Minimising harm from B3 biopsy—can we avoid surgery?

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1/10/14

Histology Results—regional average

Benign biopsy rates
- Target 1.0/1,000 prevalent, 1.8 incident.
- Very wide variations across the region.
- Exceeded by several Northern and Yorkshire units.
- Mostly result from B1 and B3 core biopsies.
- Can Vacuum assisted large core biopsy help?

Benign vs malignant surgery

No of cancers found per benign biopsy

3-year histology results benign biopsies
Vacuum assisted large core BX
- Can almost eliminate benign biopsies from B1
- Can reduce need for surgical BX from B3
- Can give a higher level of confidence for B2 where imaging findings are suspicious.

What do pathologists mean by B3?
- Benign lesion, but only a small sample—other parts could be atypical or malignant. e.g. papilloma
- Benign lesion, but sometimes found on the edge of a breast cancer. e.g. ADH
- Benign lesion, but associated with a generalised increased risk of malignancy. e.g. ADH and Radial Scar
- Benign, but difficult to differentiate from cancer in small tissue samples. e.g. Radial Scar

B3 Categories
- Atypical Ductal Hyperplasia (A.D.H.)
- Radial Scar
- Papilloma
- Mucocele
- Lobular Carcinoma in Situ (L.C.I.S.)
- Atypical Lobular Hyperplasia (A.L.H.)

ADOPTING LARGE CORE BIOPSY
- First instruments were not vacuum assisted; e.g. MIBB 1999
- Messy
- Used only on prone table
- Sometimes vibrated itself to pieces in the middle of the procedure

Vacuum assisted
- Mammotome adopted 2001
- Initially only stereo, 11g
- Ultrasound 2003-heavy
- New probe lighter, 11g or 8g

En-Cor
- Current favourite as quick and easy to use
- Ultrasound or stereo
- 7 or 11 G
- Automated specimen collection
Newer instruments

- Vacora 2006 10G
- Light and quick
- Stereo only - air introduced when inserting the canula

-Potential for removal of a substantial volume of tissue

Original audit by Sarah Lawson, Consultant Radiographer

- 2004-2007
- B3 biopsy repeated as a VAB
- Mostly 8g Mammotome
- 270 women
- 32 women referred to Surgery
- 30 upgrade
- 2 MDT discordant, or patient wishes.
- 31 malignant

Review Of Current Practice

- Increase in indeterminate small, non-palpable lesions, difficult to target at stereotaxis.
- Increasing Expertise in Mammotome biopsy
- Potential to excise small areas of calcification or architectural distortion completely.
- B3 lesion at Mammotome options - annual f/up
  - RR
  - SURGERY

ADH

ADH evidence?

- Usual upgrade rate: 13.24.5% (Magini 2001 & Liberman 2002)
- No ultrasound used
- Entire Mammographic lesion not removed
- Sneige et al 2003: Surgical upgrade = 7%
- Subclassification: Mild atypia may not need complete excision (Philpots et al 2002)
- MDT meeting: Extent, degree of atypia, discordant findings
- Risk of subsequent malignancy maximum at 12-20 years
- IBIS II Trial
Radial Scar

- Historically surgically excised
- Without atypia Follow-up acceptable (Patterson et al 2004)
- Now RR following MDT discussion
- 1 case in this series upgraded (palpable mass)
- We continue to collect data at 3-yearly screen.

Mammotome- 214 to date

- Following problem Core bx.
- B1 Core biopsies
- Papillomas
- Radial scars
- “atypia”
- As first procedure for difficult lesions

Total mammotome activity

Upgrade at mammotome BX

- 4/29 B1
- 1/43 RADIAL SCAR
- 1/26 ADH
- 1/15 B2
- 1/5 ADH +RS
- 1/4 LCIS
- Surgical biopsy on 12 following benign mammotome

Surgery after mammotome

- 26 /26 expected malignancy +2 benign lesions removed at patient request.
- 2/2 B4- 1 benign ,1 malignant
- 3/31 B3 ADH ,2 benign, 1 malignant
- 4/41 B3 RS,3 benign,1 malignant
- 4/56 B2, all benign
- Total 3 “unexpected” malignant/ 42 surgical procedures/158 mammotomes

Upgrade Rates

- The positive predictive value of a probably benign B3, or probably malignant B4 core biopsy varies a great deal between units within the region.
PPV of B3 on core Bx -3 year Av

Conclusions

Trends demonstrate safe practice providing the criteria below are discussed at MDT:
- Type of B3 lesion
- Degree of atypia
- Extent of Mammotome excision
- Family history

Further research needed:
- Routine recall cases
- Extent of excision
- Analysis of degree of atypia

Follow up

- Yearly mammography for 3 years
- Return to routine screening
- Advised to attend if over 64

Re-audit

- Not yet complete
- 1 grade 1 cancer at site of small radial scar with no atypia
- 1 contralateral cancer in a woman with ADH
- Several deaths from non breast causes.

B3 biopsy audit for steering group

- Preliminary for June 2014


- 79 WOMEN
- 10 UPGRADERS AND BENIGN SECOND BIOPSY EXCLUDED
- 69 WOMEN B3 AT VAB 3 FIRST BIOPSY, 66 SECOND BIOPSY
**PATHOLOGY**
- 16 PAPILLOMA
- 21 RADIAL SCAR WITHOUT ATYPIA
- 4 Radial scar with atypia
- 7 Flat epithelial atypia
- 8 ADH
- 4 LCIS/ALH
- 2 OTHER

**OUTCOME 2010-2011**
- 1 dead- non breast cause
- 13 women have completed 3 year follow up
- 1 local recurrence-papilloma
- No ipsilateral cancers
- 2 contra lateral cancers
- 2 lost to follow up—1OT, 1 bowel cancer

**Outcome 2011-12**
- 19 women 2 yrs follow up
- 0 recurrences
- 1 recalled for BX - radial scar –fat necrosis

**Outcome 2012-13**
- No recurrences or cancers at present

**Positive predictive value for malignancy of B3 core biopsy in Northern and Yorkshire units 2011-12**