

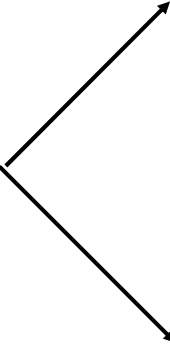


Intra - operative consultation in arthroplasty revision surgery

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REVISION ARTHROPLASTY

Frozen is crucial to decide type of surgery



Septic mobilisation - (Infected prosthesis) - Cement spacer with antibiotics followed by definitive prosthesis later (2 step surgery)

Aseptic mobilisation - 1 step sx - definitive prosthesis

Tests such as ESR, CRP and Synovial fluid leukocyte count and culture, scintigraphy etc can be useful to identify infection but have low sensitivity and specificity

Musculoskeletal infection society (MSIS) criteria, 2011

(Feldman's criteria)

Positive for for Periprosthetic joint infection (PJI) if

**>5 neutrophils / high power field are seen in > 5 distinct
microscopic fields**

Do's and Don'ts

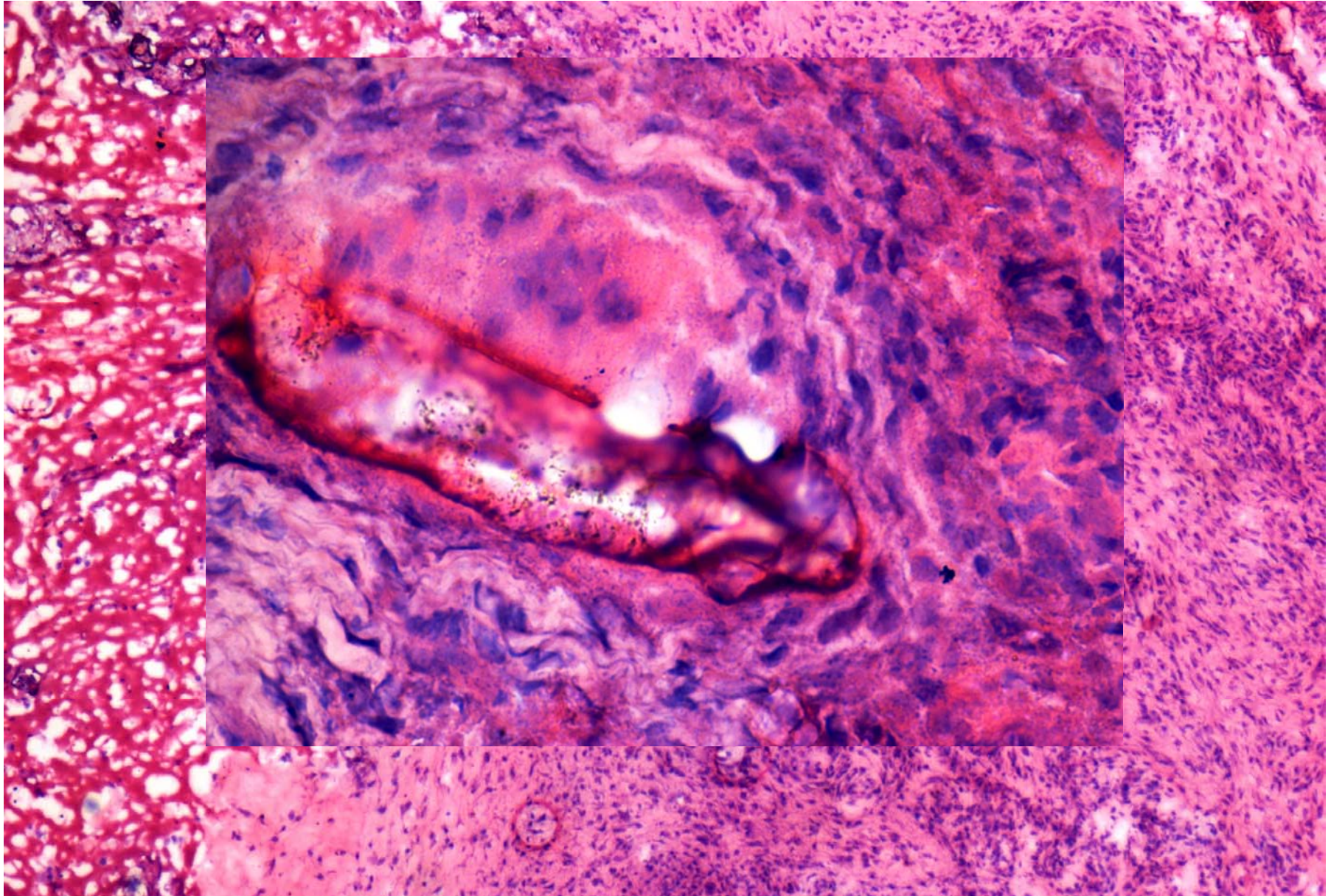
- At least 2/3 samples
- Do choose tissue that looks pink-tan and not white (avoid dense fibrous tissue, fibrin)
- Do count in the most cellular areas in the tissue, don't count neutrophils in the surface fibrin
- Include only intact PMNs, avoid debris

#1

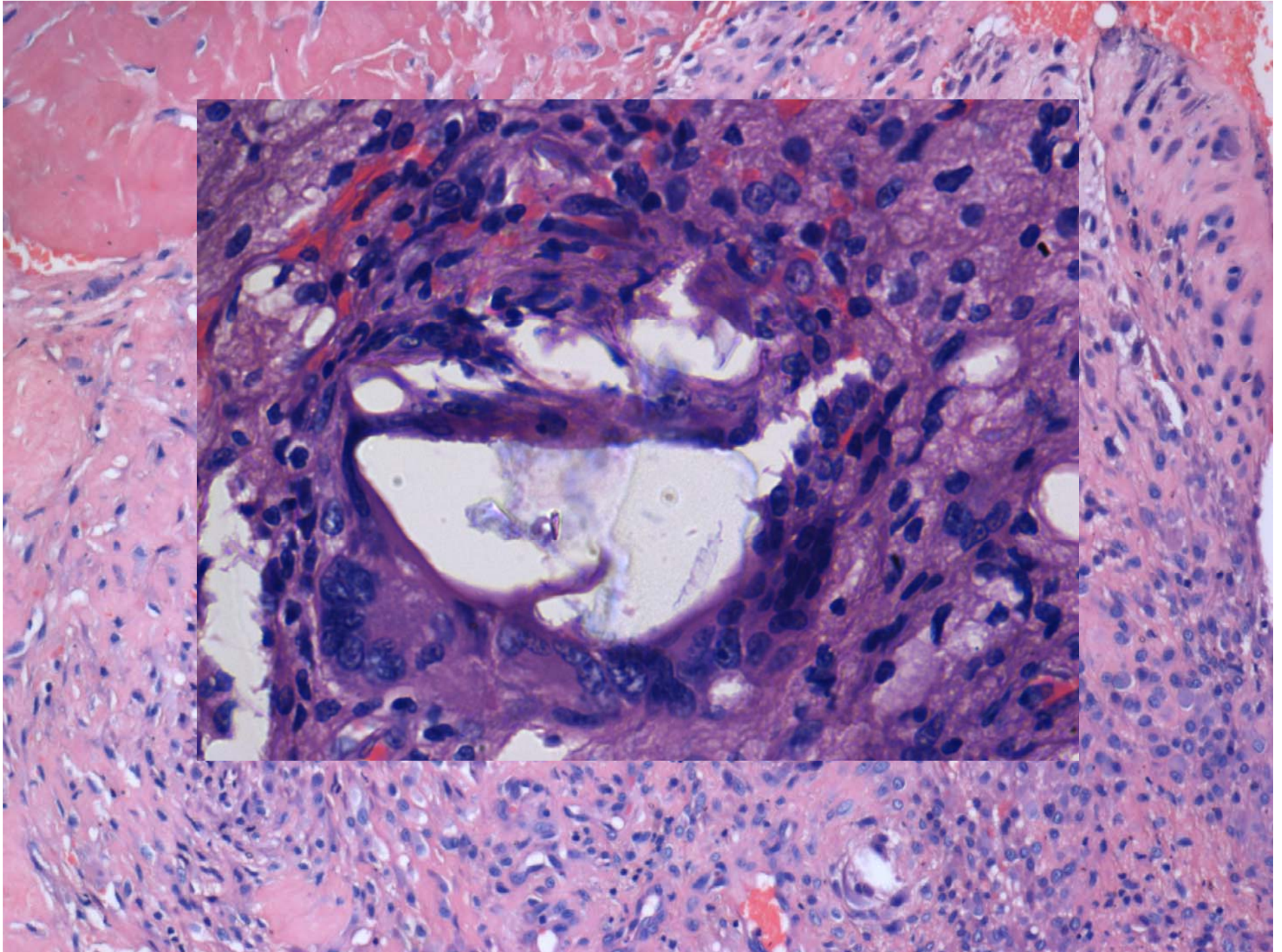
- 59 year old housewife, H/o left total knee replacement in 2011
- She had a fall 6 months ago followed by pain and difficulty in walking since 2-3 months
- Xray - loosening of prosthesis
- Hb, CBC WNL, CRP - 2.5 mg/L

FROZEN

**WEAR AND TEAR DEBRIS WITH FOREIGN BODY GIANT CELL REACTION
NEGATIVE FOR PJI**



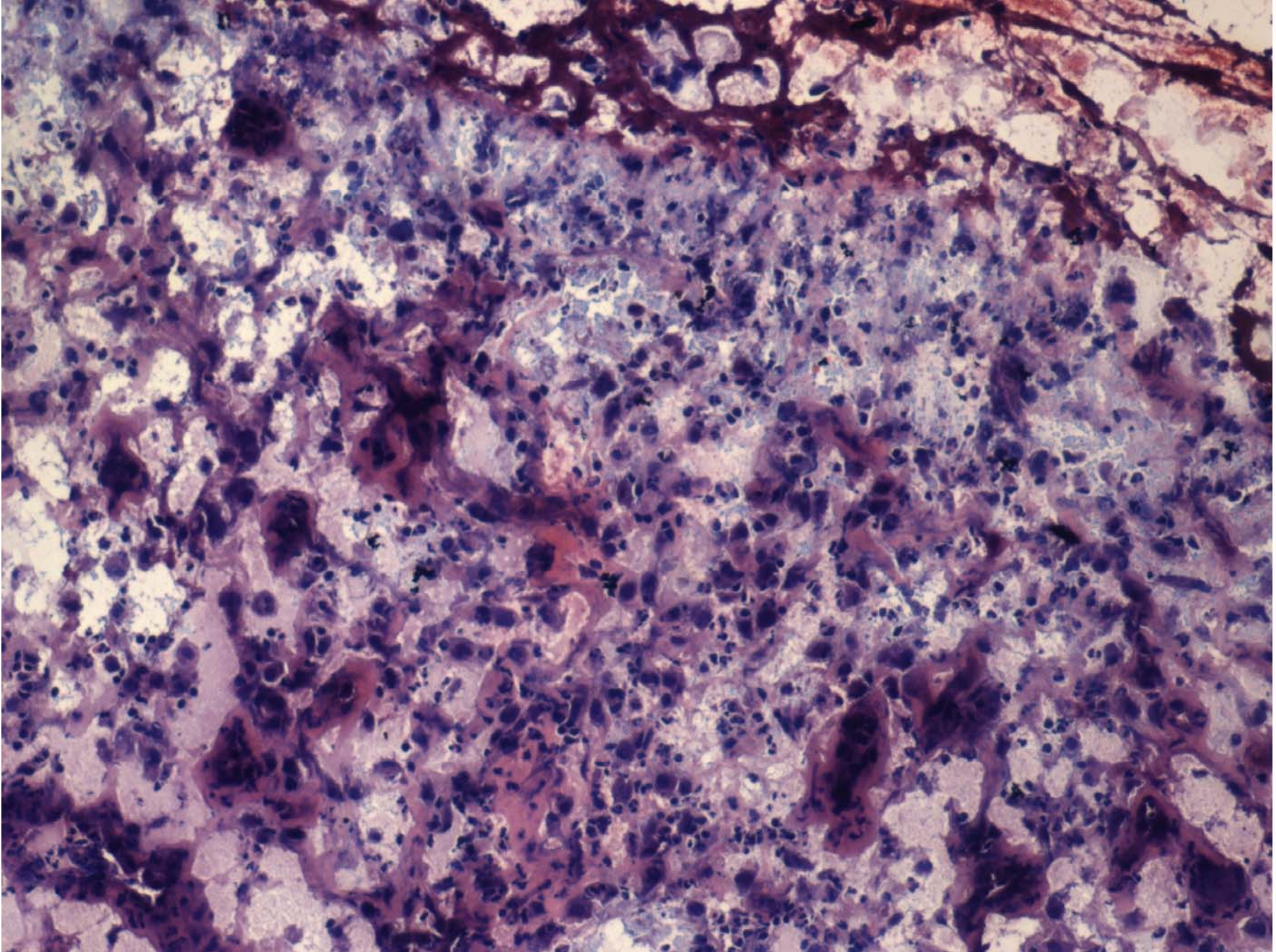
PARAFFIN

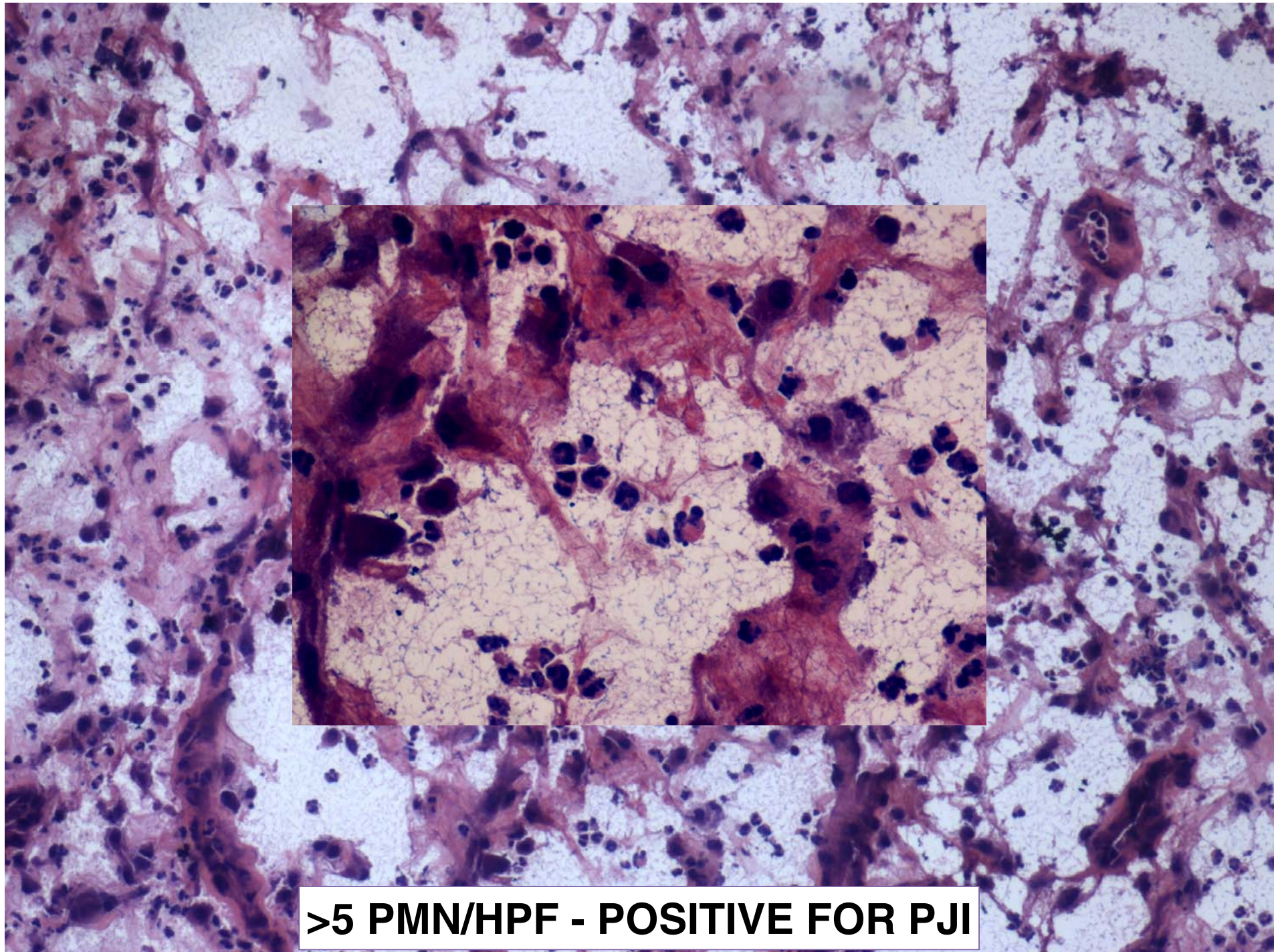


#2

- 55 year old cook from Lucknow
- Diabetic since many years with poor compliance
- H/O right hip replacement in 2013
- Pain and difficulty in walking since 6 months
- Hb, CBC WNL, FBS - 234mg/dl, CRP - elevated

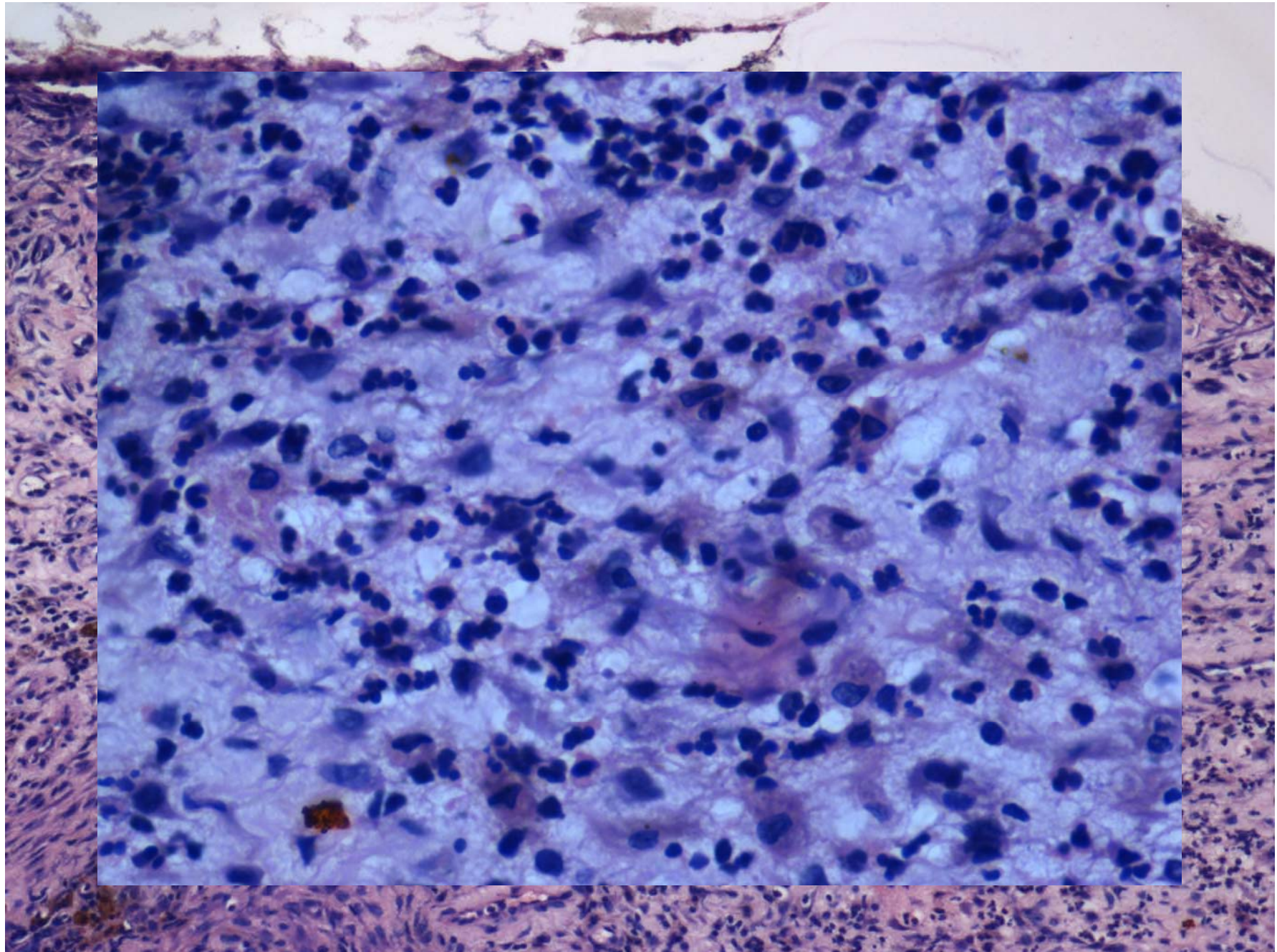
FROZEN





>5 PMN/HPF - POSITIVE FOR PJI

PARAFFIN SECTION



Neutrophil count for PJI is not perfect...

- Variable sensitivity (25-100%), Good PPV but poorer NPV
- Coagulase negative staphylococci, P acnes - False negatives (low sensitivity)
- Low sensitivity in shoulder or elbow replacements
- High rate of false positives- Rheumatoid arthritis, recent periprosthetic fracture etc

Can we improve sensitivity?

Review Article

Histopathology in Periprosthetic Joint Infection: When Will the Morphomolecular Diagnosis Be a Reality?

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- **CD15 staining on paraffin sections (>22 pmns/10hpf)**
- **Chloracetate esterase on Frozen/Paraffin**
- **Biomarkers in synovial fluid**
- **TLR in tissues**



THANK YOU