Croatia and the EU:
Together
Against Cancer

IMPROVEMENT OF QUALITY OF THE NATIONAL CANCER SCREENING PROGRAMMES IMPLEMENTATION (CRO SCREENING)

MINISTRY OF HEALTH OF THE REPUBLIC OF LITHUANIA

NCI

LITHUANIAN UNIVERSITY OF HEALTH SCIENCES

CPVA

NIJZ Nacionalni institut za javno zdravje

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HZJZ

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THE ROLE OF FINE NEEDLE ASPIRATION CYTOLOGY FOR THE BREAST CANCER SCREENING AND DIAGNOSIS

Tajana Štoos-Veić, MD, PhD

KB Dubrava

ROLE OF FNAC

- Why talk about cytology (FNAC)?
- Cytology services
  - widespread and readily available in Croatia (hospitals and private clinics)
  - trained cytologists
  - more accesible 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 asses 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 can not 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

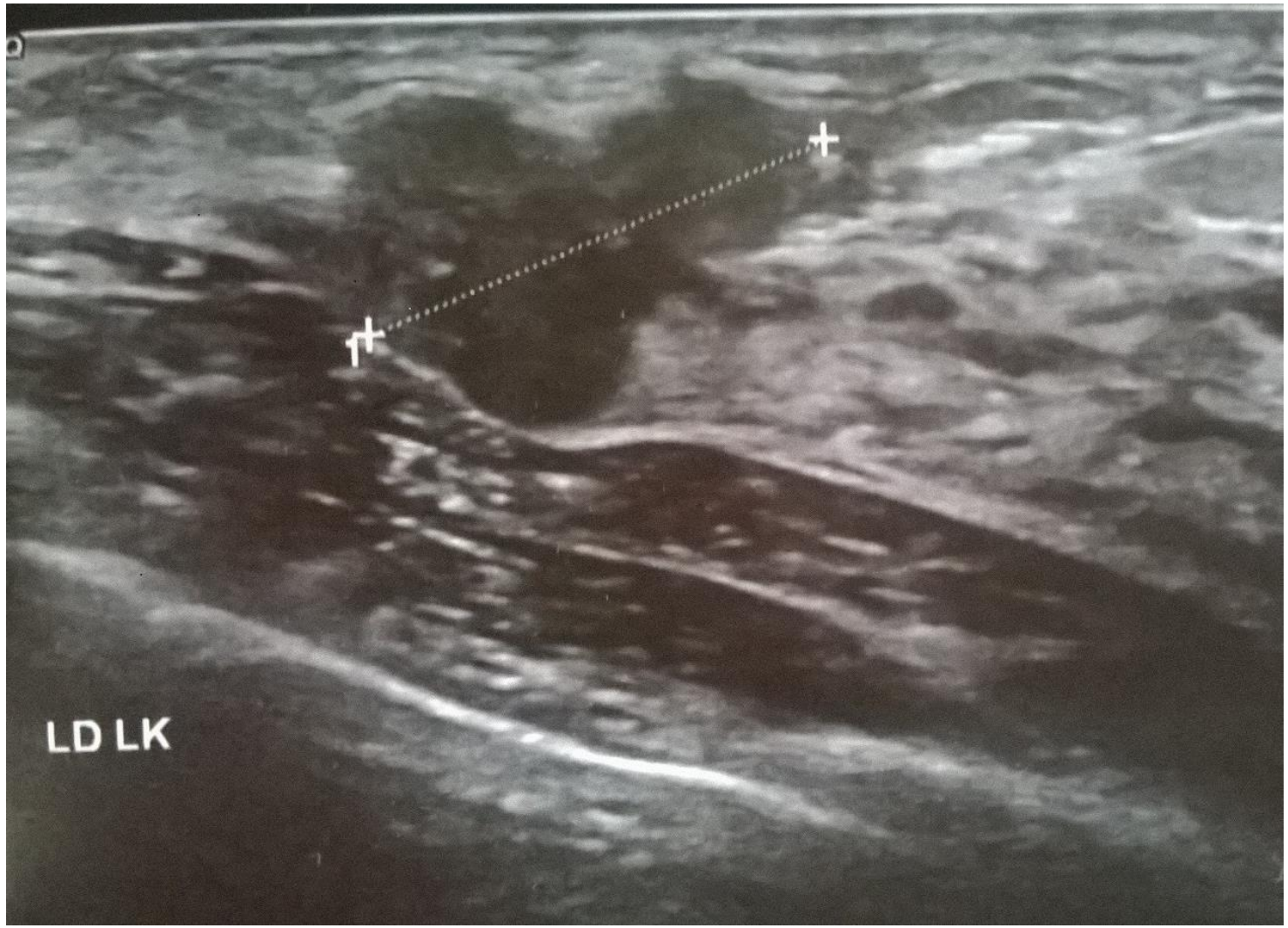
CATEGORY C5

- **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 APROACH

- 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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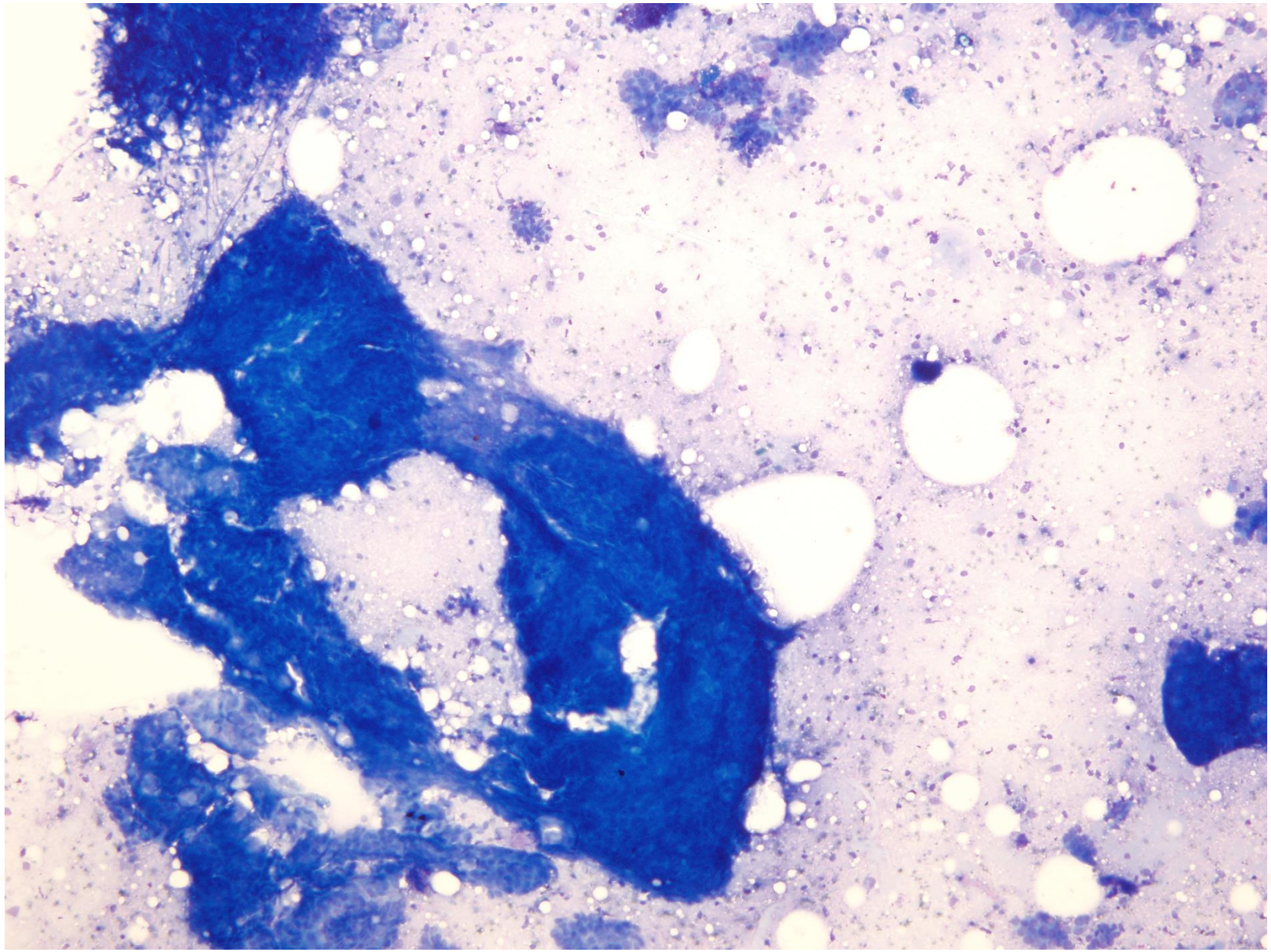

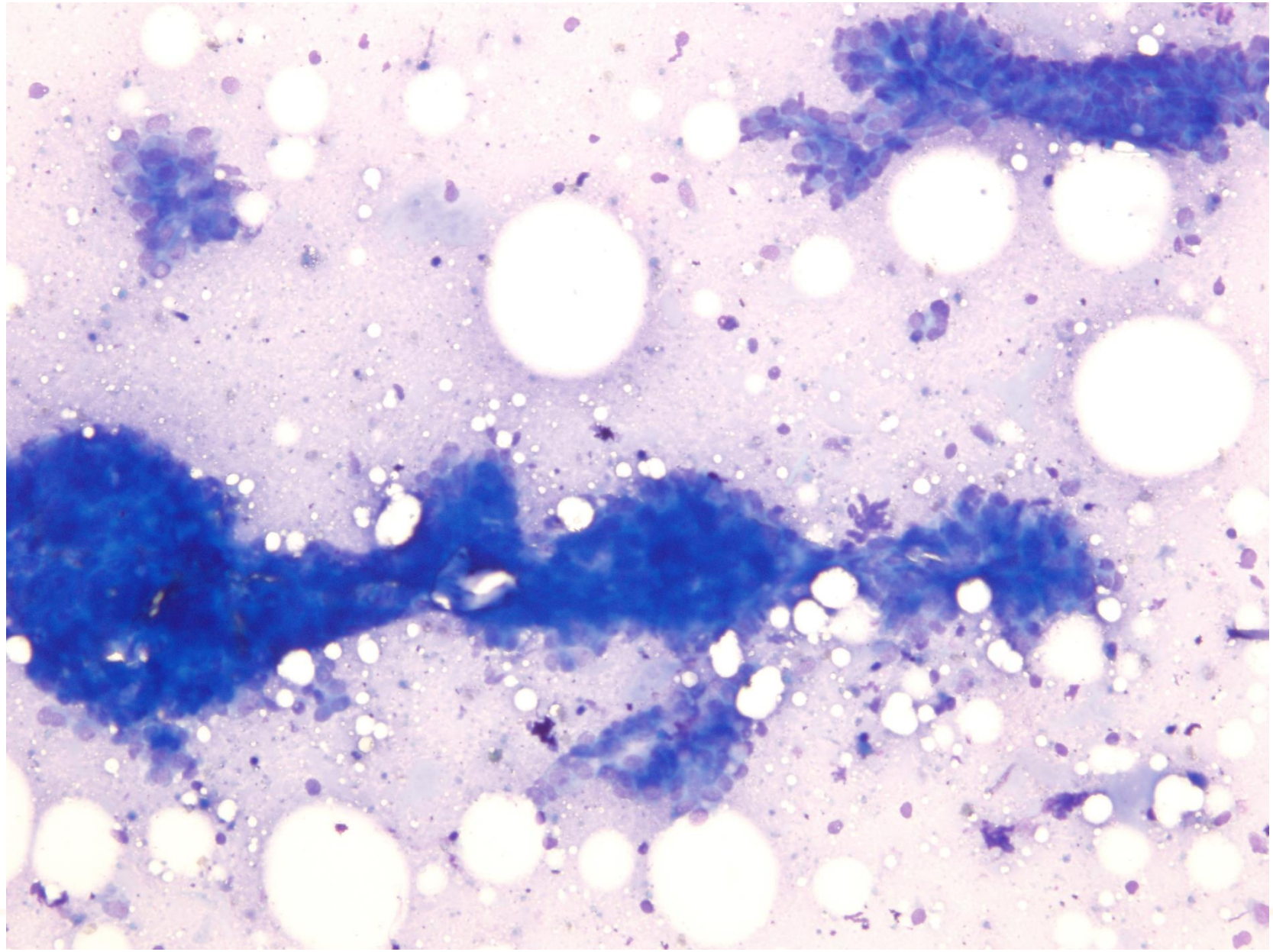

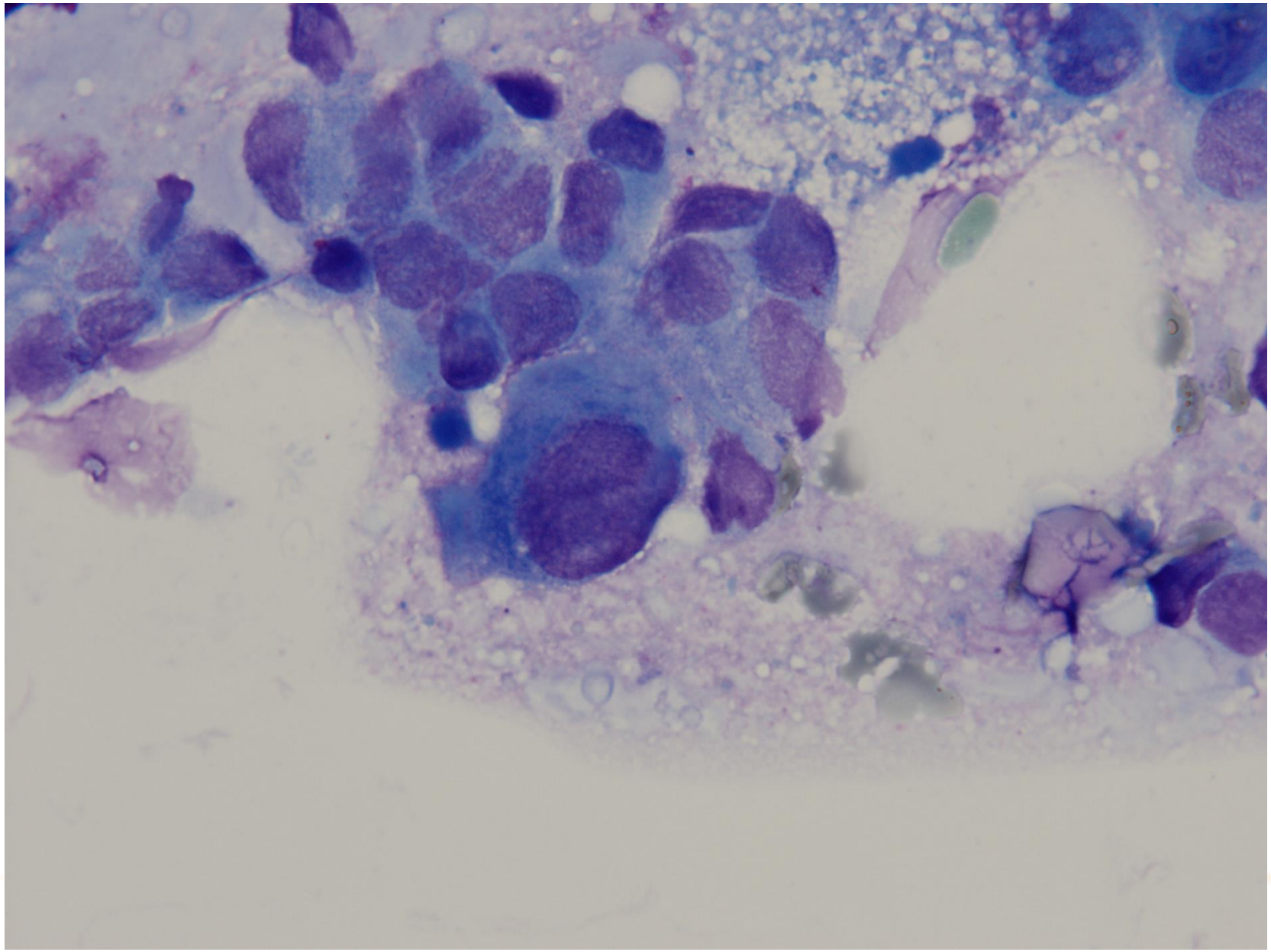

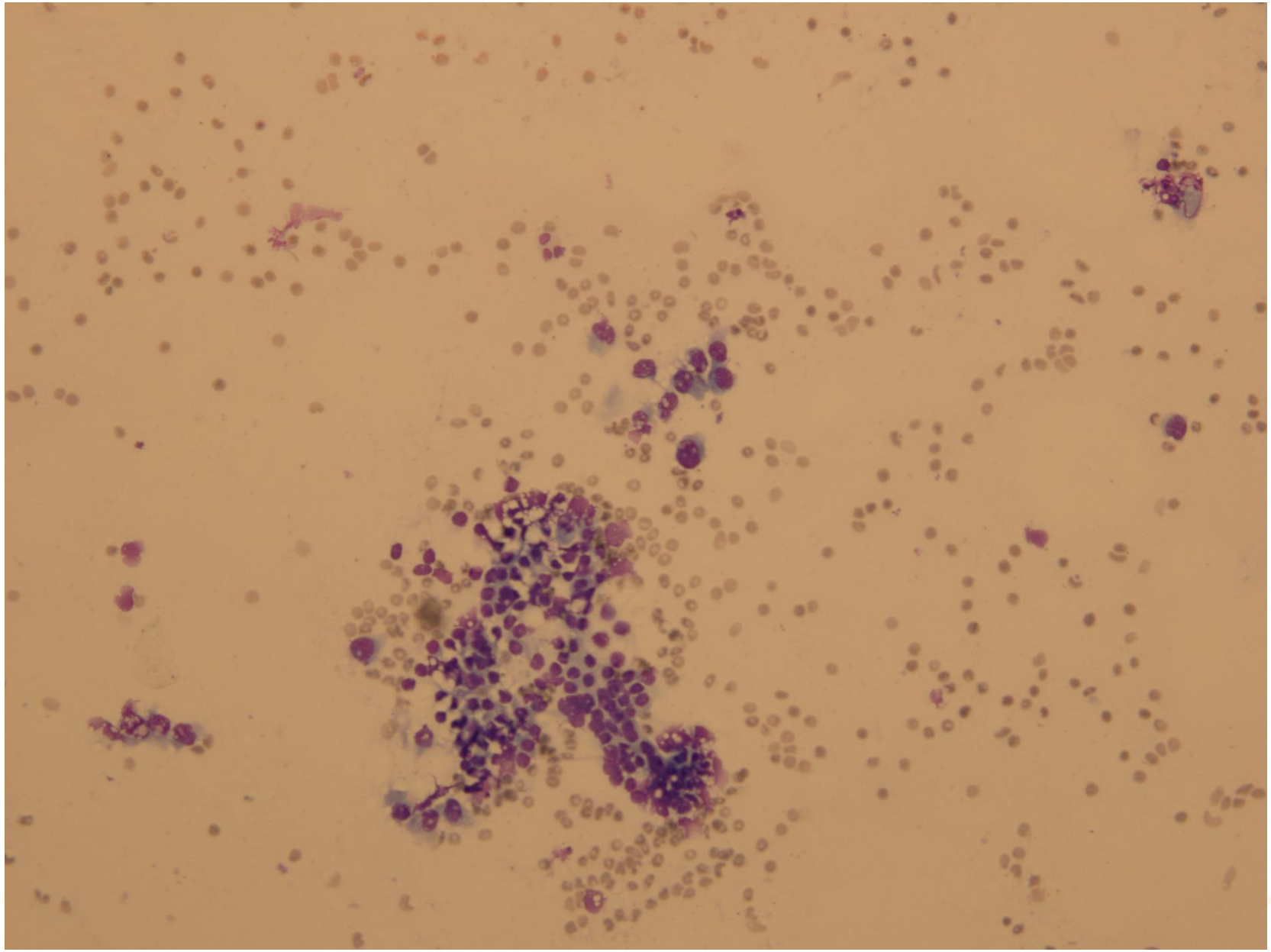

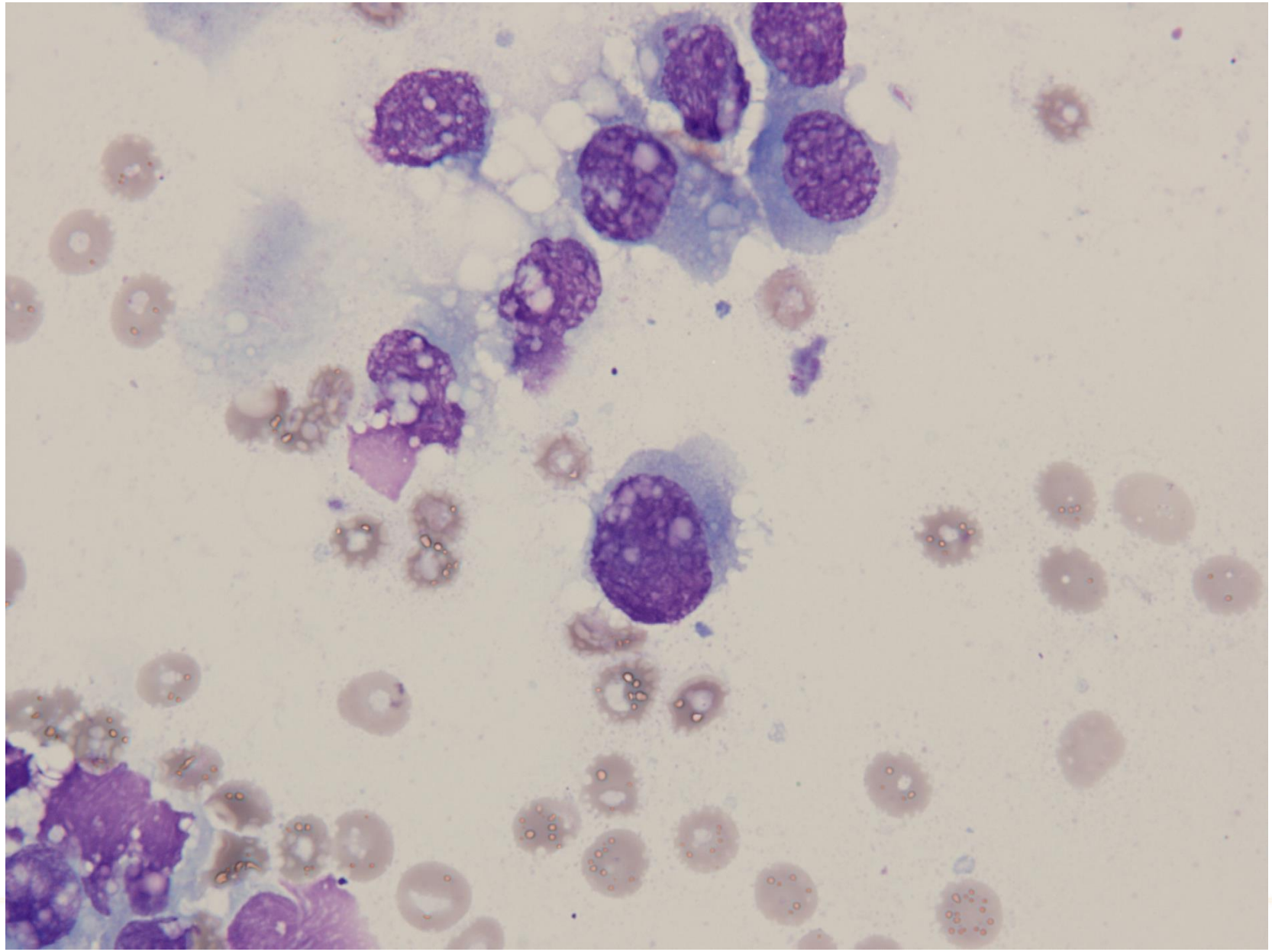

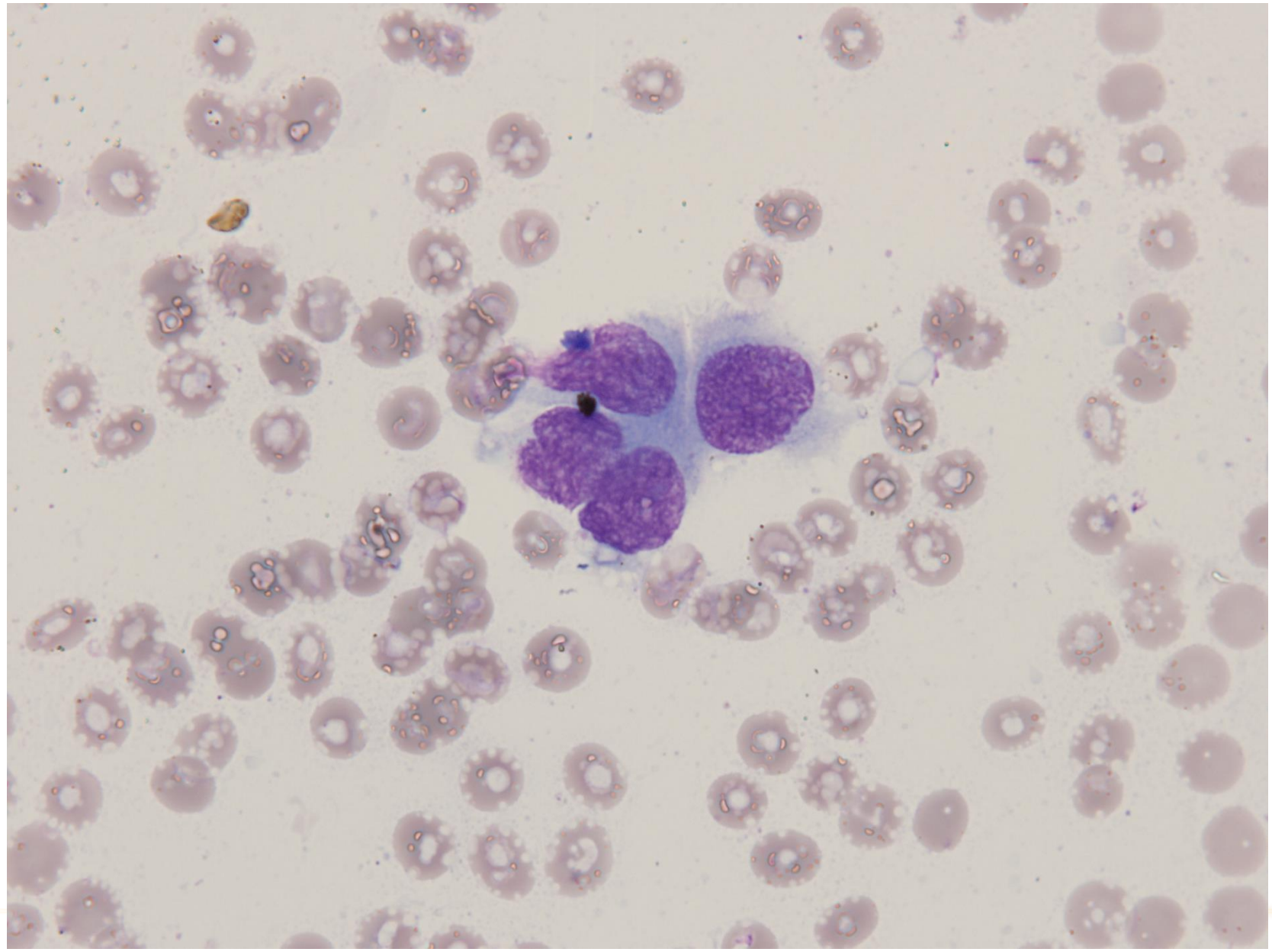

CASE REPORT– MULTIDISCIPLINARY APROACH

- Cytology report:
- Fibroadenoma with prominent atypia, **category C4** !
- Multidisciplinary team decision:
- Excision of the lesion with the prior labeling with the wire

- We are wating for final histology report

THANK YOU!

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