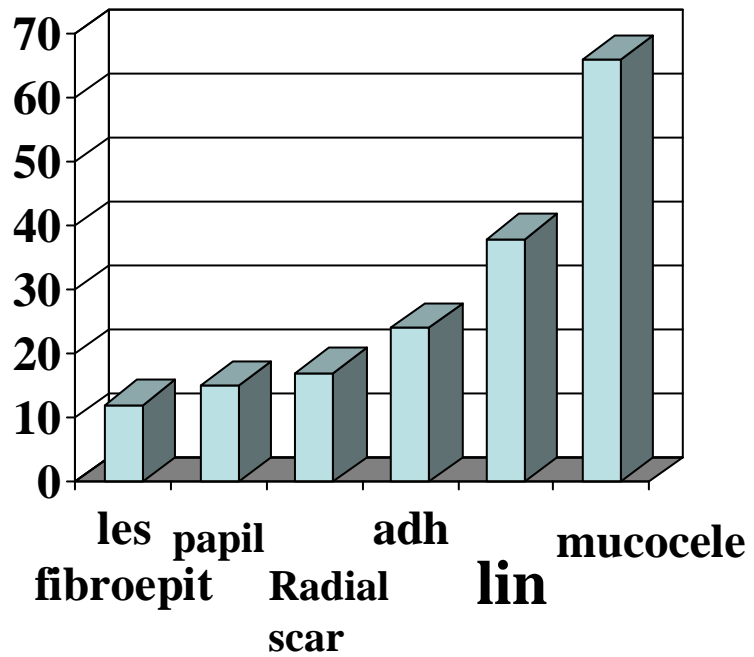
*Departments of <sup>1</sup>Pathology, <sup>2</sup>Surgery and <sup>3</sup>Radiology, St James's University Hospital, and <sup>4</sup>Leeds/Wakefield Breast Screening Unit, Seacroft Hospital, Leeds, UK*

Date of submission 13 January 2003

Accepted for publication 27 February 2004



B3: 159/1765 (9 %)



Maggio, 2005

**NELLA CATEGORIA B3  
L' INCIDENZA DI MALIGNITA' ALLA  
ESCISSIONE CHIRURGICA E' DIVERSA  
NELLE DIFFERENTI LESIONI**

## Predictive value of needle core biopsy diagnoses of lesions of uncertain malignant potential (B3) in abnormalities detected by mammographic screening

M E El-Sayed,<sup>1,2</sup> E A Rakha,<sup>1</sup> J Reed,<sup>3</sup> A H S Lee,<sup>1</sup> A J Evans<sup>4</sup> & I O Ellis<sup>1</sup>

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<sup>2</sup>*Public Health Department, Menoufia University, Shehin Elkom, Egypt,* <sup>3</sup>*East Midlands Quality Assurance Reference Centre, Nottingham University Hospitals NHS Trust, Nottingham, UK, and* <sup>4</sup>*Breast Unit, Nottingham University Hospitals NHS Trust, University of Nottingham, Nottingham, UK*

Date of submission: 10 March 2008

Accepted for publication: 12 June 2008

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El-Sayed M E, Rakha E A, Reed J, Lee A H S, Evans A J & Ellis I O

(2008) *Histopathology* 53, 650–657

### Predictive value of needle core biopsy diagnoses of lesions of uncertain malignant potential (B3) in abnormalities detected by mammographic screening

**Aims:** Breast needle core biopsy (NCB) is now a commonplace diagnostic procedure in breast cancer screening, providing accurate diagnoses of both benign and malignant lesions. However, NCB may result in the borderline diagnoses of lesion of uncertain malignant potential (B3) or suspicious of malignancy (B4). The aim was to study a large series of B3 cases from population-based screening subjects in order to evaluate positive predictive values (PPVs) for malignancy.

**Methods and results:** The results of 523 NCBs of women screened over a 7-year period (1999–2006) in the East Midlands region, UK, with a B3 diagnosis who underwent surgical excision, were reviewed and compared with the final excision histology. Five percent of NCBs were reported as B3. The most frequent histological subtypes were atypical intraductal epithelial prolifera-

tion (AIDEP) and radial scar/complex sclerosing lesion (RS/CSL). Final excision histology was benign in 417 (80%) and malignant in 106 (20%) subjects (60 ductal carcinoma *in situ* and 46 invasive carcinoma). Lesion-specific PPVs were as follows: AIDEP 32%; lobular neoplasia (LN) 30%; RS/CSL with AIDEP or LN 24%; RS/CSL without atypia 9%; papillary lesion with AIDEP or LN 36%; and papillary lesion without atypia 4%. Five of the 32 fibroepithelial lesions with cellular stroma were phyllodes tumours (four benign and one borderline). None of the five mucinous lesions on NCB was malignant. **Conclusions:** Our results show that approximately one-fifth of NCB of screen-detected breast lesions classified as B3 are malignant on excision, and the likelihood of malignancy varies substantially between different histological subtypes.

**Keywords:** B3, needle core biopsy, positive predictive value, screen-detected breast lesions

**Abbreviations:** ADH, atypical ductal hyperplasia; AIDEP, atypical intraductal epithelial proliferation; ALH, atypical lobular hyperplasia; DCIS, ductal carcinoma *in situ*; FE, fibroepithelial lesion with cellular stroma; FNAC, fine-needle aspiration cytology; LCIS, lobular carcinoma *in situ*; LN, lobular neoplasia; NCB, needle core biopsy; PL, papillary lesion; PPV, positive predictive value; RS/CSL, radial scar/complex sclerosing lesion

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**Predictive value of needle core biopsy diagnosis of lesions of uncertain malignant potential (B3) in abnormalities detected by mammographic screening .**

- **A large series** of B3 cases from population-based screening subjects
- **523 NCBs** screened over a 7-year period
- **B3: 5 %** of total diagnoses
- Final excision was **benign** in 417 (**80 %**) and **malignant** in 106 (**20 %**) (60 DCIS and 46 invasive carcinoma).

**Table 2.** Details of histological outcome of the different groups of lesions reported on NCB

Reason for B3 diagnosis on NCB	No. (Percentage of total)	Final excision diagnoses			PPV (%)
		Malignant invasive	Malignant <i>in situ</i>	Non-malignant	
AIDEP	188 (36)	23	38	127	32
Pure AIDEP*	147	20	29	98	23
LN	33 (6)	5	6	22	33
Pure classical LN*	27	5	3	19	30
Pleomorphic LCIS	1	0	1	0	100
Papillary lesion	124 (24)	4	9	111	10
With atypia	25	2	7	16	36
AIDEP	24	2	6	16	33
LN	1	0	1	0	100
Without atypia	99	2	2	95	4
PL	94	2	2	90	4
PL with RS/CSL	5	0	0	5	–
RS/CSL	156 (26)	9	10	137	12
With atypia	21	1	4	16	24
AIDEP	17	1	3	13	23
LN	4	0	1	3	25
With probable absence of ME	3	2	0	1	66
Without atypia	132	6	6	121	9
FE lesions	32 (6)	0	0	32	–
Mucocoele-like lesion	5 (1)	0	0	5	–
Vascular lesion	1	0	0	1	–
B3 miscellaneous	21 (4)	5	5	17	–
Total	523	46	60	417	20

AIDEP, atypical intraductal epithelial proliferation; LN, lobular neoplasia [atypical lobular hyperplasia and lobular carcinoma *in situ* (LCIS)]; RS/CSL, radial scar/complex sclerosing lesion; ME, myoepithelial cells; FE, fibroepithelial.

\* Pure AIDEP or LN without other associated lesion requiring B3 categorization.

## Predictive value of needle core biopsy diagnoses of lesions of uncertain malignant potential (B3) in abnormalities detected by mammographic screening

M E El-Sayed,<sup>1,2</sup> E A Rakha,<sup>1</sup> J Reed,<sup>3</sup> A H S Lee,<sup>1</sup> A J Evans<sup>4</sup> & I O Ellis<sup>1</sup>

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## Diagnostic Concordance in Reporting Breast Needle Core Biopsies using the B Classification—A Panel in Italy

Simonetta Bianchi · Saverio Caini ·  
Maria Grazia Cattani · Vania Vezzosi ·  
Mauro Biancalani · Domenico Palli

Received: 22 January 2009 / Accepted: 28 April 2009  
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**Abstract** The widespread implementation of mammography screening has resulted in an increased frequency of needle core biopsies (NCB). The aim of this study was that of evaluating the diagnostic reproducibility on breast NCB, according to the B-classification, among several pathologists from different Italian regions. Fifty single slides of NCBs performed for non palpable breast lesions were selected to evaluate the diagnostic reproducibility, according to the B classification, among 31 pathologists from different Italian areas, involved in the pathologic diagnosis of screen-detected breast lesions. According to the study majority diagnosis (MD), 21 cases were classified as B2 (benign lesion), 23 B3

(lesion of uncertain malignant potential) and 6 B5 (malignant lesion). Overall, individual kappa coefficients in comparison to MD were good (mean 0.61, range 0.31–0.88). The level of inter-observer agreement, however, appeared lower in differentiating the two intermediate categories B2 and B3, thus potentially leading to over-treatment (false-positives: 26%) or under-treatment (false-negatives: 17%) of individual patients. Specific sub-types of B3 need an improvement of the diagnostic definition. A multidisciplinary approach and consultation with expert colleagues are recommended.

**Keywords** Breast · Non palpable lesions · Needle core biopsy · Reporting · Diagnostic concordance

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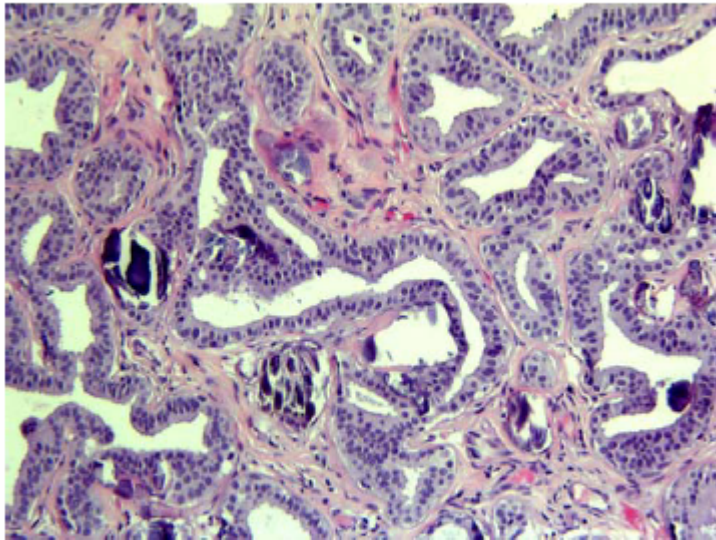
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### Abbreviations

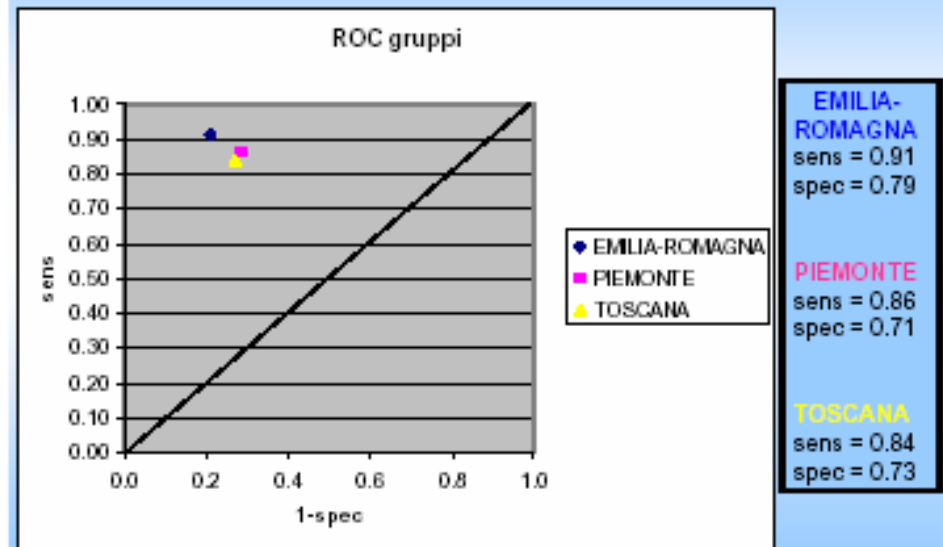
ADH	atypical ductal hyperplasia
AEPDT	atypical epithelial proliferation of ductal type
BI-RADS	breast imaging reporting and data system
CCCa	columnar cell change with atypia
CCHa	columnar cell hyperplasia with atypia
COBRA	core biopsy after radiological localisation
DCIS	ductal carcinoma in situ
DIOS	diagnosis optimisation study
LCIS	lobular carcinoma in situ
LIN	lobular intraepithelial neoplasia
MD	majority diagnosis
NCB	needle core biopsy
PL	papillary lesion
PPV	positive predictive value
PT	phylloid tumor
ROC	receiver operating characteristic
RS	radial scar





**Fig. 1** Case n° 3-Columnar cell change with atypia: this case was classified as B3 by 18 pathologists, as B2 by 10 pathologists and B4 by 3 pathologists (H&E)

## Analisi della performance per gruppo regionale



From a practical point of view, multiple step sections and multidisciplinary meetings with radiologists and surgeons to assess the radio-pathological correlation between NCB and mammographic findings appear to be mandatory. A consultation with colleagues with extensive expertise in breast pathology should be recommended when some degree of uncertainty emerges about a specific NCB diagnosis (particularly when the two central B2 and B3 categories are involved) in order to avoid undertreatment or overtreatment of the patients.

## **C3 e B3**

The approach should be personalized and requires experience, good judgment and close interaction between the pathologist, the surgeon and the radiologist.

**Rosai, 2004**

# Diagnosi citologica e istologica preoperatoria

- 2) Quale intervento e' il piu' appropriato ?  
In particolare per i CDIS ad alto grado  
e' indicato il linfonodo sentinella ?

# I TUMORI della MAMMELLA

Linee guida sulla diagnosi,  
il trattamento e la riabilitazione

## Definizione

Il LS è il primo linfonodo (o linfonodi) che riceve linfa direttamente dal tumore primitivo. Ovvero: LS è ogni linfonodo che riceve direttamente linfa dal parenchima mammario, quindi dal tumore. I linfonodi ascellari sono raggiunti dalla linfa attraverso il circolo linfatico superficiale periareolare.

## Raccomandazioni generali

La metodica del LS nella pratica clinica deve essere condotta da un chirurgo esperto (che lavori presso un servizio che tratta oltre 150 casi/anno e che tratti personalmente almeno un caso alla settimana) e da uno specialista in medicina nucleare, che dovrebbero aver seguito un corso specifico in questa tecnica.

Almeno un chirurgo e un medico nucleare di ogni Centro dovrebbero effettuare una curva di

## Indicazioni

### Carcinomi mammari infiltranti con diagnosi accertata

La localizzazione del LS deve essere eseguita in donne con carcinoma infiltrante della mammella accertato biotticamente (B5), o con esame citoaspirativo positivo (C5) o già sottoposte per carcinoma infiltrante a tumorectomia, ampia resezione o quadrantectomia.

Un esame citoaspirativo sospetto (C4) con quadro strumentale suggestivo di carcinoma invasivo (U5, R5), può essere indicazione sufficiente per effettuare la biopsia del LS.

I linfonodi ascellari possono essere valutati con indagine ultrasonografica e, se sospetti, sottoposti a esame citologico su agoaspirato. La metodica deve essere effettuata prima dell'intervento sulla mammella e può essere utilizzata anche in caso di mastectomia.



ORIGINAL ARTICLE

# Sentinel lymph node biopsy for localised ductal carcinoma in situ?

P. Veronesi<sup>a,b</sup>, M. Intra<sup>a,\*</sup>, A.R. Vento<sup>a</sup>, P. Naninato<sup>a</sup>, P. Caldarella<sup>a</sup>,  
G. Paganelli<sup>c</sup>, G. Viale<sup>b,d</sup>

<sup>a</sup>*Division of Breast Surgery, European Institute of Oncology, Via Ripamonti, 435, 20141 Milan, Italy*

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## Current Topics

### Proceedings of the Consensus Conference on the Role of Sentinel Lymph Node Biopsy in Carcinoma of the Breast April 19 to 22, 2001, Philadelphia, Pennsylvania

GORDON F. SCHWARTZ, MD, MBA, ARMANDO E. GIULIANO, MD,  
UMBERTO VERONESI, MD, AND THE CONSENSUS CONFERENCE  
COMMITTEE

#### SENTINEL NODE BIOPSY IN DUCTAL CARCINOMA IN SITU

The low morbidity of SLNB has led to its consideration in patients with DCIS, based on reported observations of occasional axillary node metastasis in these patients. The panel was quite insistent about separating the 2 diagnoses: DCIS alone without evidence of any invasion versus DCIS with microinvasion. Most of the panelists would not recommend SLNB in the former group but would do so in the latter, because these patients formerly were advised to undergo at least a level I axillary dissection because of the small, but real, possibility of axillary metastasis. SLNB in patients with mammographically detected DCIS (i.e., as small areas of calcifications in the breast) or the diagnosis of DCIS made as an incidental finding is not currently indicated. For those patients with DCIS detected as a palpable mass or with large areas of calcifications treated with mastectomy or very large lumpectomy, SLNB may be indicated because, although the disease is noninvasive *in the sections studied*, invasion may be overlooked because the area of disease is so large. Some of these patients require mastectomy to treat DCIS, and

Yen TW, Hunt KK, Ross MI, Mirza NQ, Babiera GV, Meric-Bernstam F, Singletary SE, Symmans WF, Giordano SH, Feig BW, Ames FC, Kuerer HM.

Department of Surgical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX 77030, USA.

**Predictors of invasive breast cancer in patients with an initial diagnosis of ductal carcinoma in situ: a guide to selective use of sentinel lymph node biopsy in management of ductal carcinoma in situ.**

J Am Coll Surg 2005 4:516-26

**Predictors of invasive breast cancer in patients with an initial diagnosis of ductal carcinoma in situ: a guide to selective use of sentinel lymph node biopsy in management of ductal carcinoma in situ.**

**J Am Coll Surg 2005 4:516-26**

**- Of the 398 patients, 80 (20%) were found to have invasive disease on final pathology.**

**- Multivariate analysis revealed 4 independent predictors of invasive cancer on final pathology: 55 years of age or younger, diagnosis by core-needle biopsy, mammographic DCIS size of at least 4 cm, and high-grade DCIS.**

**- A total of 141 patients (35%) underwent SLNB as a component of their initial operation. Of these 141 patients, 42 (30%) had invasive disease on final pathology, and 14 (10%) had a positive sentinel lymph node: The only independent predictor of a positive SLN was the presence of a palpable tumor (OR, 4.28,  $p = 0.042$ ).**



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# Predictors of Invasive Breast Cancer in Patients with an Initial Diagnosis of Ductal Carcinoma in Situ: A Guide to Selective Use of Sentinel Lymph Node Biopsy in Management of Ductal Carcinoma in Situ

Tina WF Yen, MD, Kelly K Hunt, MD, FACS, Merrick I Ross, MD, FACS, Nadeem Q Mirza, MD, MPH, Gildy V Babiera, MD, FACS, Funda Meric-Bernstam, MD, FACS, S Eva Singletary, MD, FACS, W Fraser Symmans, MD, Sharon H Giordano, MD, MPH, Barry W Feig, MD, FACS, Frederick C Ames, MD, FACS, Henry M Kuerer, MD, PhD, FACS

**J Am Coll Surg 2005 4:516-26**

**Table 2.** Multivariate Analysis of Predictors of Invasive Breast Cancer in Patients with Initial Diagnosis of Ductal Carcinoma in Situ

<b>Independent predictors of invasive cancer</b>	<b><math>\beta</math> Coefficient</b>	<b>Odds ratio</b>	<b>95% CI</b>	<b>p Value</b>
Age $\leq$ 55 y	0.782	2.19	1.11–4.32	0.024
Core-needle biopsy	1.324	3.76	1.46–9.63	0.006
Mammographic DCIS size $\geq$ 4 cm	1.073	2.92	1.51–5.66	0.001
Grade 3 DCIS	1.119	3.06	1.49–6.30	0.002

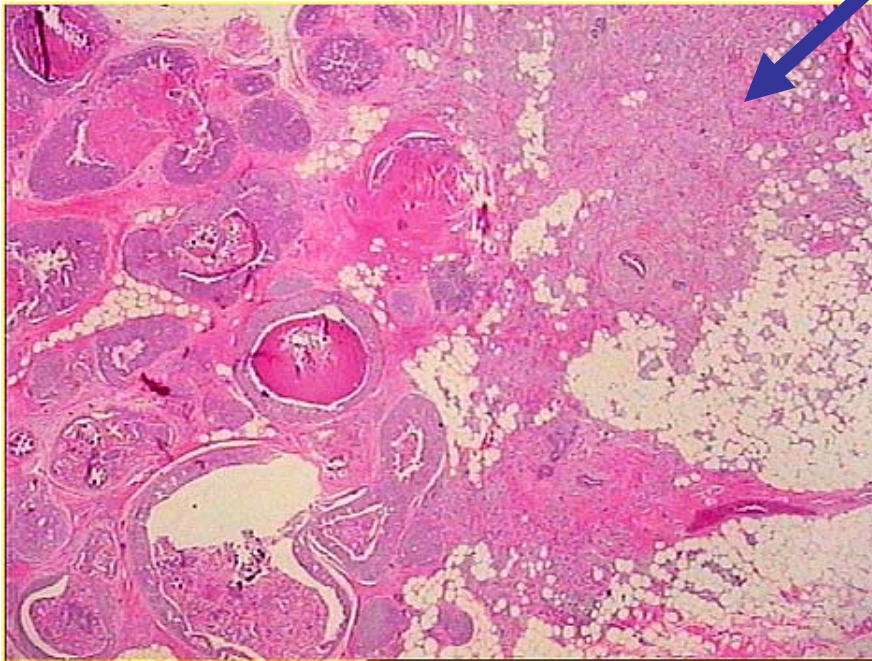
DCIS, ductal carcinoma in situ.

**Predictors of invasive breast cancer in patients with an initial diagnosis of ductal carcinoma in situ: a guide to selective use of sentinel lymph node biopsy in management of ductal carcinoma in situ.**  
**J Am Coll Surg 2005 4:516-26**

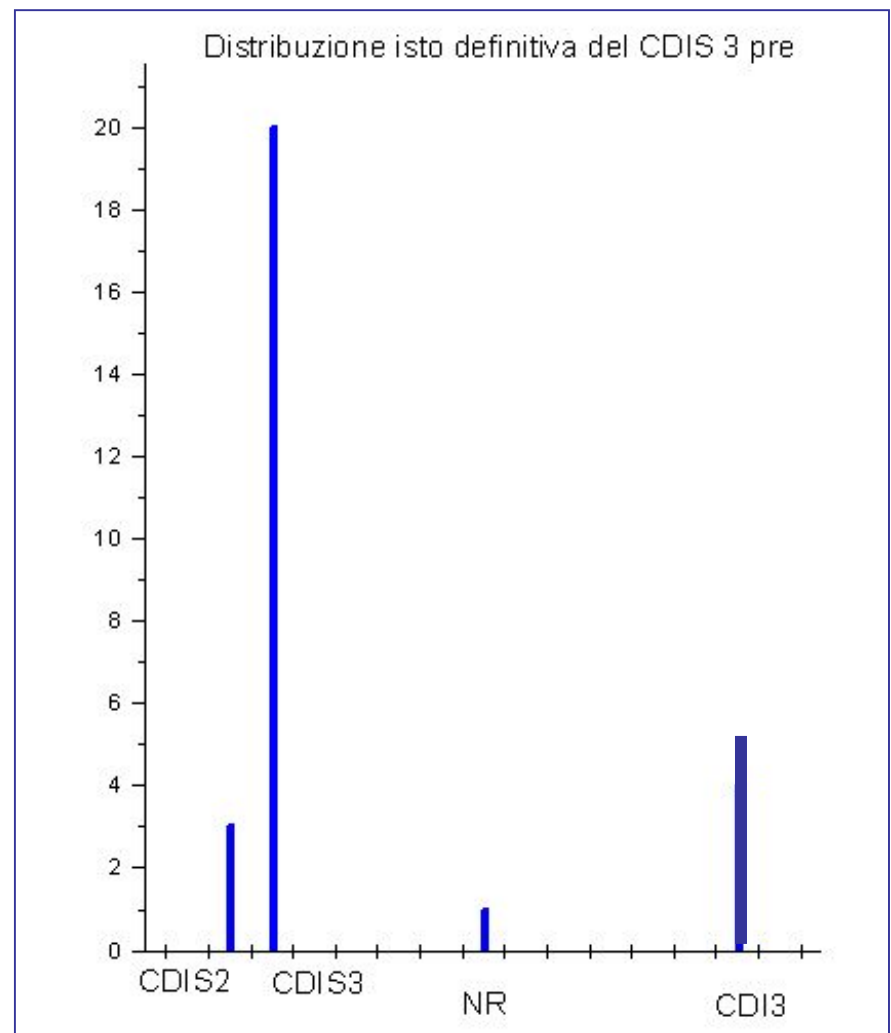
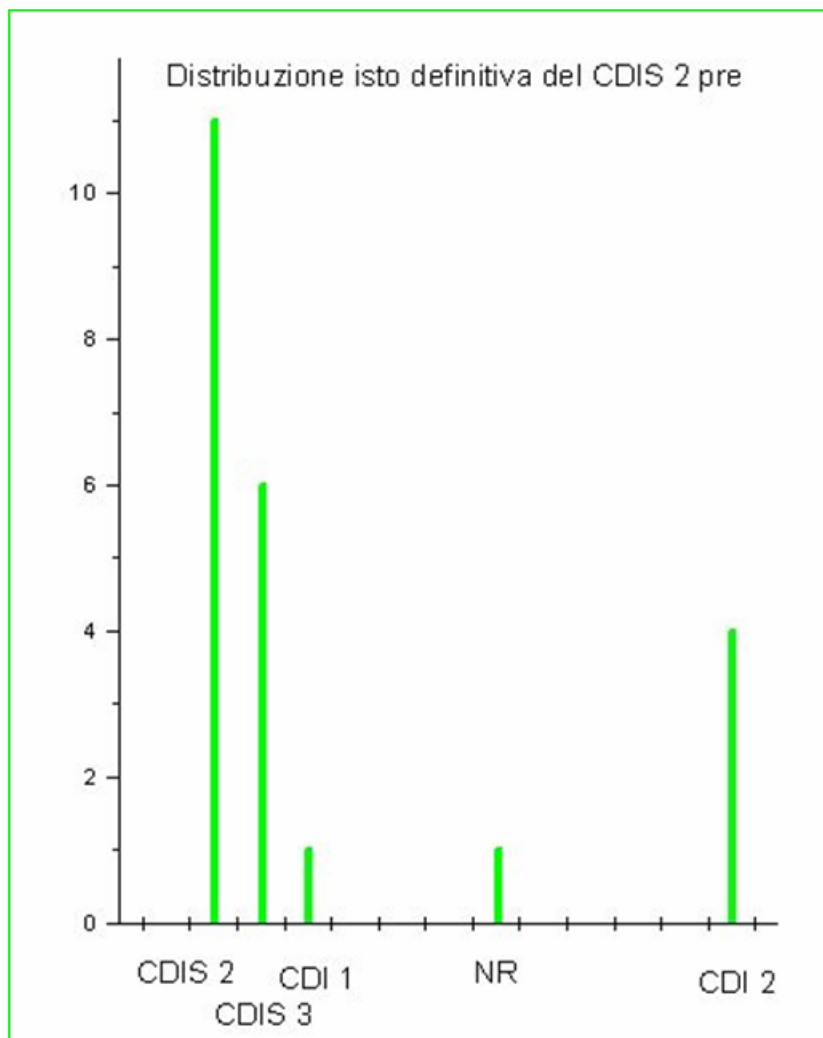
**CONCLUSIONS: SLNB should not be performed routinely for all patients with an initial diagnosis of DCIS. Risks and benefits of SLNB should be discussed with patients who are younger, are diagnosed by core-needle biopsy, or have large or high-grade DCIS.**

**Casistica 2006 Ospedale Maggiore: 35/232 CDIS hanno rivelato focolai infiltrativi all'intervento definitivo**

- **Sottostima della lesione: 15 % casi**
- **9/232 (4 %) hanno presentato metastasi al linfonodo sentinella**



**CDIS 2 che ha presentato focolai infiltrativi (3 mm) all'intervento chirurgico definitivo**



**12 % CDIS 2 e 18 % CDIS 3 hanno presentato focolai infiltrativi alla diagnosi definitiva**

- **Dimensioni > 15 mm**
- **Cancerizzazione lobulare**

# **Predictors of invasion in patients with core-needle biopsy-diagnosed ductal carcinoma in situ and recommendations for a selective approach to sentinel lymph node biopsy in ductal carcinoma in situ**

Lei Huo, MD, PhD<sup>1</sup>, Nour Sneige, MD<sup>1</sup>, Kelly K. Hunt, MD<sup>2</sup>, Constance T. Albarracin, MD, PhD<sup>1</sup>, Adriana Lopez,<sup>1</sup> MS<sup>3</sup>, Erika Resetkova, MD, PhD<sup>1\*</sup>

<sup>1</sup>Department of Pathology, The University of Texas M. D. Anderson Cancer Center, Houston, Texas

<sup>2</sup>Department of Surgical Oncology, The University of Texas M. D. Anderson Cancer Center, Houston, Texas

<sup>3</sup>Department of Biostatistics and Applied Mathematics, The University of Texas M. D. Anderson Cancer Center, Houston, Texas

**Cancer, 2006 14:205-214**

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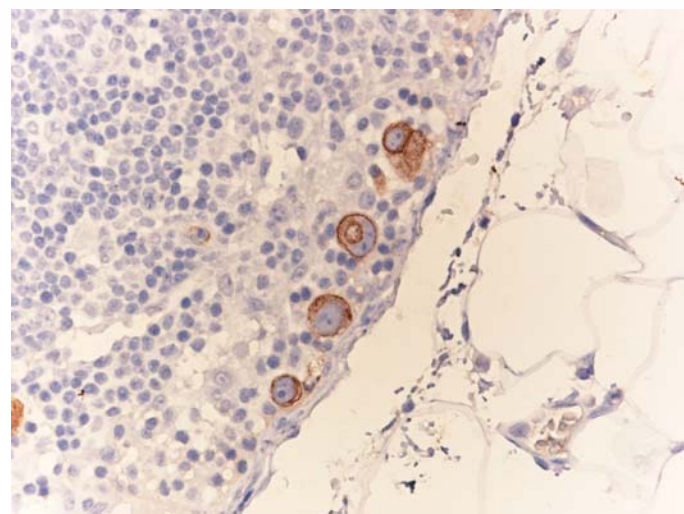
**Mass lesion; size >15 mm; lobular cancerization : 21% had invasive carcinoma on final excision.**

*Clinical trial*

## **Is there a role of sentinel lymph node biopsy in ductal carcinoma in situ?: analysis of 587 cases<sup>☆</sup>**

Amit Goyal<sup>1</sup>, Anthony Douglas-Jones<sup>2</sup>, Ian Monypenny<sup>3</sup>, Helen Sweetland<sup>1</sup>, Guy Stevens<sup>4</sup>, and Robert E Mansel<sup>1</sup>

<sup>1</sup>*Department of Surgery, Wales College of Medicine, Cardiff University, Cardiff, UK;* <sup>2</sup>*Department of Pathology, Wales College of Medicine, Cardiff University, Cardiff, UK;* <sup>3</sup>*Department of Surgery, University Hospital of Wales, Cardiff, UK;* <sup>4</sup>*Breast Test Wales, Cardiff, UK*



## Summary

*Background.* The role of sentinel lymph node biopsy (SLNB) in patients with a core needle-biopsy diagnosis of ductal carcinoma *in situ* (DCIS) has been intensely debated. Core needle-biopsy has an inherent sampling error leading to histologic underestimation of invasive disease. If SLNB is not performed at the time of the definitive operative procedure, patients found to have an invasive cancer, will require a second operative procedure. The study was designed to determine when the risk of finding invasive disease on final pathology in patients with an initial diagnosis of DCIS was sufficiently high to justify the use of SLNB.

*Methods.* We identified 587 women with an initial core needle-biopsy diagnosis of DCIS in the prospective Breast Test Wales (BTW) database from 1995 through 2005. A variety of clinical, mammographic and histologic features were identified and correlated with the presence of invasion at excision using univariate and multivariate analyses.

*Results.* Median age of patients at the time of diagnosis was 58 years (range 41 to 83 years). 201 patients (36%) were treated by mastectomy and 354 (64%) by breast conservation surgery. 220 of 587 patients (38%) were found to have invasive disease on final pathology. On univariate analysis, the rate of upstaging was related to the presence of a clinically palpable mass and size of the mass (both  $p < 0.0001$ , Mann-Whitney test); mammographic presence of a mass and size of the mass (both  $p < 0.0001$ , Mann-Whitney test). Multivariate logistic regression analysis revealed 2 independent predictors of invasive cancer on final pathology: mass on clinical examination (odds ratio [OR] 5.09;  $p < 0.0001$ ) and mammographic mass (OR, 7.37;  $p < 0.0001$ ). Age, grade of DCIS, microinvasion and presence of comedonecrosis did not help in distinguishing between patients with DCIS and those upstaged to invasive carcinoma at definitive surgery. Axillary nodal staging (four node sampling or clearance) was done at the time of surgery in 269 patients. Axillary nodal metastases were found in 35 of 269 patients (13%). All 35 patients had invasive carcinoma on final pathology.

*Conclusion.* The indiscriminate use of SLNB in patients with DCIS seems excessive. Our study suggests that patients with a mass on clinical examination or mammogram have an increased risk of invasive disease at the time of definitive operative procedure and should undergo SLNB at the initial procedure. In addition, SLNB should be performed in patients undergoing mastectomy because mastectomy precludes SLNB if invasive disease is subsequently discovered.

*Table 2.* Multivariate analysis of predictors of invasive breast cancer in patients with initial diagnosis of ductal carcinoma *in situ*

Independent predictors of invasive cancer	Odds ratio		<i>p</i> value
Clinically palpable mass	5.09	3.06–8.48	< 0.0001
Mammographic presence of mass	7.37	3.27–16.64	< 0.0001



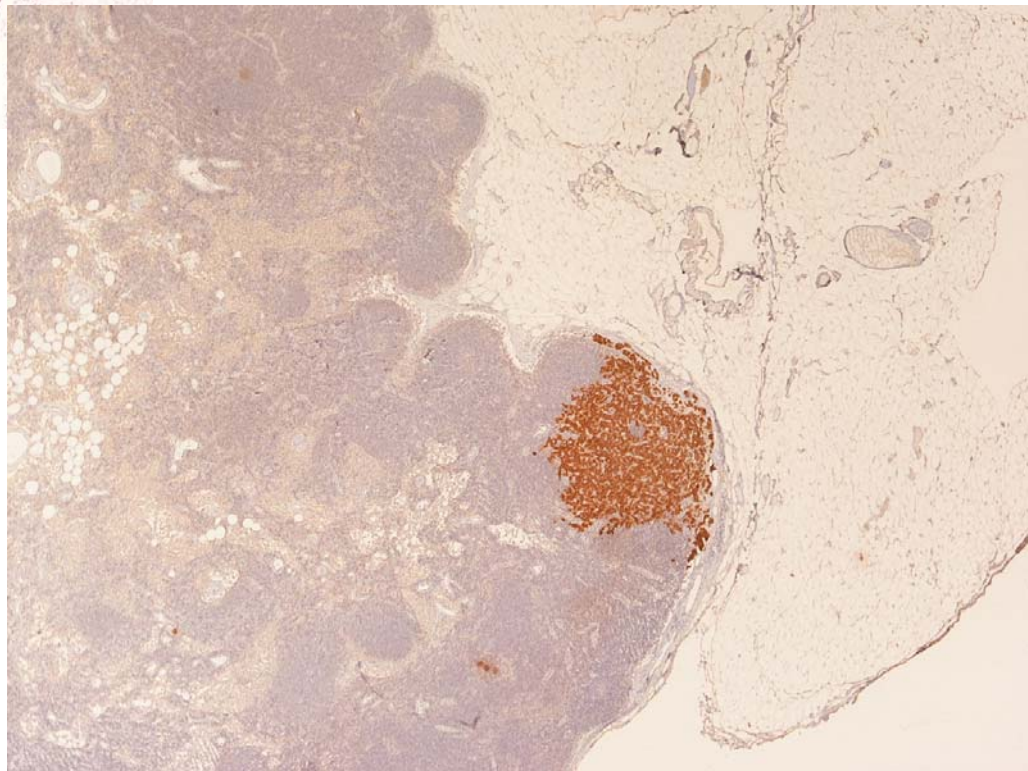
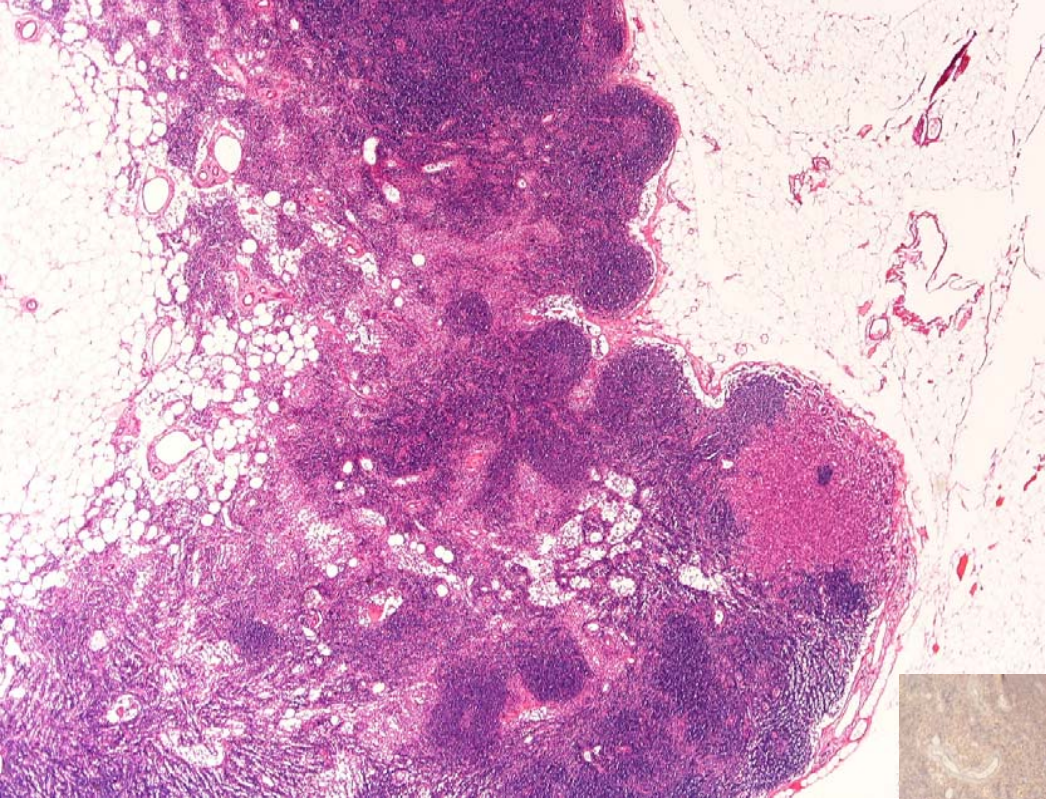
***Breast J. 2008 Jan-Feb; 14(1):55-60.***

**Value of sentinel lymph node biopsy in breast ductal carcinoma in situ upstaged to invasive carcinoma.**

**R. Sakr, M. Antoine, E. Barranger, G. Dubernerd, C. Salem and S. Uzan.**

**Paris, France**

- **80 patients were enrolled, of the 61 diagnosis of DCIS, 12/61 (20 %) were microinvasive or invasive carcinoma at surgery**
- **9/61 (15%) had a metastatic SLN**
- **tumour size larger than 30 mm and mastectomy were the only significant predicting factors of upstaged disease ( $p < 0,0001$ )**
- **In patients with initial diagnosis of large DCIS programmed for mastectomy, SNL biopsy should be discussed in order to detect underlying invasive disease and to spare patients a second operating time**



***Journal of Clinical Pathology* 2009;62:534-538 .**

**ORIGINAL ARTICLES**

**Sentinel lymph node biopsy in patients with a  
needle core biopsy diagnosis of ductal  
carcinoma in situ: is it justified?**

**B Doyle<sup>1</sup>, M Al-Mudhaffer<sup>2</sup>, M M Kennedy<sup>2</sup>, A O'Doherty<sup>3</sup>, F  
Flanagan<sup>4</sup>, E W McDermott<sup>5</sup>, M J Kerin<sup>6</sup>, A D Hill<sup>5</sup>, C M Quinn<sup>1</sup>**

**1 Irish National Breast **Screening** Programme and Department of  
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Histopathology, Mater Misericordiae Hospital, Dublin, Ireland**

**3 Irish National Breast Screening Programme and Department of Radiology,  
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# **Sentinel lymph node biopsy in patients with a needle core biopsy diagnosis of ductal carcinoma in situ: is it justified?**

*Journal of Clinical Pathology* 2009;62:534-538 .

- **Population based mammographic screening**
- **145 patients** with an NCB biopsy diagnosis of DCIS who had SNB performed at the time of primary surgery
- **55/145 patients (37,9%)** with an NCB diagnosis of DCIS **had invasive carcinoma in the excision specimen**
- **7/145 patients (4.8 %)** had a **positive sentinel lymph node, 4 macrometastases and 3 micrometastases**
- **The median invasive tumour size was 6 mm**
- **A radiological mass and areas of microinvasion (< 1 mm) are predictive of invasive carcinoma**

**Sentinel lymph node biopsy in patients with a needle core biopsy diagnosis of ductal carcinoma in situ:  
is it justified?**

*Journal of Clinical Pathology 2009;62:534-538 .*

In view of the high rate of understimation (37,9 %) of invasive carcinoma in patients with NCB diagnosis of DCIS in this study, **SNB appears justified in this group of patients.**

# Diagnosi citologica e istologica preoperatoria

- 1) Quali diagnosi richiedono l'intervento chirurgico? Quanti C3 e B3 che vanno all'intervento sono lesioni maligne?
- 2) Quale intervento e' piu' appropriato per i CDIS ad alto grado, in particolare, e' indicato il linfonodo sentinella ?



European guidelines for quality assurance in breast cancer screening and diagnosis *Fourth Edition*



European Commission

The pathologist is a **key-member** of the **multidisciplinary team** and must participate fully in preoperative and post-operative case discussions. **Accurate pathological diagnosis** and provision of prognostically significant information are vital to **ensure appropriate patient management** as well as accurate programme monitoring and evaluation.





## **Thresholds for therapies: highlights of the St Gallen International Expert Consensus on the Primary Therapy of Early Breast Cancer 2009**

A. Goldhirsch<sup>1,2\*</sup>, J. N. Ingle<sup>3</sup>, R. D. Gelber<sup>4</sup>, A. S. Coates<sup>5</sup>, B. Thürlimann<sup>6</sup>, H.-J. Senn<sup>7</sup>  
& Panel members<sup>†</sup>

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*Received 12 May 2009; accepted 12 May 2009*

***Breast Disease***

**Changes in surgical management resulting from case review at a breast cancer multidisciplinary tumor board (p NA)**

Erika A. Newman, Amy B. Guest, Mark A. Helvie, Marilyn A Roubidoux, Alfred E. Chang, Celina G. Kleer, Kathleen M. Diehl, Vincent M. Cimmino, Lori Pierce, Daniel Hayes, Lisa A. Newman, Michael S. Sabel

**Published Online: Cancer 22 Sep 2006**

The treatment of breast cancer requires a **multidisciplinary approach**, and patients are often referred to a multidisciplinary cancer clinic. The purpose of this study was to evaluate the impact of this approach on the surgical management of patients with breast cancer.



"...Only a few decades ago was deemed perfectly appropriate to issue a report on a mastectomy specimen as: Invasive carcinoma with three metastatic lymph nodes. Currently, the information expected to be provided in such a specimen is daunting..."

Rosai and Ackerman's  
Surgical pathology,  
Elsevier Inc 2004

Am J Clin Pathol 2002 Jul;118(1):101-8

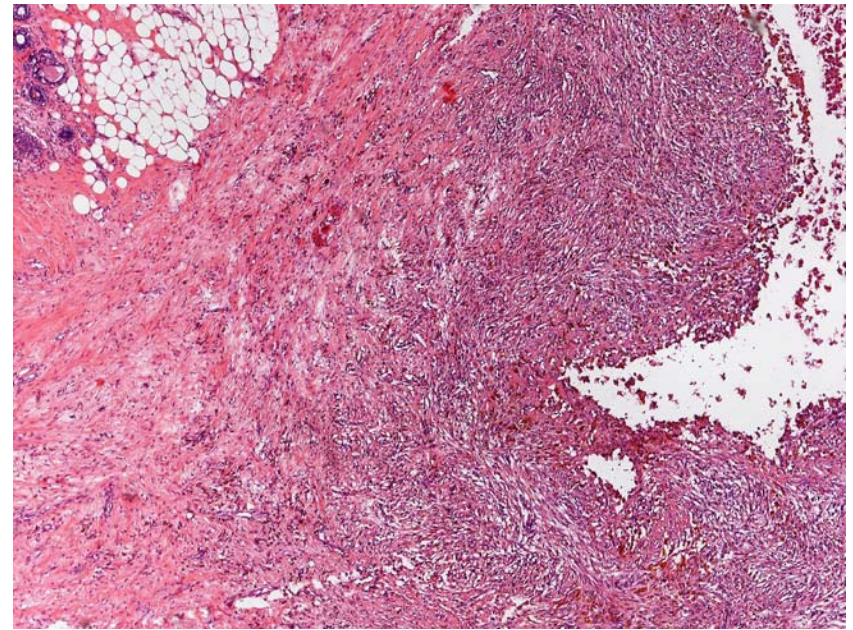
## **Practical considerations in the pathologic diagnosis of needle core biopsies of breast.**

**Hoda SA, Rosen PP.**

"Final characterization of the lesion must be based on pathologic data from the NCB and excisional biopsy specimens."

# correlazione tra dimensioni della lesione all'imaging e all'intervento

In 29/242 casi (12 %) non residuo neoplastico all'intervento chirurgico definitivo:  
lesioni < 1 cm asportate completamente in fase preoperatoria



## Analisi della performance individuale (2)

		Gold standard		tot	Sensibilità %	Specificità %
		positivo	negativo			
Letture	positivo	veri positivi	falsi positivi			
	negativo	falsi negativi	veri negativi			

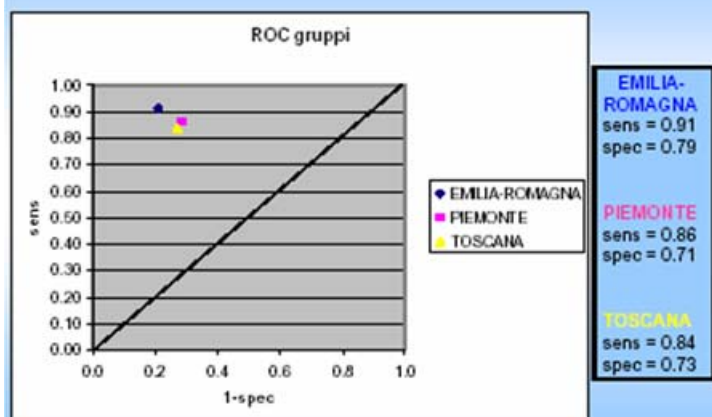
  

	veri positivi	veri negativi	falsi positivi	falsi negativi	tot	Sensibilità %	Specificità %
R18	22	19	2	7	50	0.76	0.90
R19	28	13	8	1	50	0.97	0.62
R20	24	16	5	5	50	0.83	0.76
R21	22	19	2	7	50	0.76	0.90
R22	22	17	4	7	50	0.76	0.81
R23	23	17	4	6	50	0.79	0.81
R24	23	15	6	6	50	0.79	0.71
R25	26	16	5	3	50	0.90	0.76
R26	26	15	6	3	50	0.90	0.71
R27	27	15	6	2	50	0.93	0.71
R28	25	9	12	4	50	0.86	0.43
R29	22	13	8	7	50	0.76	0.62
R30	25	16	5	4	50	0.86	0.76
R31	25	15	6	4	50	0.86	0.71

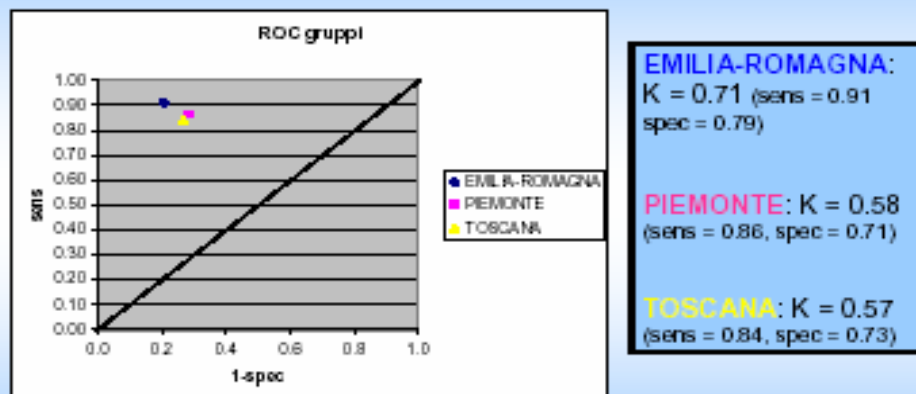
**SENSIBILITA'** = capacità di classificare correttamente i positivi =  $vp / (vp + fn)$

**SPECIFICITA'** = capacità di classificare correttamente i negativi =  $vn / (vn + fp)$

## Analisi della performance per gruppo regionale



## Concordanza dei gruppi regionali con il "gold standard"<sup>a</sup> (= diagnosi di maggioranza)



<sup>a</sup> In quanto misura di performance complessiva di gruppo, i valori di K risultano coerenti con la curva ROC di gruppo: l'Emilia-Romagna ha la migliore performance complessiva (migliore sens e migliore spec), Piemonte e Toscana sono più o meno sullo stesso livello

## REVIEW

# Ductal Carcinoma In Situ: Value of Sentinel Lymph Node Biopsy

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**Background:** Ductal carcinoma in situ (DCIS) represents about 20% of newly diagnosed breast carcinomas. Axillary metastasis is often related to undiagnosed DCIS with microinvasion (DCISM). The aim of this study was to confirm the interest of sentinel lymph node (SLN) biopsy in extensive DCIS.

**Methods:** Patients with a diagnosis of DCIS or DCISM and axillary lymph node evaluation were selected. Surgical treatment included SLN biopsy and/or axillary lymph node dissection (ALND). Serial sections were stained with hematoxylin and eosin (H&E) and with an immunohistochemical (IHC) method. When a micrometastasis was found, the breast specimen was revised searching for occult microinvasion.

**Results:** Hundred and forty patients with initial DCIS were enrolled in the study. Node metastasis was identified in 9 patients (7%) of the 128 patients with DCIS and DCISM. At final histology, 4 (10%) of the 39 patients with pure DCIS and SLN biopsy and 1 (7%) of the 14 patients with DCISM and SLN biopsy had axillary micrometastasis. Four of the 12 patients upstaged to invasive carcinoma had metastatic SLNs.

**Conclusions:** Sentinel lymph node biopsy is valuable in patients with diffuse DCIS or DCISM who are scheduled for mastectomy in order to search for axillary micrometastases and occult breast microinvasion.

*J. Surg. Oncol.* 2006;94:426–430. © 2006 Wiley-Liss, Inc.

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