IMPROVEMENT OF QUALITY OF THE NATIONAL CANCER SCREENING PROGRAMMES IMPLEMENTATION (CRO SCREENING)
THE ROLE OF FINE NEEDLE ASPIRATION CYTOLOGY FOR THE BREAST CANCER SCREENING AND DIAGNOSIS

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ROLE OF FNAC

• Why talk about cytology (FNAC)?
• Cytology services
  • widespread and readily available in Croatia (hospitals and private clinics)
  • trained cytologists
  • more accessible than NCB
• Use its advantages and be aware of its limitations
ROLE OF FNAC

• Fine needle aspiration cytology (FNAC/FNAB/FNA; hrv. citološka punkcija, citologija)
• A minimally invasive, nonsurgical diagnostic method - nowadays mostly US-guided
  • Used for:
    1. diagnosis of palpable and nonpalpable primary breast lesion
      • malignant (carcinomas)
      • benign lesions
    2. preoperative evaluation of lymph nodes – positive findings prevents the sentinel lymph node biopsy
ROLE OF FNAC

• The most important role of FNAC in the setting of breast cancer screening
  • to confirm the negative diagnosis (completing the triple test)
  • establish the malignant diagnosis (NCB more often)*
  • evaluate axillary lymph nodes status
ADVANTAGES AND LIMITATIONS OF FNAC

• Advantages
  • provides rapid and accurate diagnosis
  • has a cost-effective triage role
  • excellent patient acceptance
  • complications practically non-existant
  • permits performance of ancillary methods when needed
    • hormone receptor analysis
    • flow cytometry etc.
ADVANTAGES AND LIMITATIONS OF FNAC

• Limitations
  • FNA is dependent on the skill of the aspirator and the skill of cytologist
  • the need for experienced cyto(patho)logist to interpret the smears
  • Technical problems can influence the interpretation thus contributing to the rate of false positive and false negative diagnoses
    • Inability to differentiate between ADH and DCIS, DCIS from invasive carcinoma
    • Inability to make definitive malignant diagnosis of some low-grade carcinomas
    • Possibility of false positive diagnosis
FALSE NEGATIVE FNA FINDINGS

- Accuracy of FNA rises if the cytologist is performing the aspiration and immediately assesses the adequacy of aspirates
- False negative rate is principally due to:
  - Technical mistakes (sampling errors and slide preparation errors)
- Some malignant lesion can present diagnostic difficulty
  - Small lesions (<1 cm)
  - Large lesions due to the extensive necrosis or fibrosis
  - Some carcinomas can be difficult to diagnose (recognize)
    - Papillary, tubular, lobular, mucinous – bland malignant features, scant cellularity
FALSE POSITIVE FNA FINDINGS

- Should be avoided by strict abidance of cytologic criteria for malignancy
- FP is due to the interpretation error !!!!
- Some lesions can present difficulty
  - Proliferative lesions with cytologic atypia
  - Inflammatory and changes caused by therapy can be overdiagnosed
  - Better use C3 and C4 category
FNA REPORTS

- Every cytological report should contain
  - General data
  - Short description of cytological findings
  - Diagnosis
  - Category
- Categorization of cytological diagnoses should help to unify reports, make decision process easier and to simplify statistical analysis
FNA REPORTS

- As in radiological and histological reports, there should be five main categories
  - C1 – nonsatisfactory
  - C2 – benign
  - C3 – atypia
  - C4 – suspicious for malignancy
  - C5 – malignant
CATEGORY C1

- **Unsatisfactory**
- Subjective category
  - Depends on the experience both of the person who performs FNA and the cytologists
- Main reasons
  - Scant cellularity (not clearly defined term)
  - Technical errors due to the sampling, smear preparation and identification of the samples
CATEGORY C2

• **Benign**

• Adequate samples, representative of the targeted lesion – correlation with radiology

• Includes:
  • definitive benign diagnoses (confirms benign lesions)
    • fibroadenoma, fibrocystic changes, cysts,
    • fat necrosis, mastitis, abscesses,
    • lactating adenoma, lipoma,
    • lymph nodes, etc.
CATEGORY C3

- atypical
- not clearly defined cytological criteria of atypia
- category that depends on experience of cytologists
- aspirates have overall benign look but display some variation of nuclear size and shape, discohesion, and some other worrisome features
- Proliferative breast lesion can display some degree of atypia
  - Ductal epithelial hyperplasia, fibroadenomas, papilloma's
  - Sclerosing adenosis
  - Hyperplastic changes during pregnancy and lactation
CATEGORY C4

- **Suspicious (for malignancy)**
- The smear looks almost malignant but the cytologist cannot give the definitive diagnosis of malignancy mostly due to the:
  - hypocellularity
  - damaged cells (due to the pressure while making the smears)
  - in otherwise benign smears several malignant looking cells are present
- Changes are more prominent than in the category C3
CATEGOR Y C5

• **Malignant**
  
  • Adequate specimen with clearly malignant cytological features present (more than one criteria for malignancy)
  
  • The diagnosis is easily made

• Categories C3 and C4 need to be further evaluated before making the treatment or surveillance decision

• Usually the team decision
CASE REPORT– MULTIDISCIPLINARY APPROACH

• 43-year old patient was referred from private clinic to our hospital’s breast center unit to further evaluate a lesion of left breast

• The lesion 1 cm in size was found on US exam and FNA report of the lesion was fibroadenoma with atypia

• NCB was done

• Histology report: B2, without evidence of biphasic lesion (no evidence of fibroadenoma)

• Follow up US exam showed enlarged (2x1,5 cm), bilobular lesion with slightly irregular border

• FNA of two different parts of the lesion was done
CASE REPORT – MULTIDISCIPLINARY APPROACH

• Cytology report:
  • Fibroadenoma with prominent atypia, category C4!

• Multidisciplinary team decision:
  • Excision of the lesion with the prior labeling with the wire

• We are waiting for final histology report
THANK YOU!


