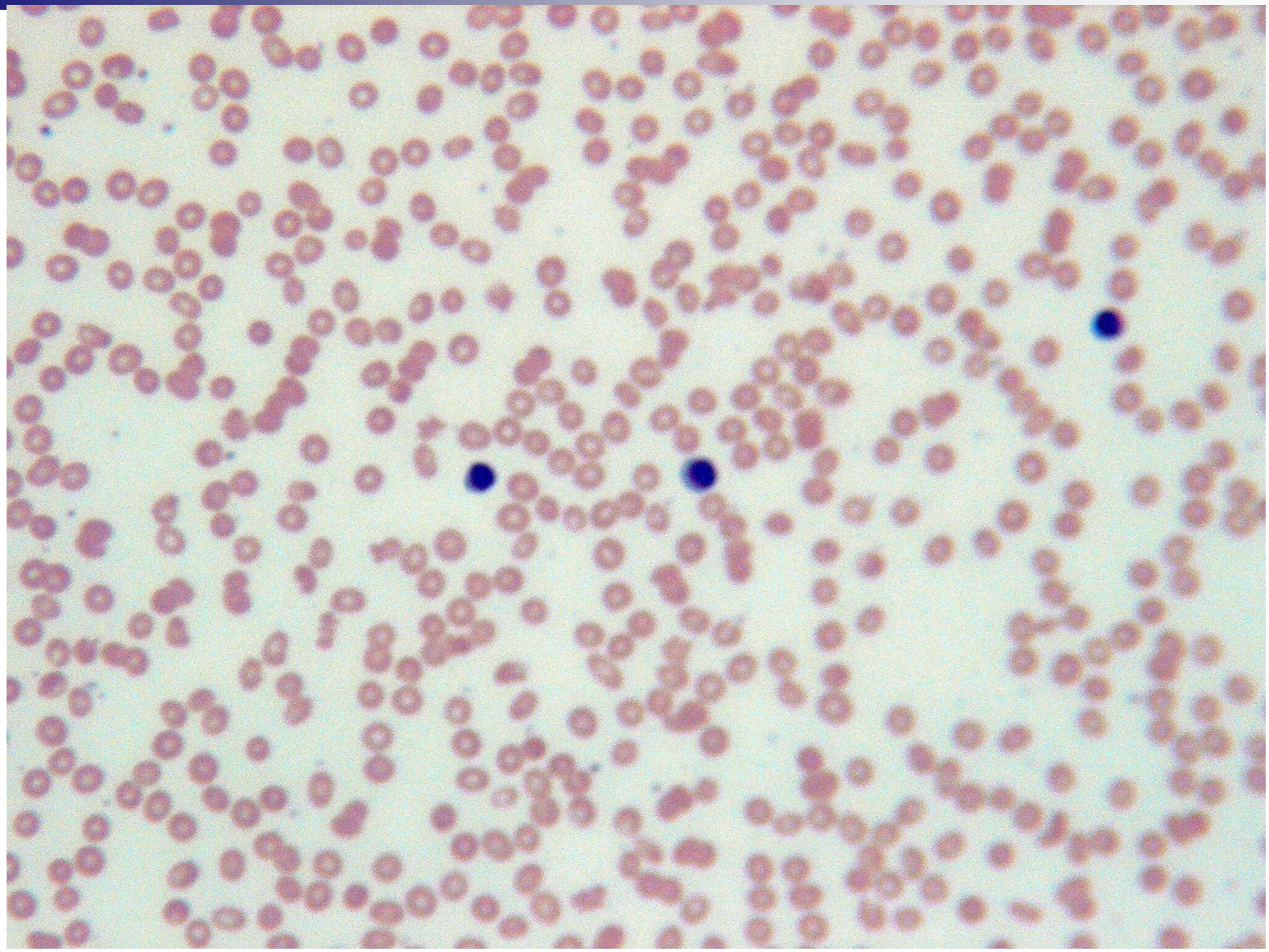
Hematology Case Conference

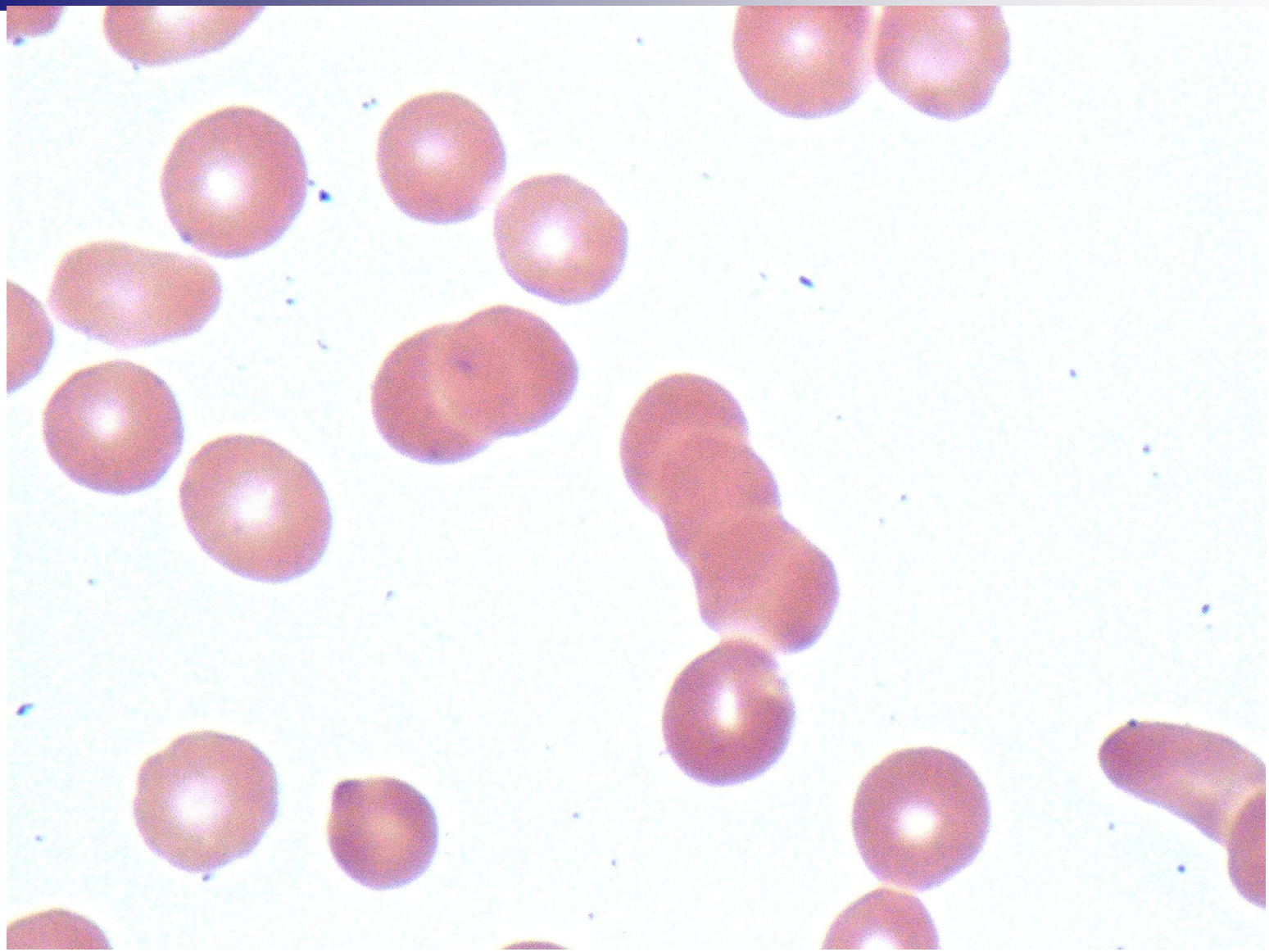
2/3/04

Bone Marrow Case
Patient: Turxx Sulxxx

- 71 year old male with recent weight loss (50 lbs in 3 months), lytic lesions (humeri, thoracic, lumbar spine), and renal insufficiency
- WBC= 6.1, Hgb=7.8, Plt=235, Retic 0.6%, MCV 92.3
  seg 37, lymph 48, mono 10, eos 6
- Beta-2 microglobulin: 12,095 ng/ml (ref 1030-2320)



Peripheral blood: rouleaux formation



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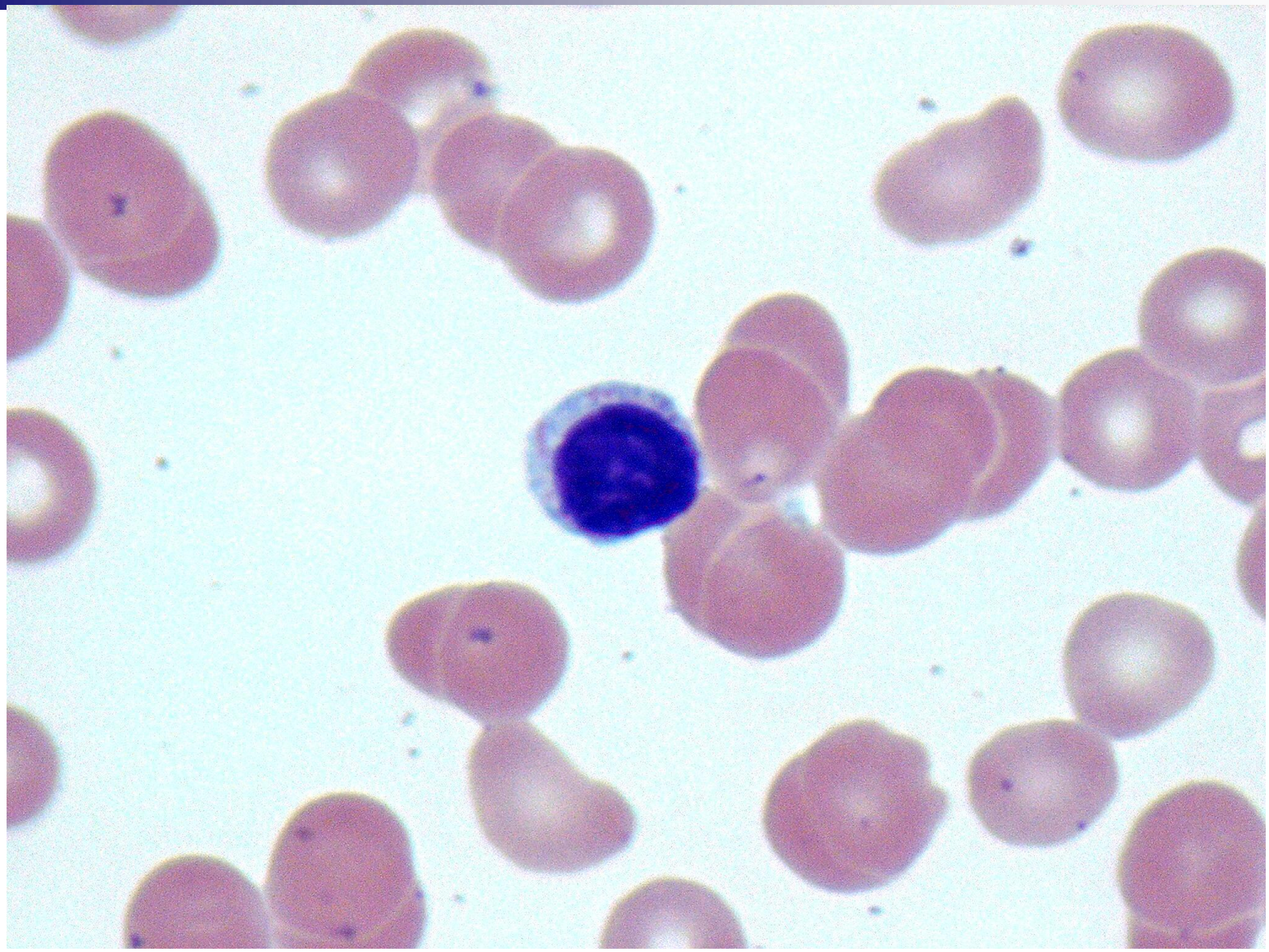
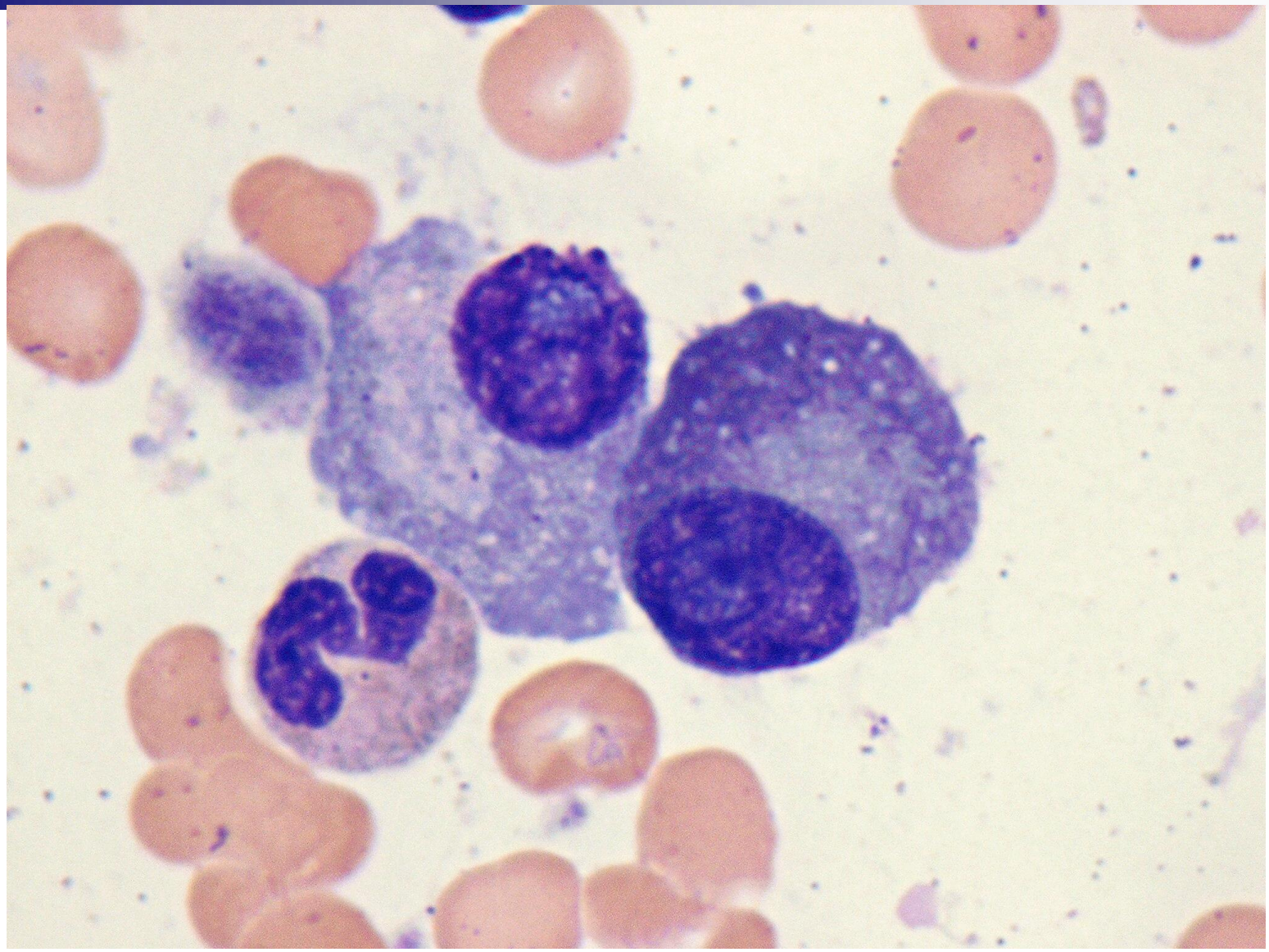
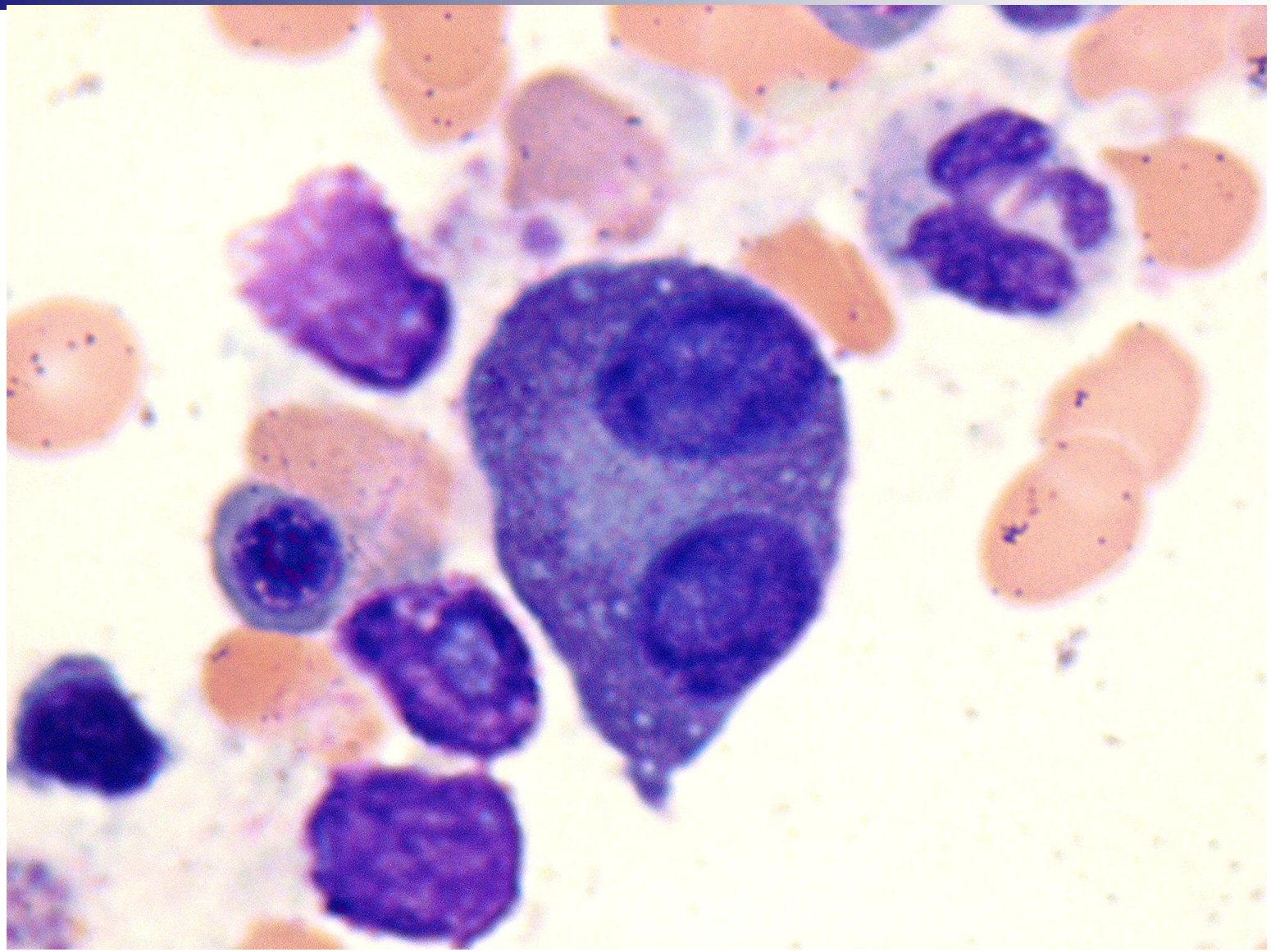


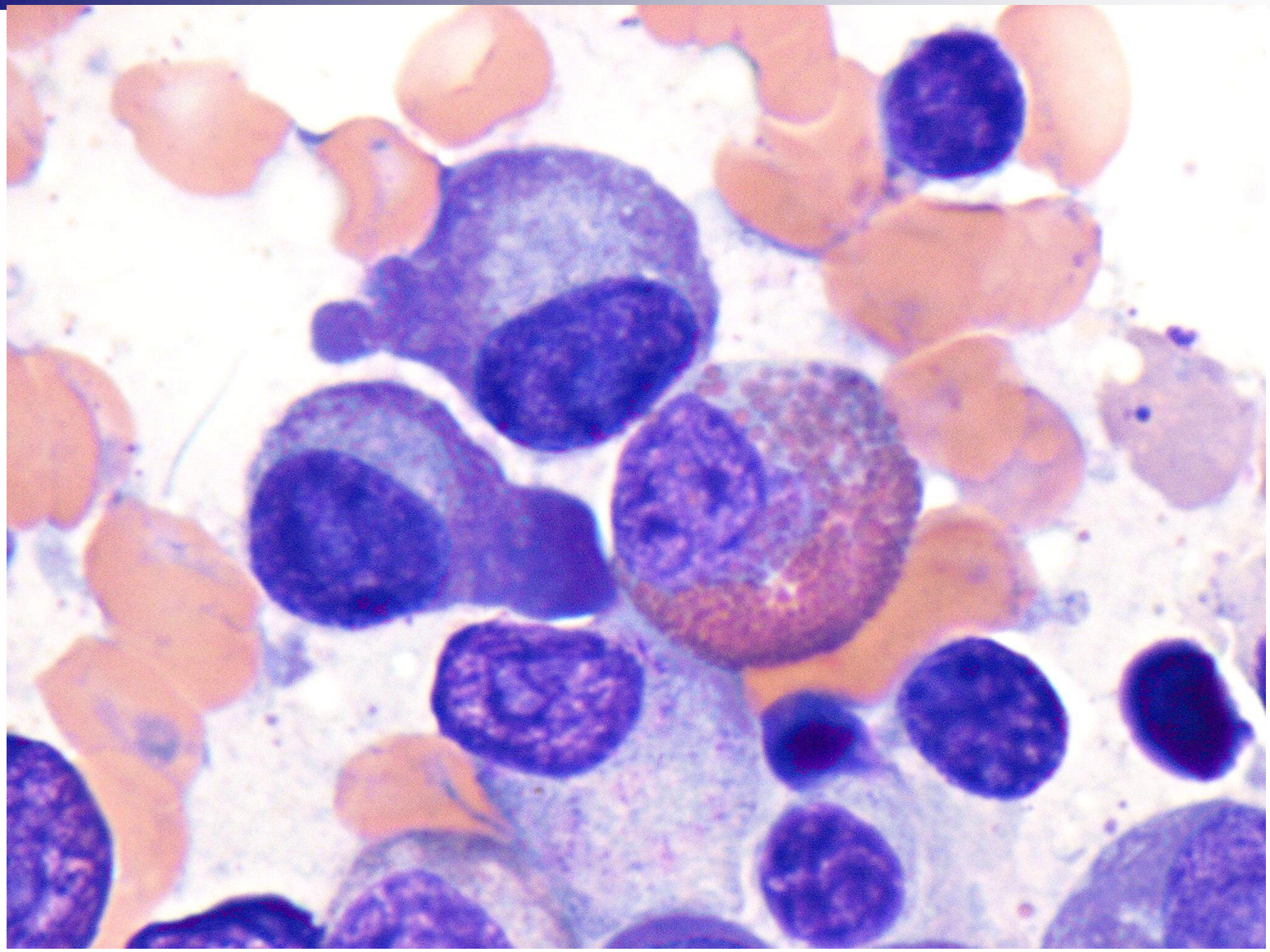
Peripheral blood: relative lymphocytosis (48%)



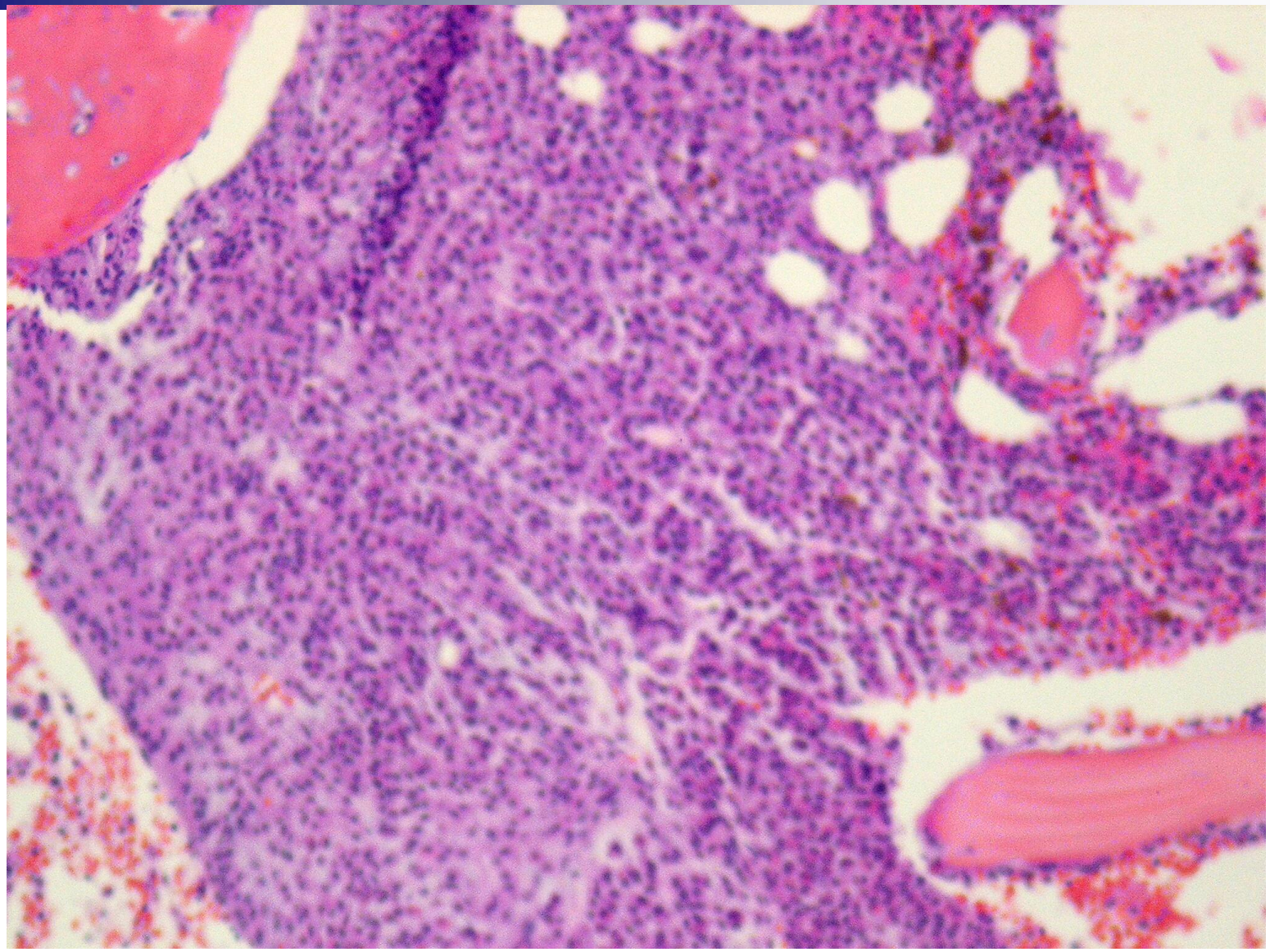
Bone marrow aspirate: 20%plasma cells



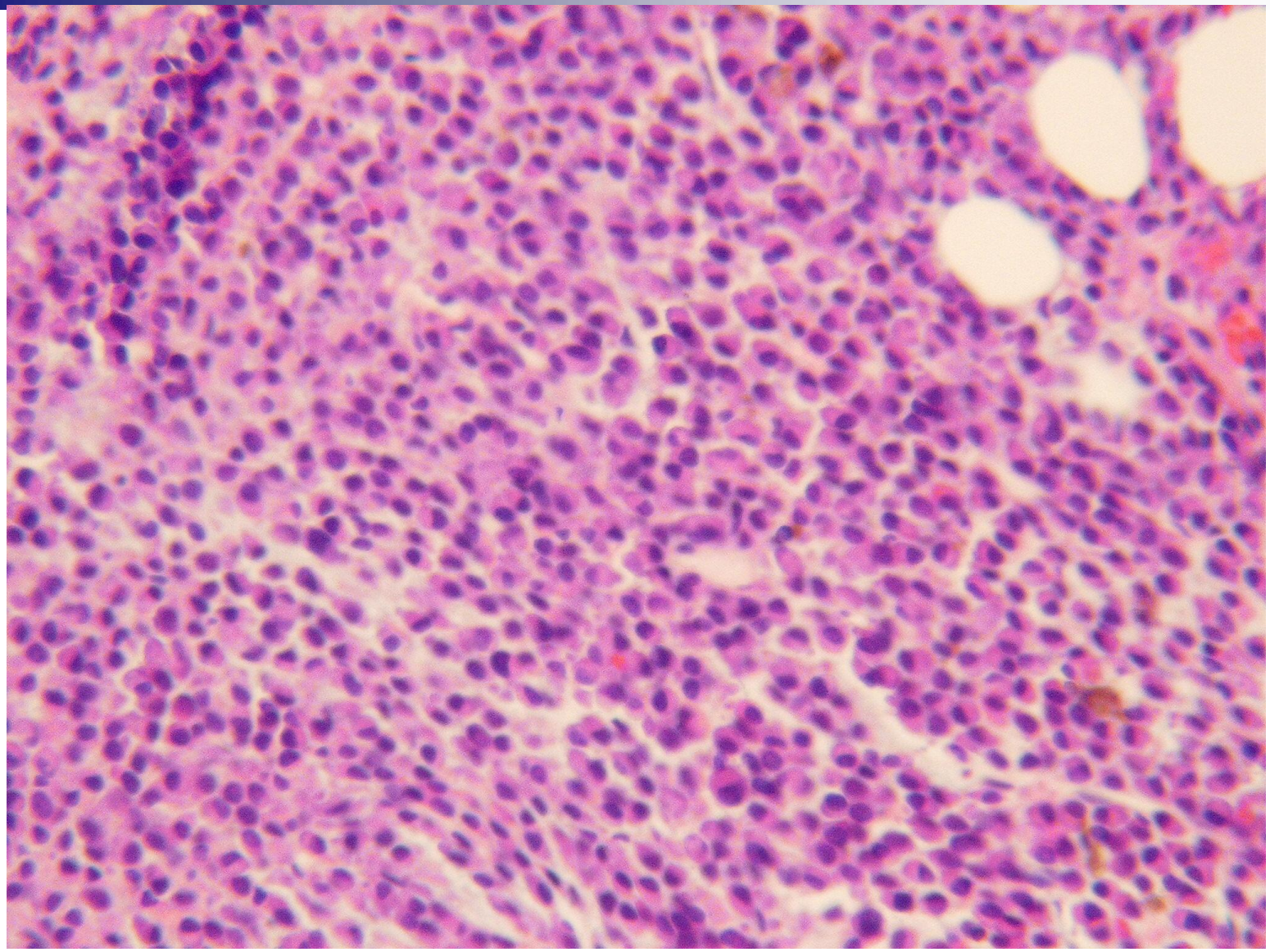
Bone marrow aspirate, cont’d



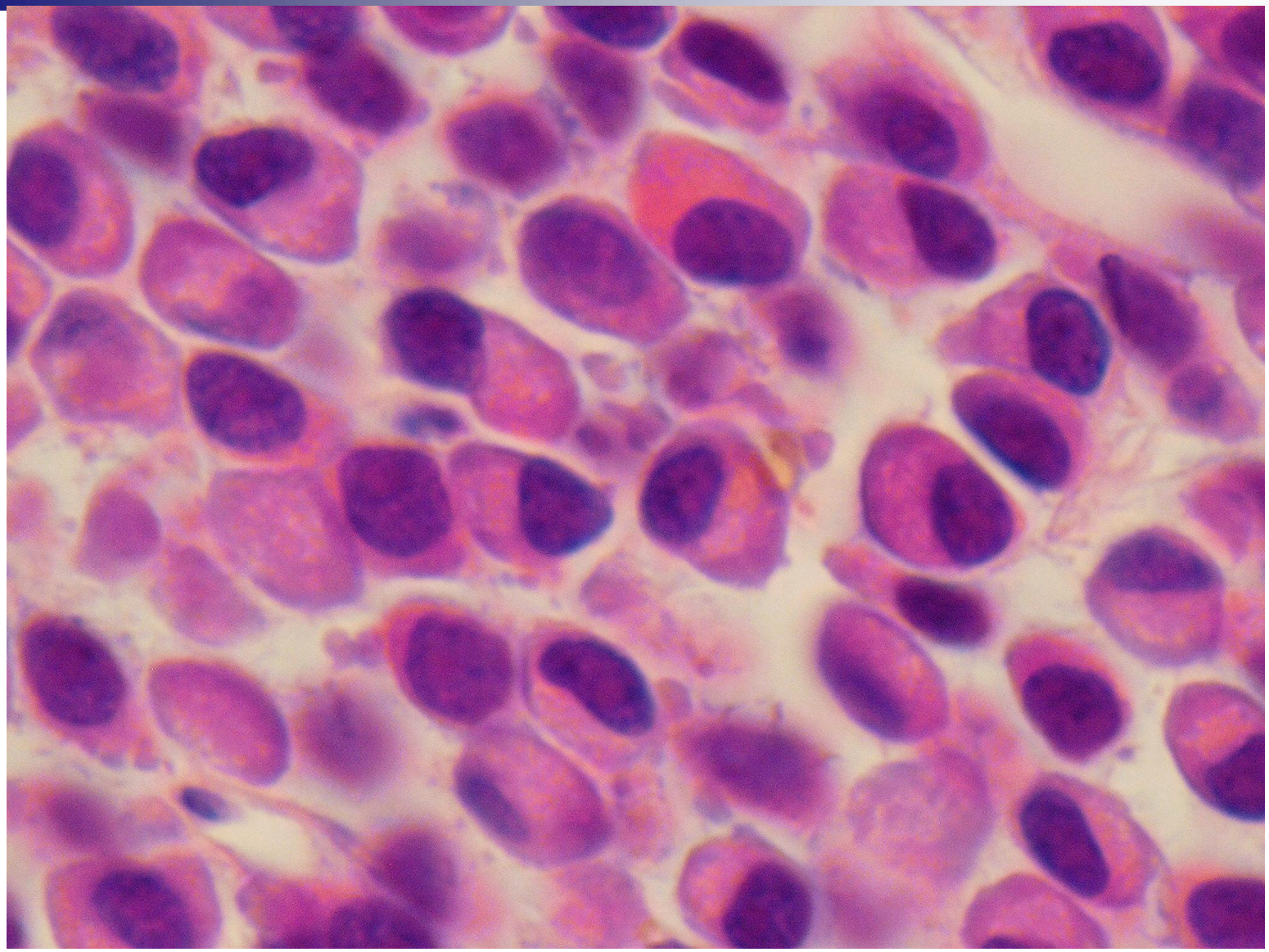
Bone marrow aspirate, cont’d



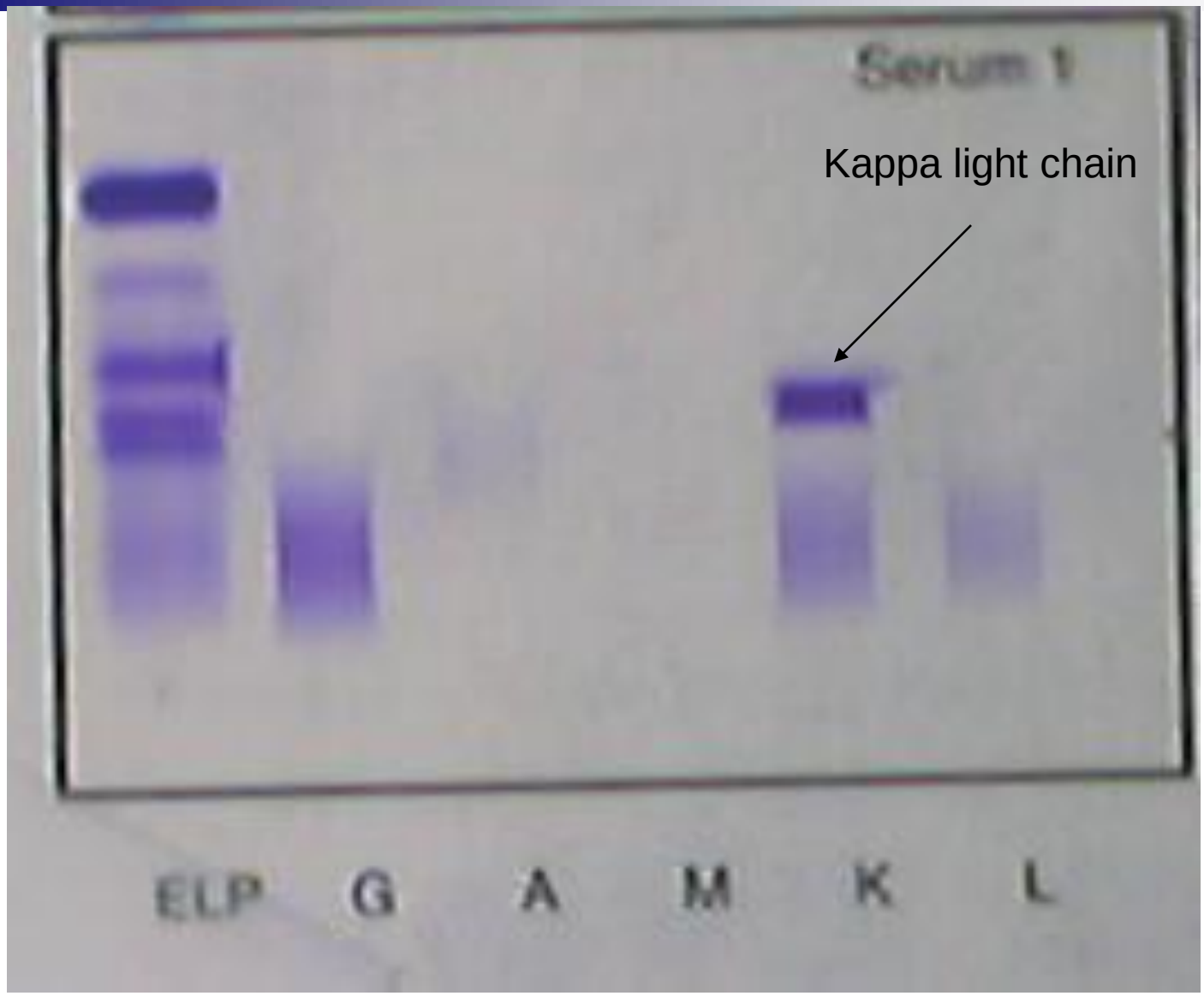
Bone marrow biopsy: 60-90% cellularity



Bone marrow biopsy, cont'd



Bone marrow biopsy, cont'd



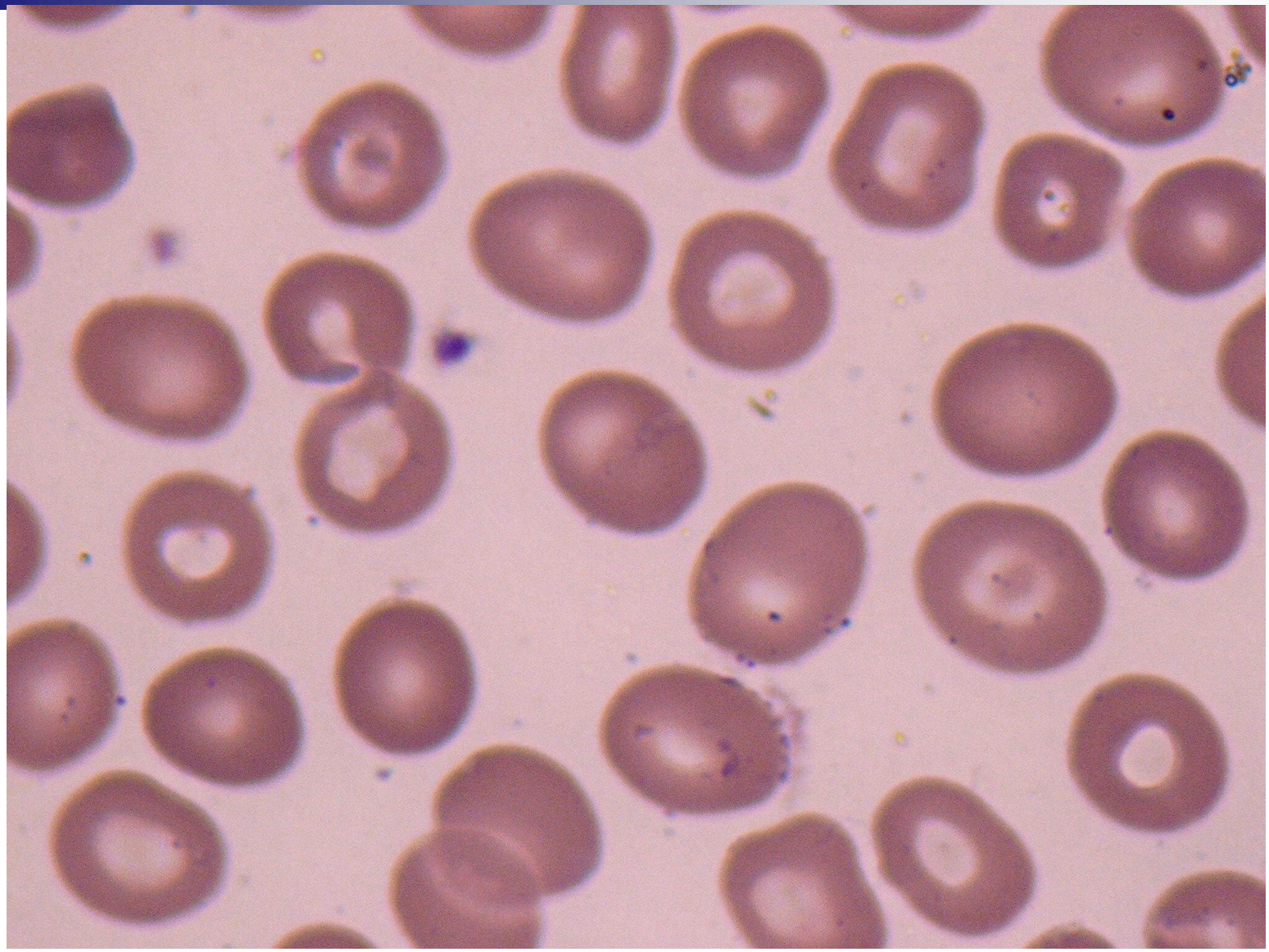
Serum protein immunofixation

Diagnosis

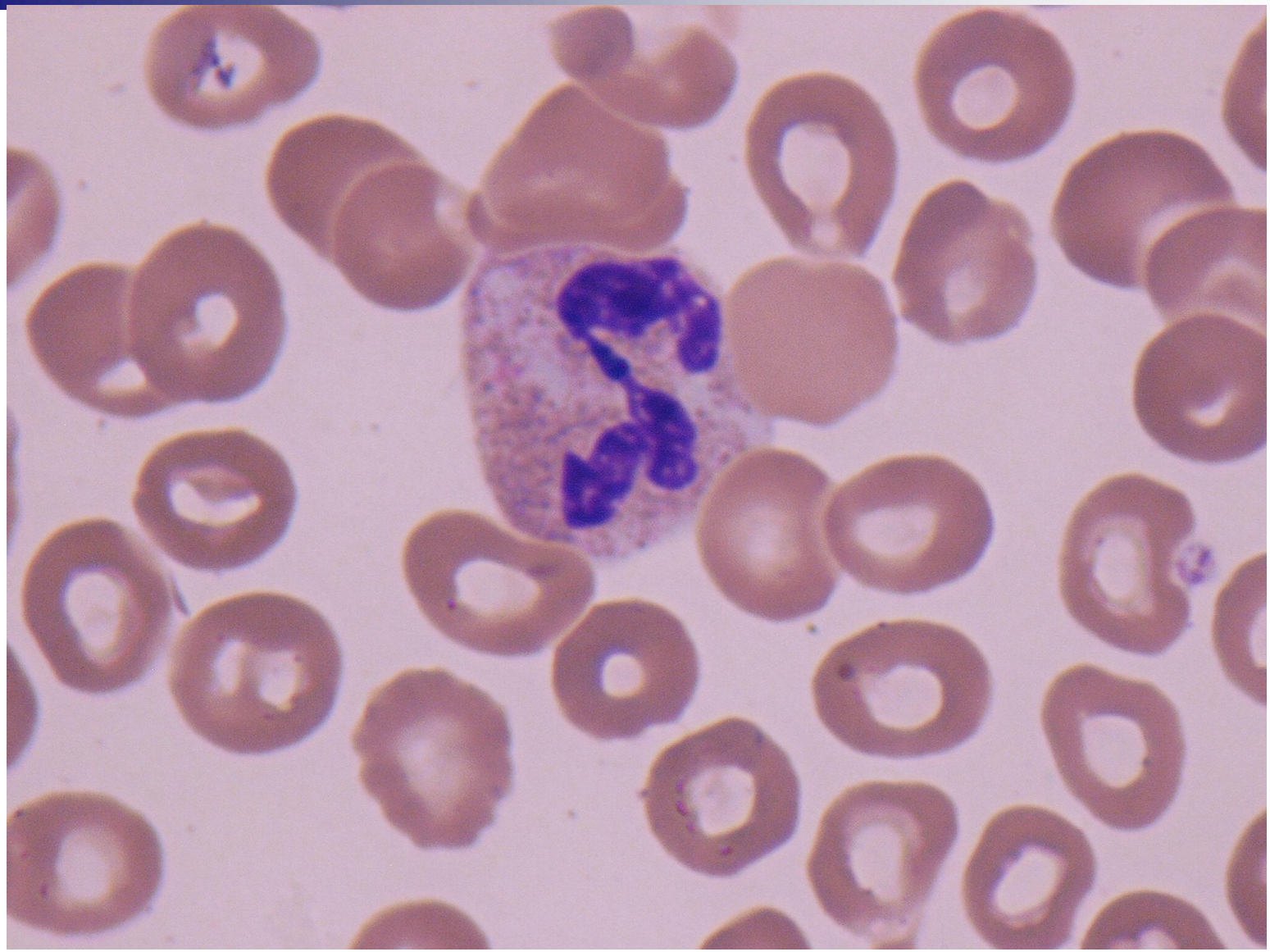
- Plasma cell myeloma, free Kappa light chain
- Monoclonal light chain disease:
  -Uncommon disease (less than 18% of myeloma)
  -Associated with either MGUS or overt myeloma
  -Median age: 56 y/o
  -M:F=1:1
  -Deposition of light chains: kidneys, liver, heart-> organ dysfunction
  -Prevalence of kappa light chain (80%)
  -Poor prognosis: fatal outcome 1-2 years

Bone Marrow Case
Patient: Gerxx Fosxxx

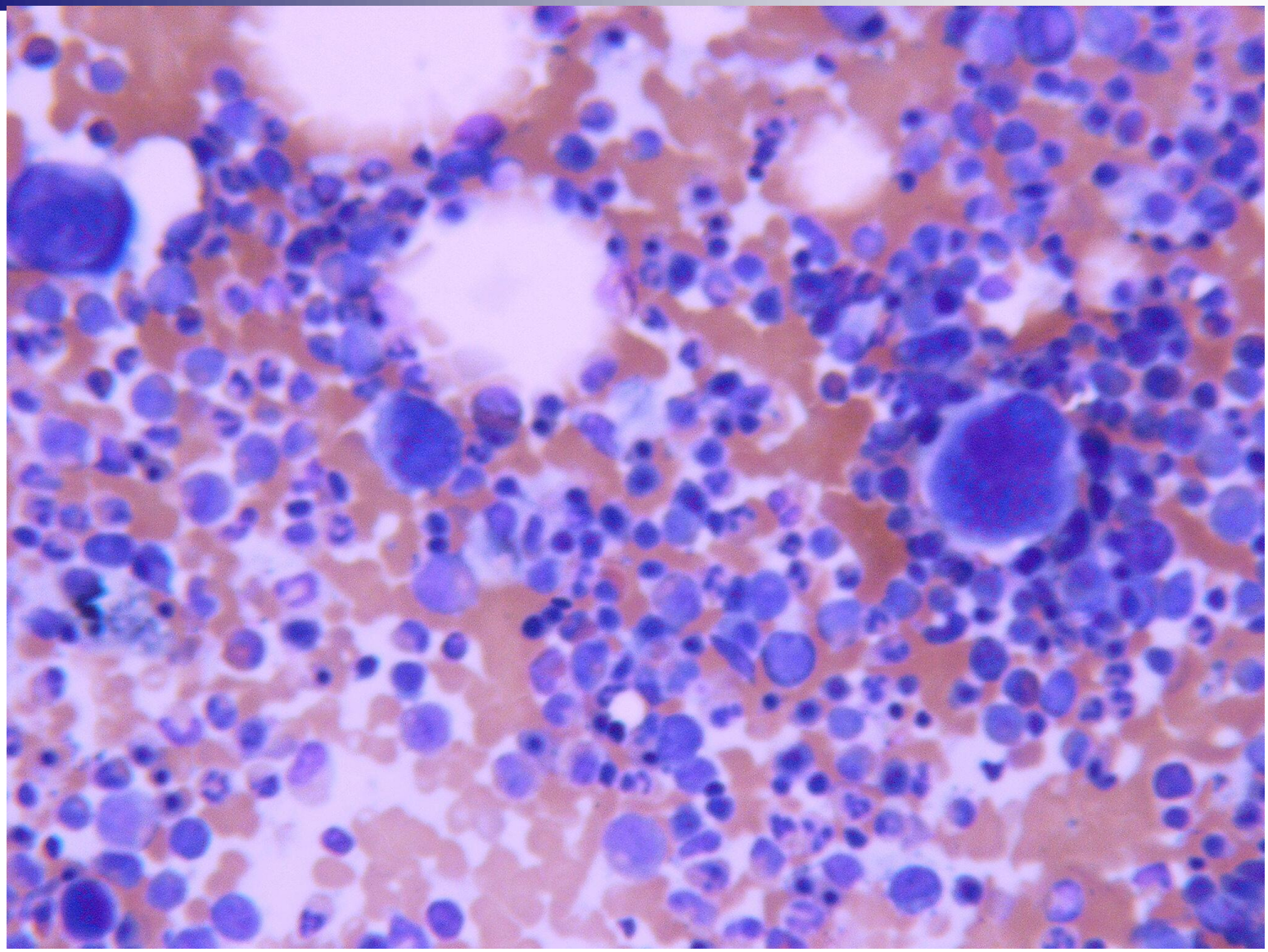
- 64 year old male with ESRD, COPD, DM, HTN, DVT/PE. Patient presented with CP, lesions in vertebral body, and pulmonary nodules
- WBC= 3.3, Hgb=11.0, Plt=175, MCV 111
  seg 47, lymph 39, mono 9, eos 5
- B12/folate: normal
  Serum protein electrophoresis: normal



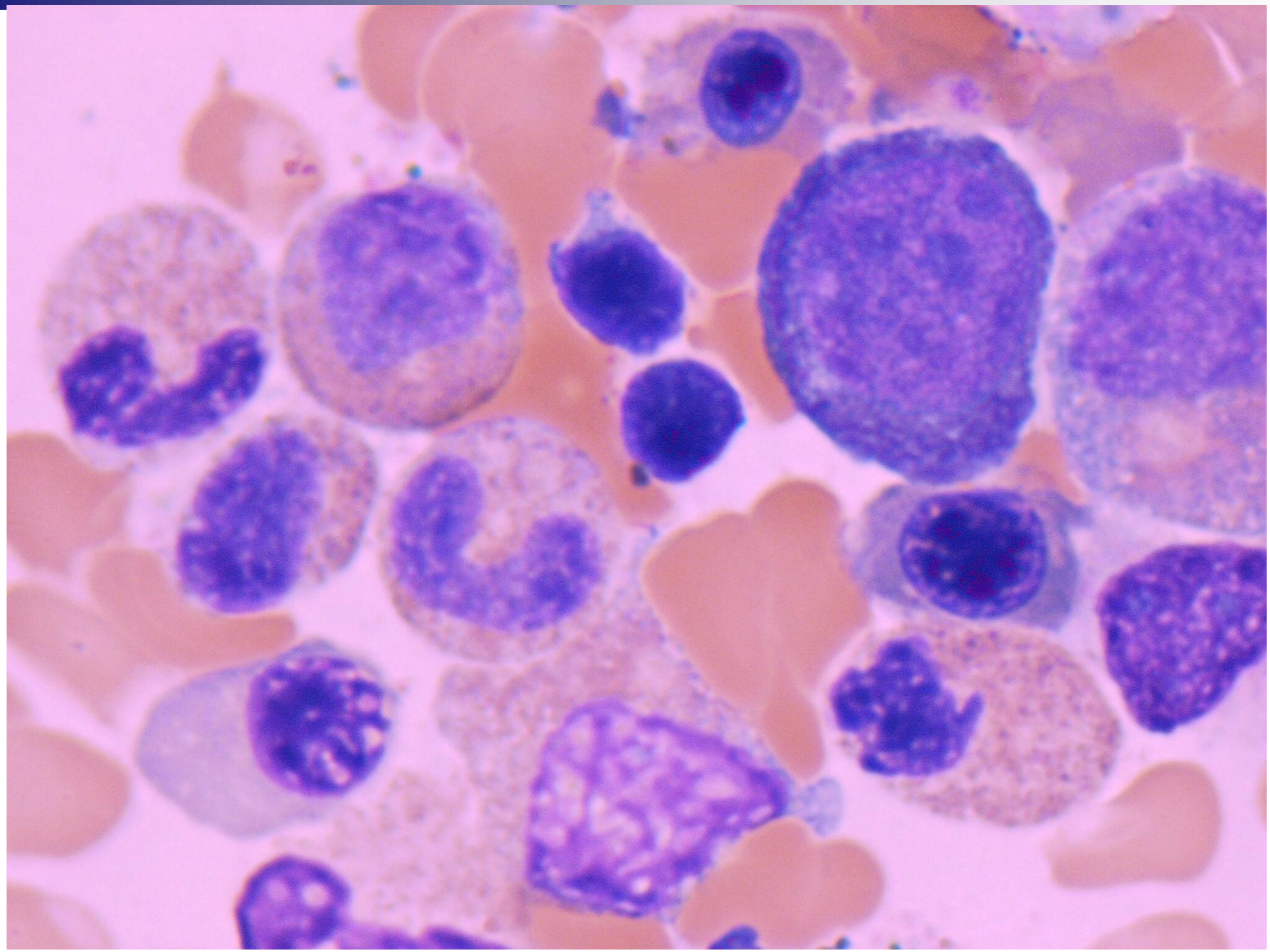
Peripheral blood: macrocytic anemia



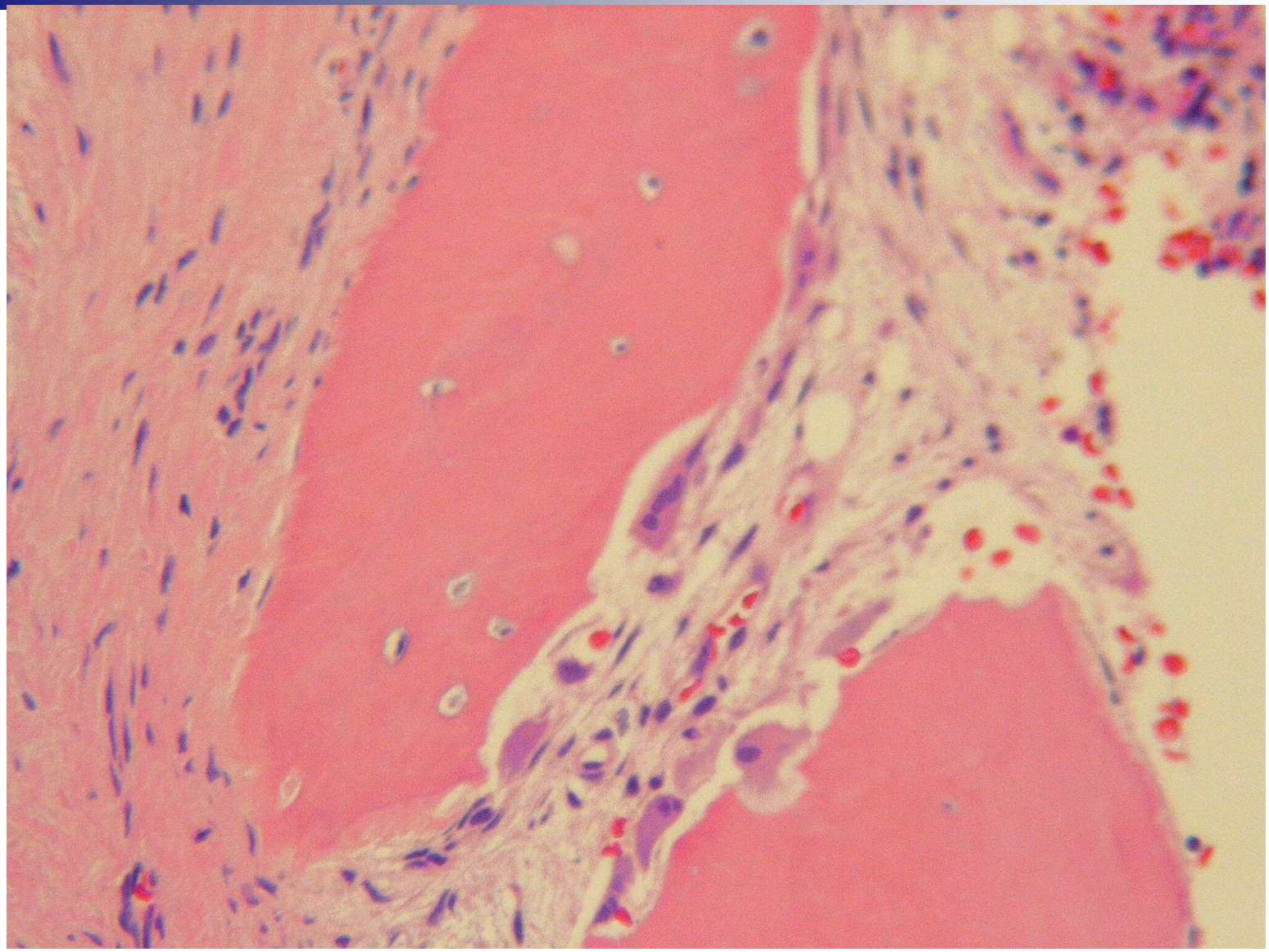
Peripheral blood: rare hypersegmented PMNs



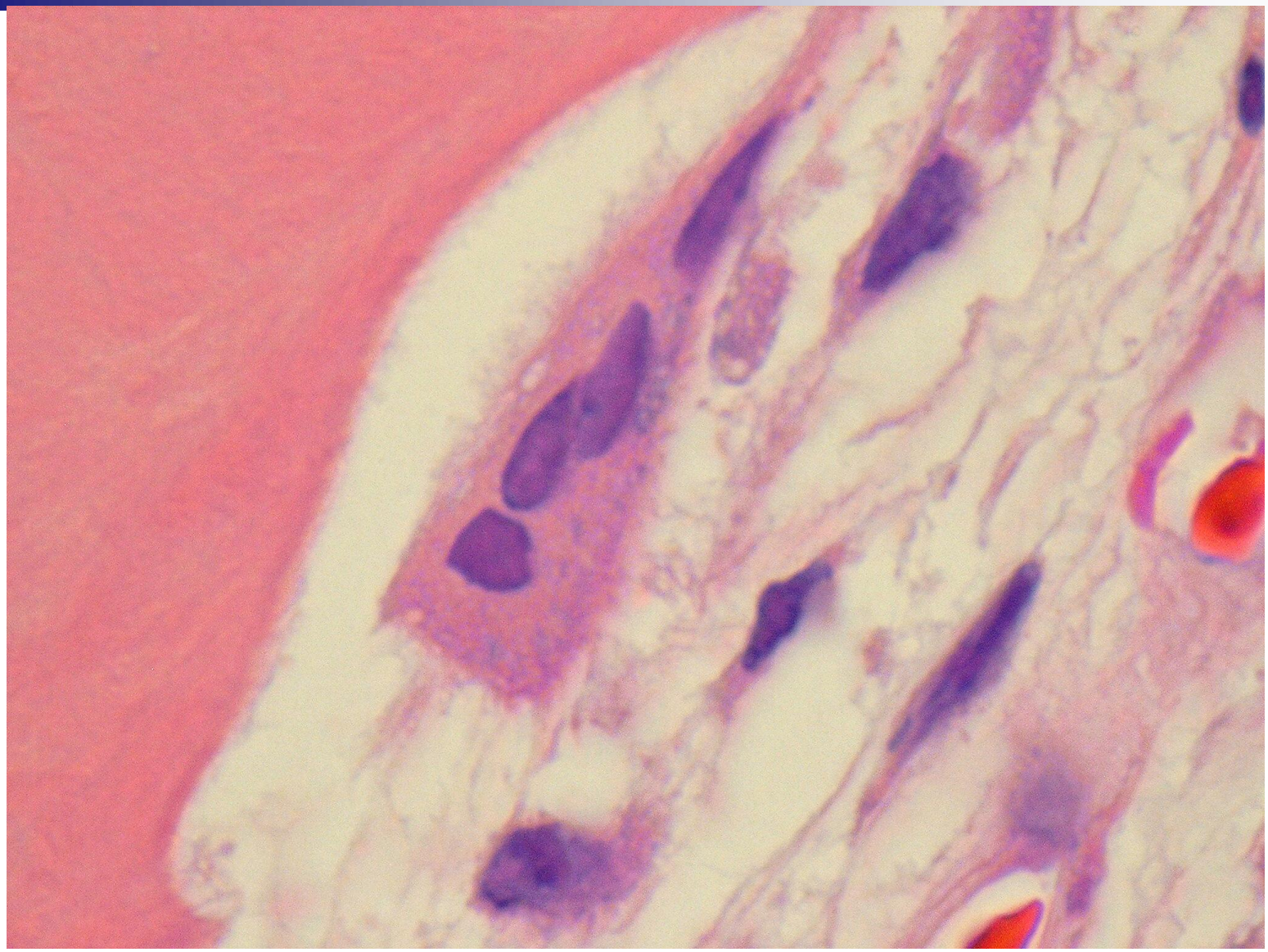
Bone marrow aspirate: normal morphology



Bone marrow aspirate, cont’d



Bone marrow biopsy: osteoclasts



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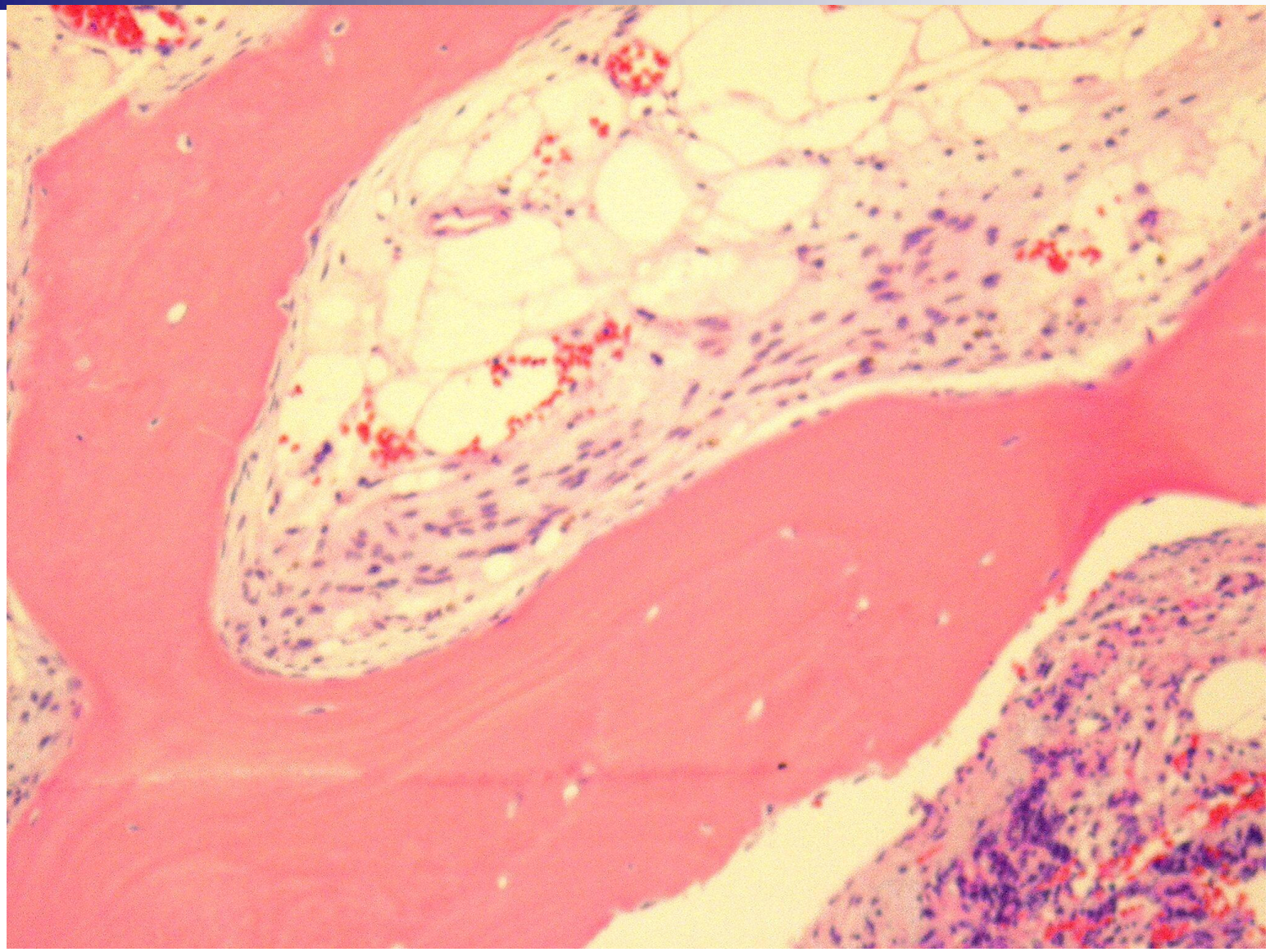
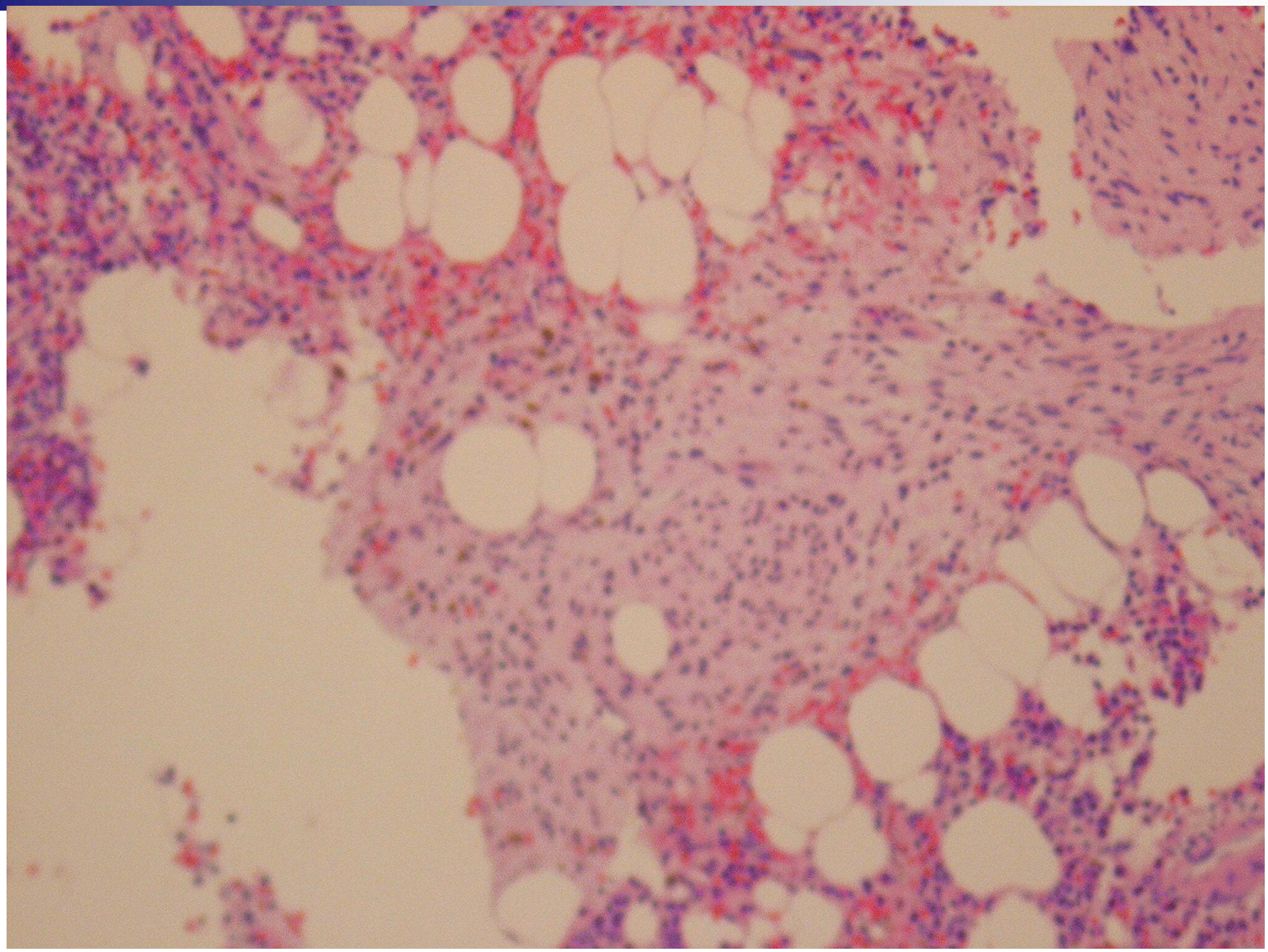


Bone marrow biopsy: fibrosis



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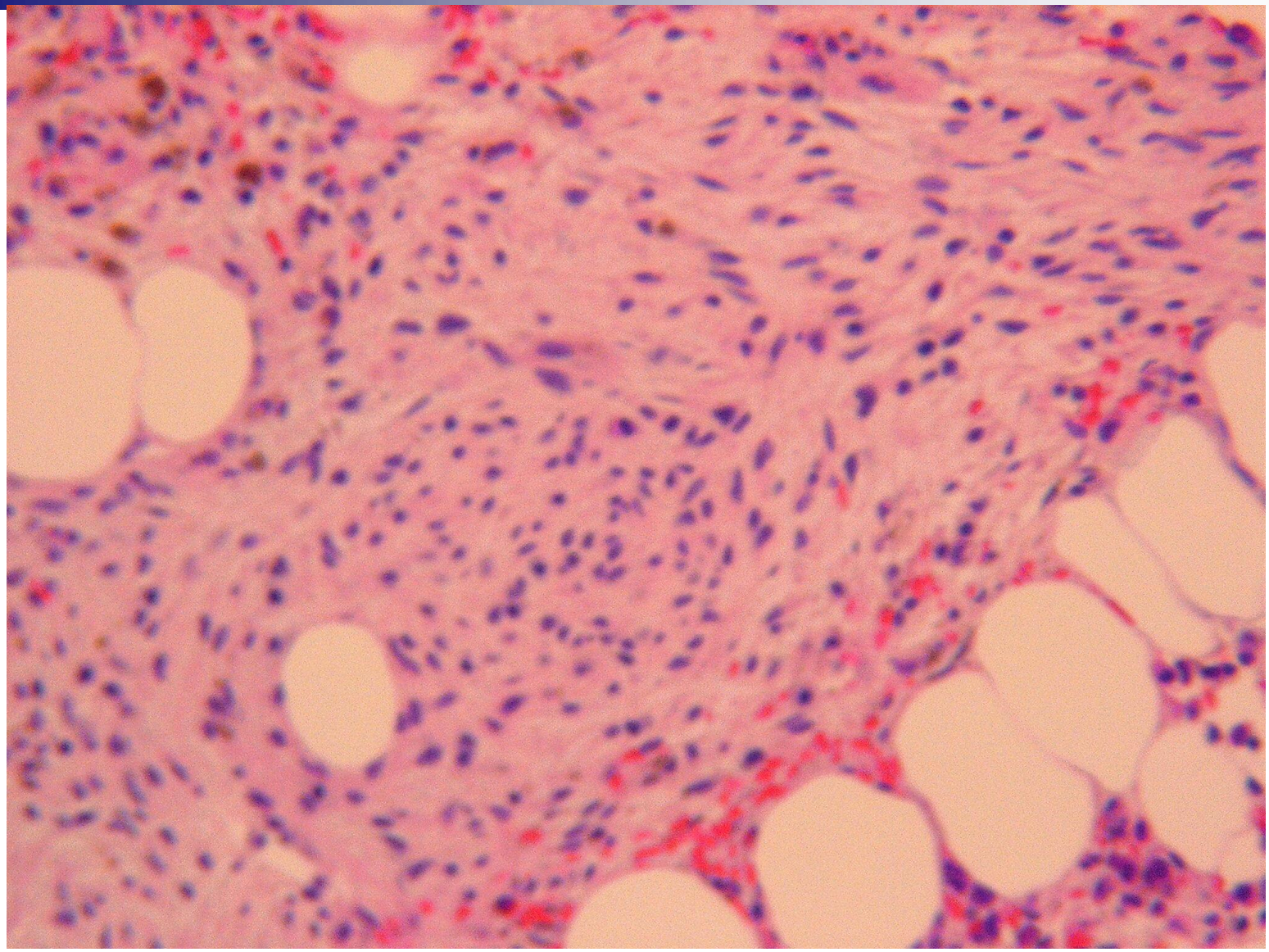

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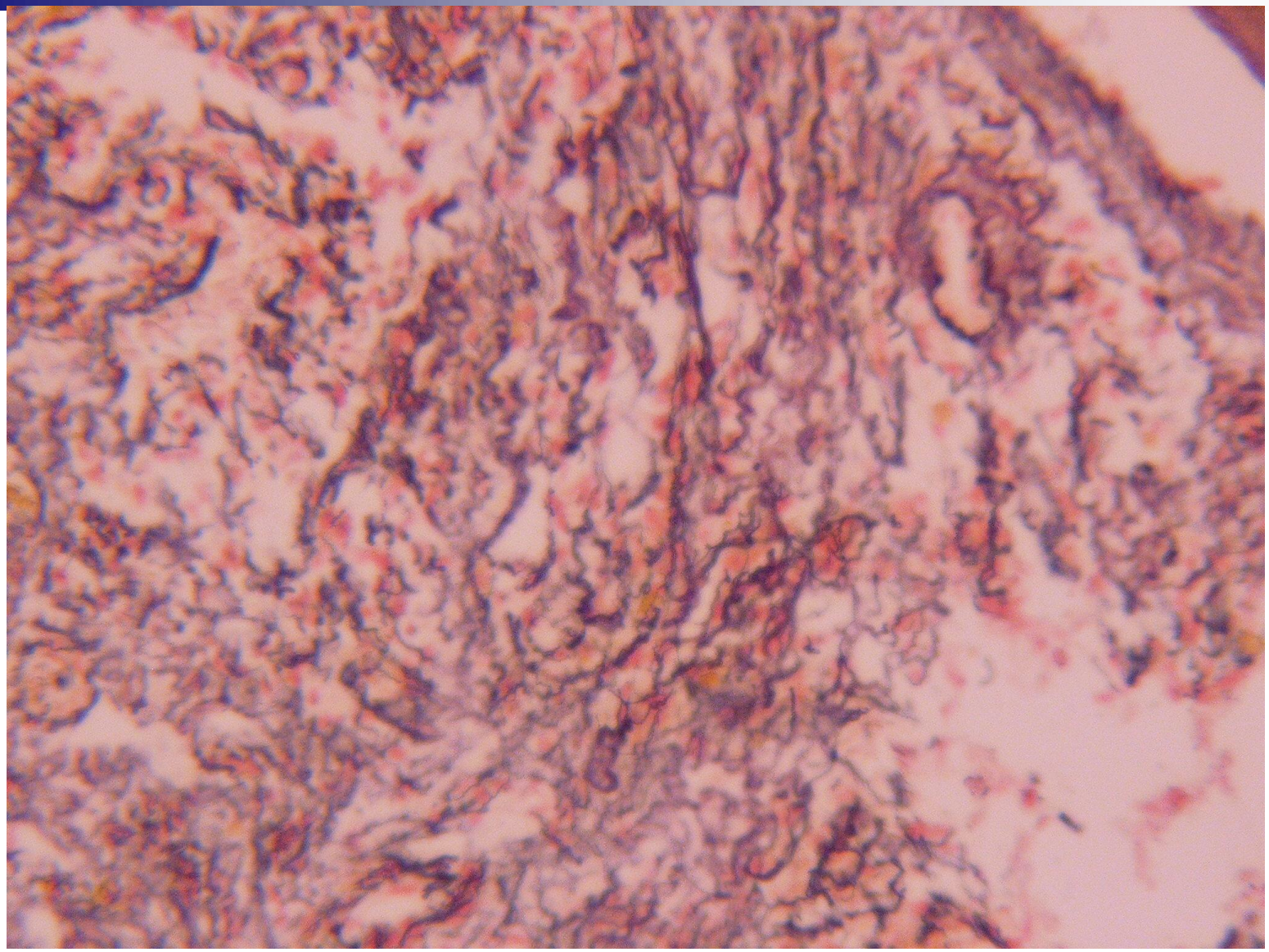
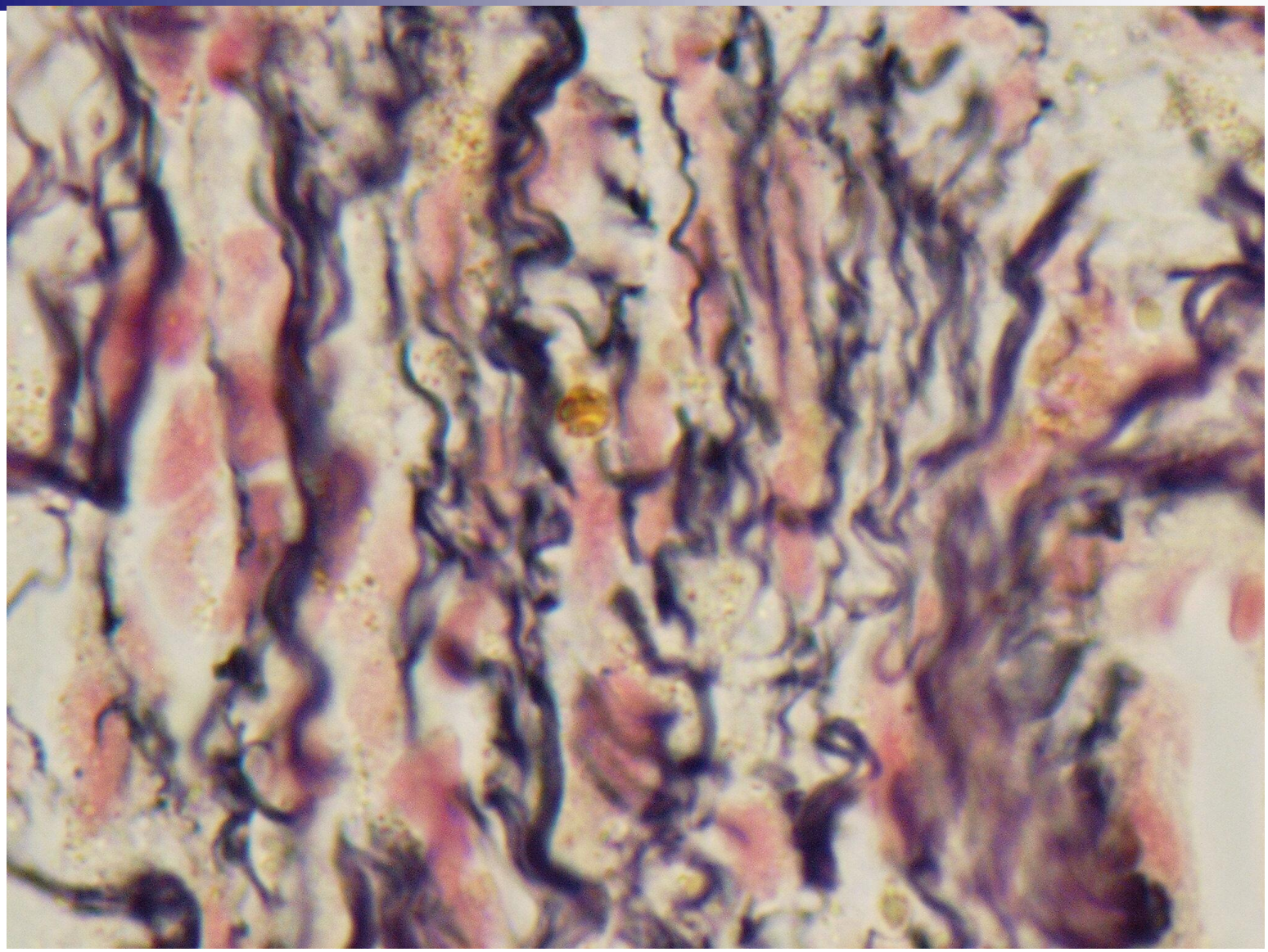


Bone marrow biopsy: reticulin stain



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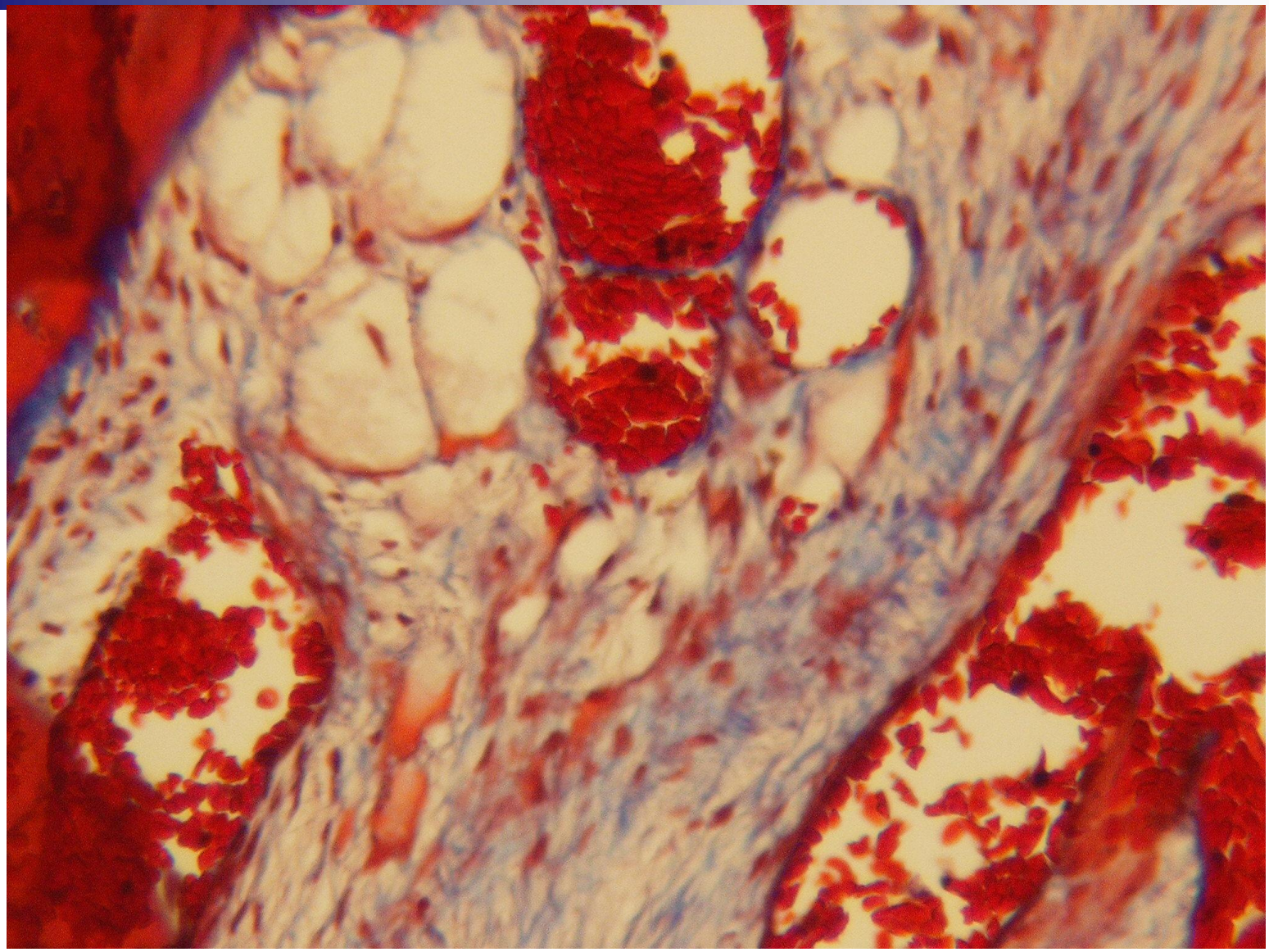


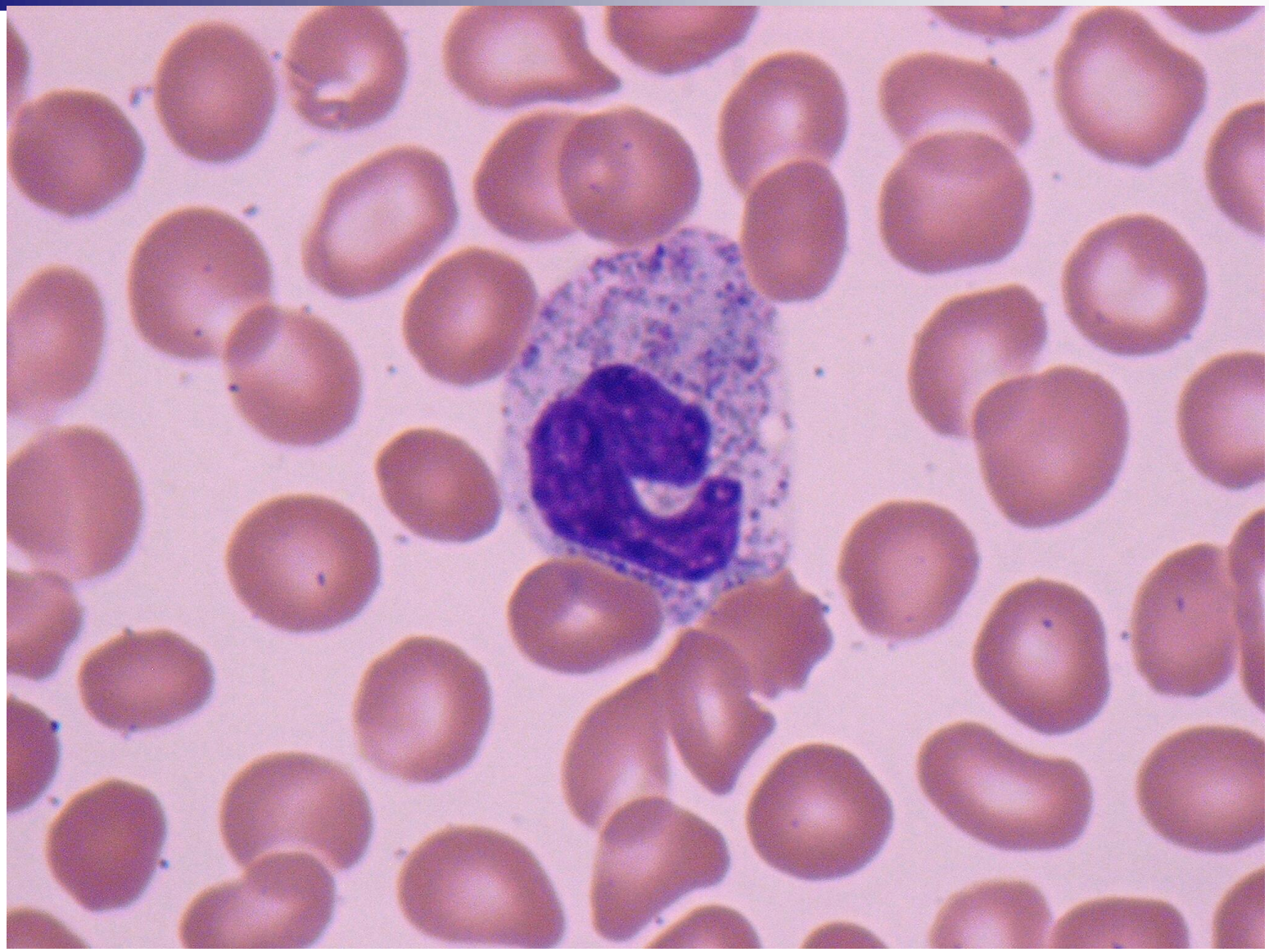
Bone marrow biopsy: trichrome stain

Diagnosis

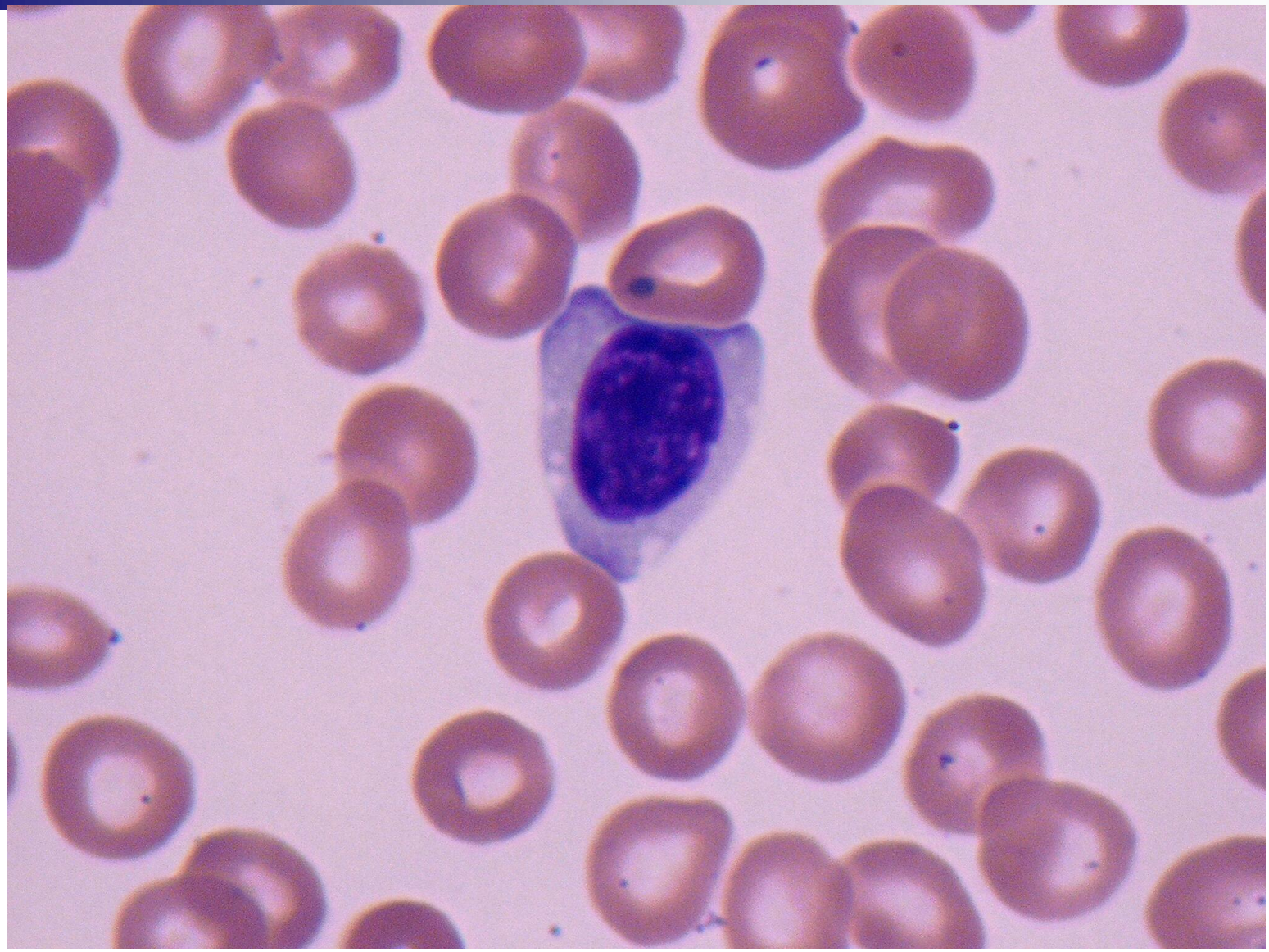
- Renal osteodystrophy
- Pathogenesis: CRF-> hyperphosphatemia-> secondary hyperparathyroidism-> increased osteoclast activity-> bone resorption-> bone formation-> osteosclerosis (thickened trabecular bone) and osteoporosis -> risk of fracture

Bone Marrow Case
Patient: Carxx Carxxx

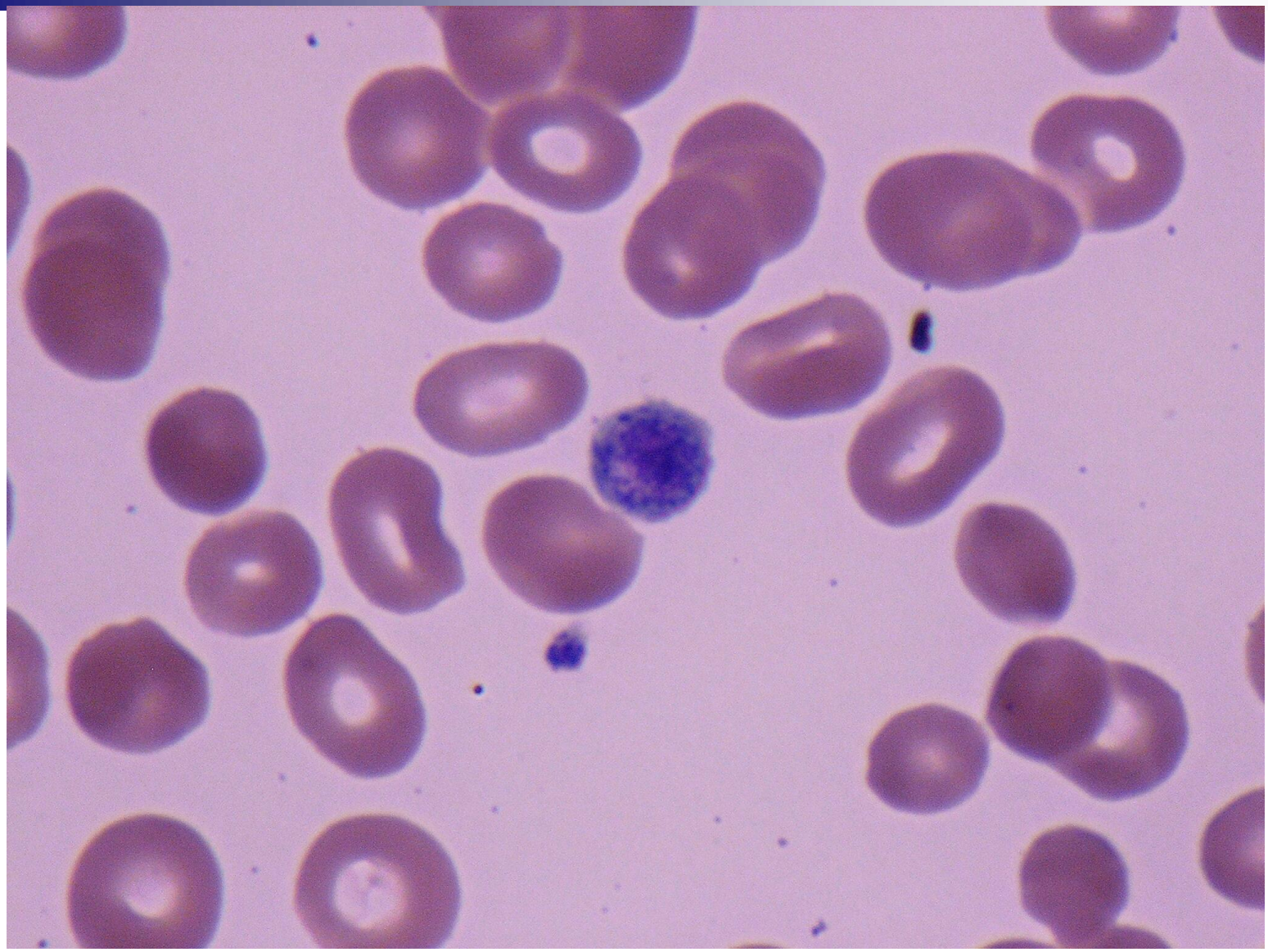
- 43 year old female with SLE, rheumatoid arthritis, presented with fever, pancytopenia, and URI. Patient was started on Nupogen 2 days prior to bone marrow procedure
- WBC= 1.0, Hgb=8.7, Plt=90, Retic 0.3%, MCV 83.6
  seg 14, lymph 67, mono 15



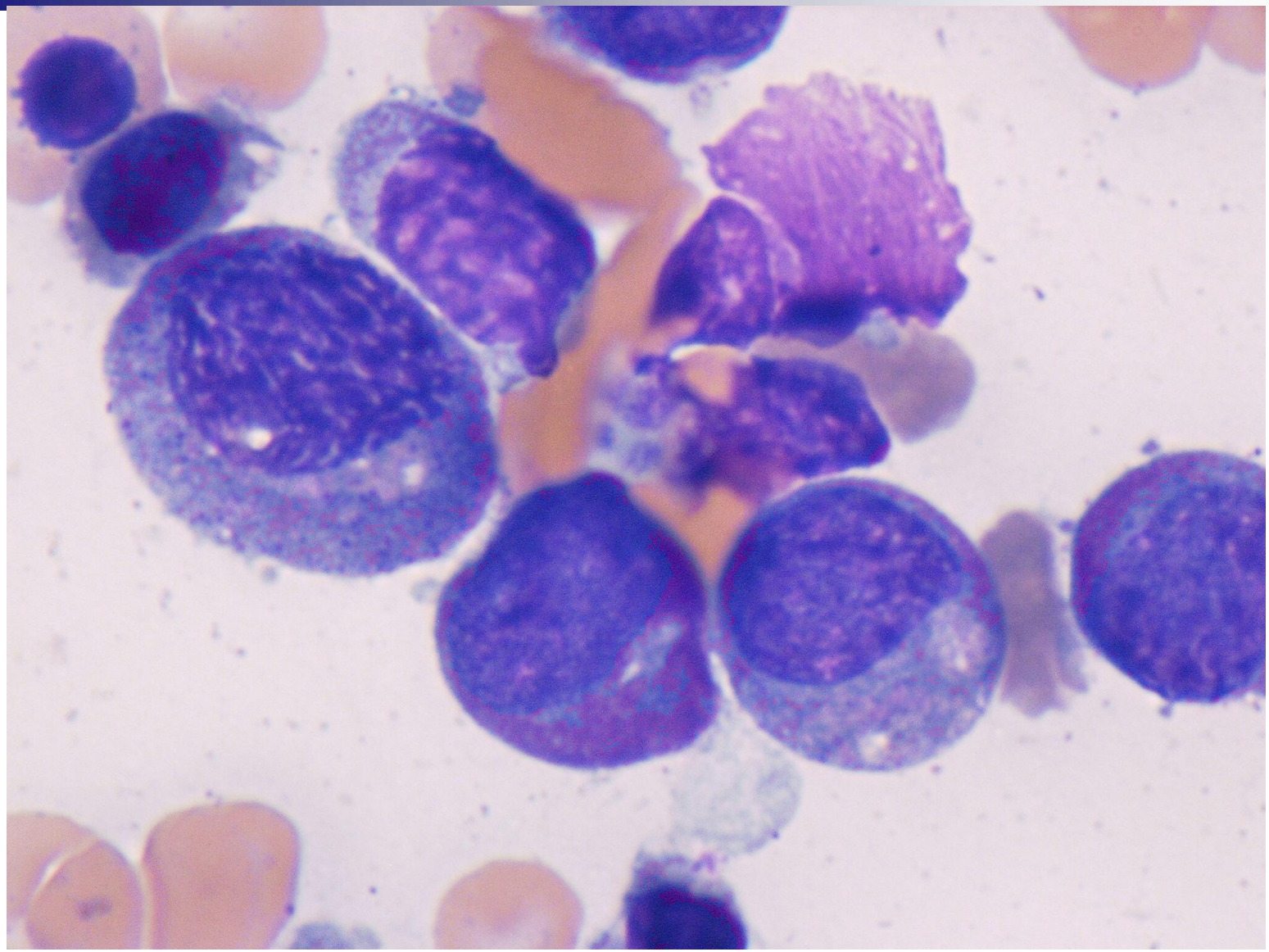
Peripheral blood: neutropenia, reactive PMNs



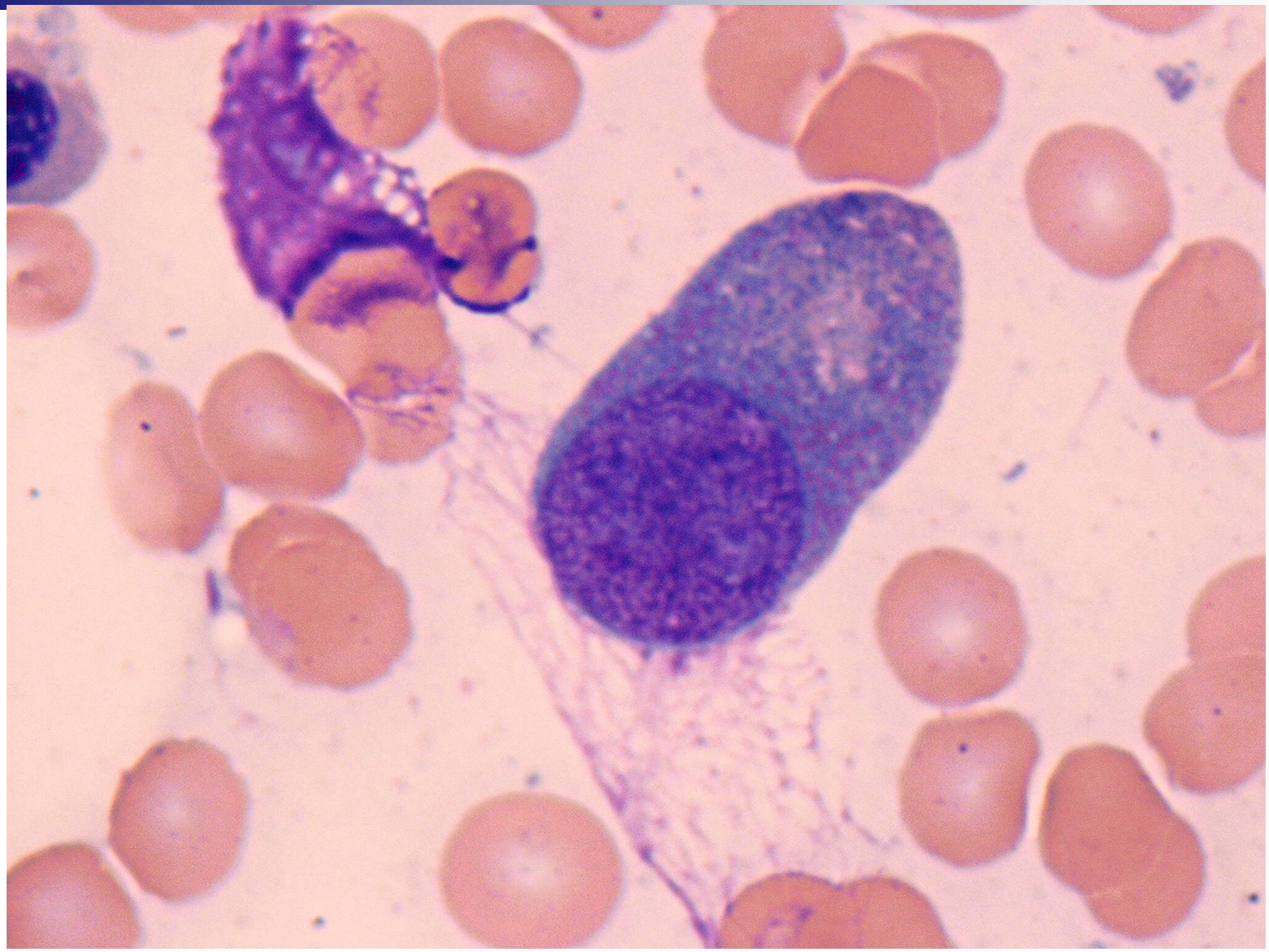
Peripheral blood: reactive lymphocytes



Peripheral blood: thrombocytopenia, a few large platelets



Bone marrow aspirate: promyelocytes and myelocytes with prominent paranuclear hof



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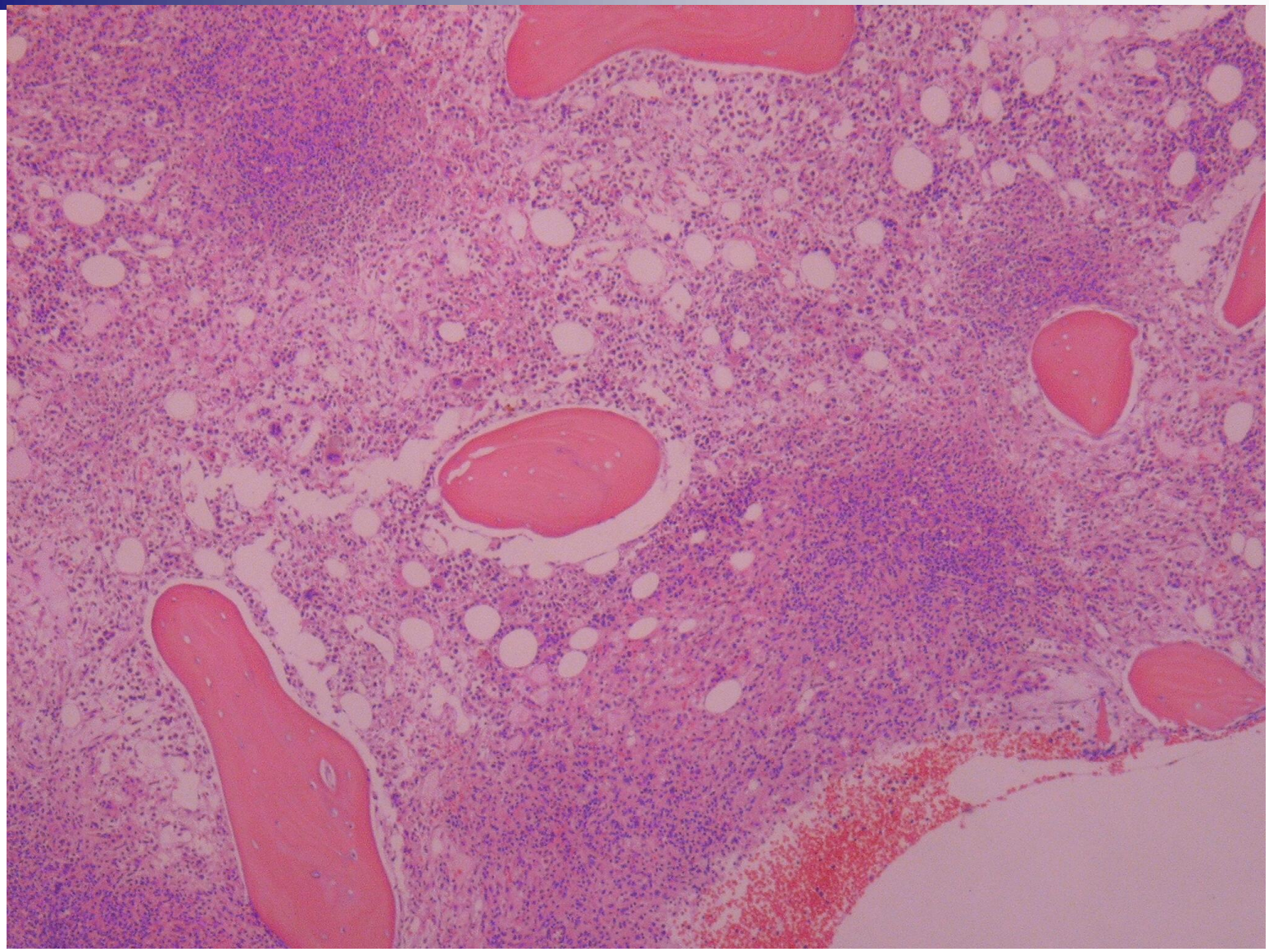
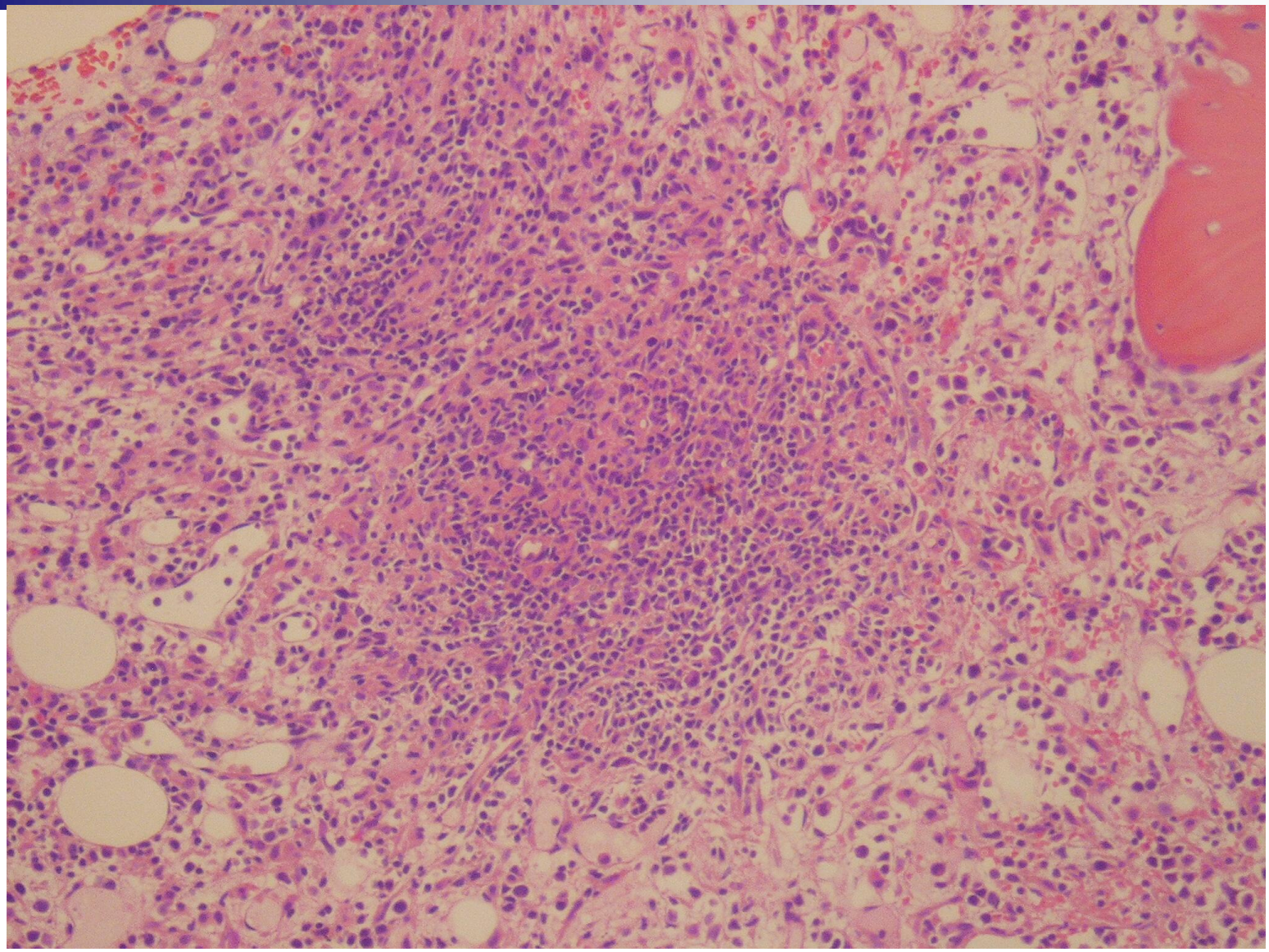
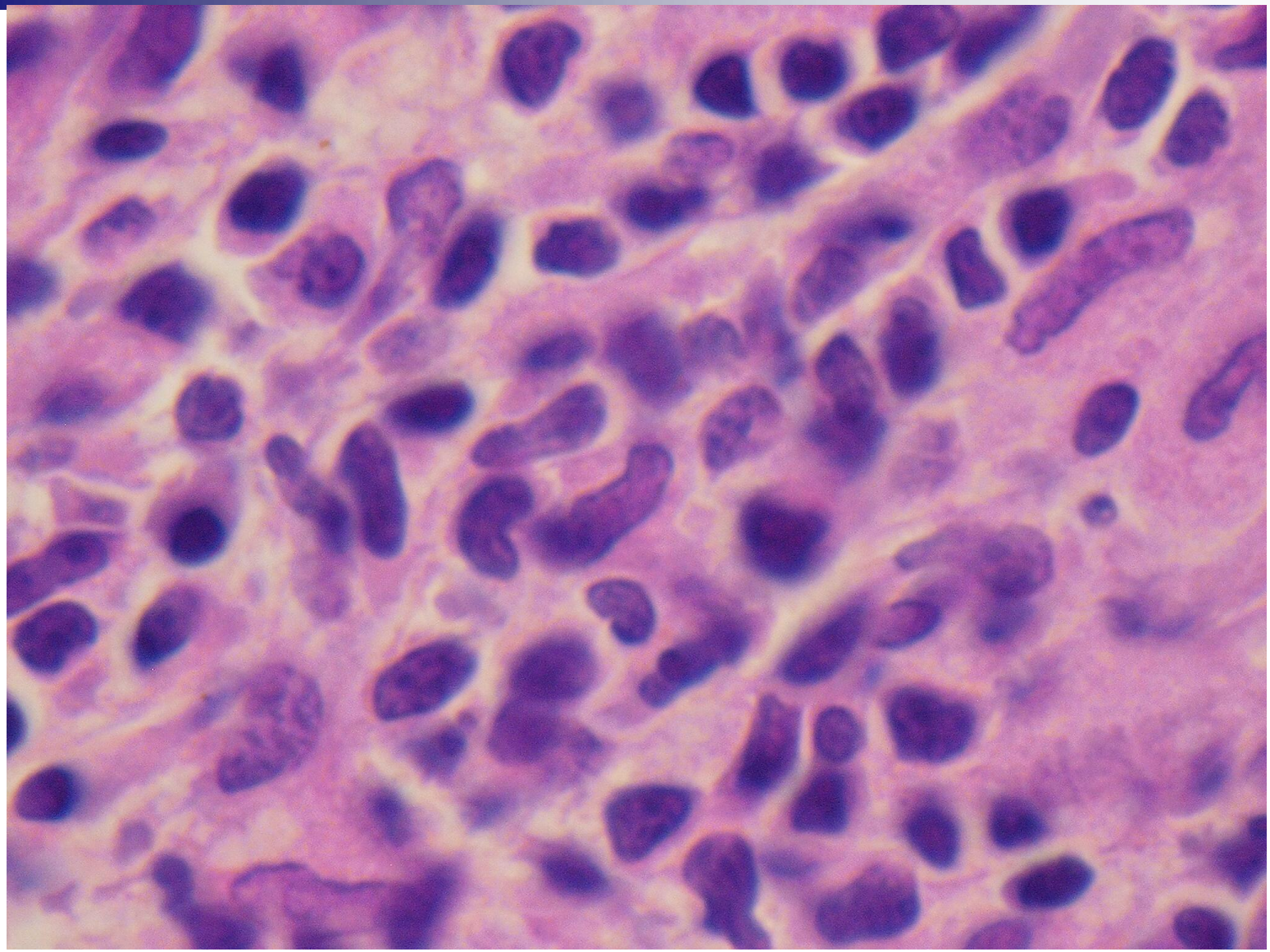


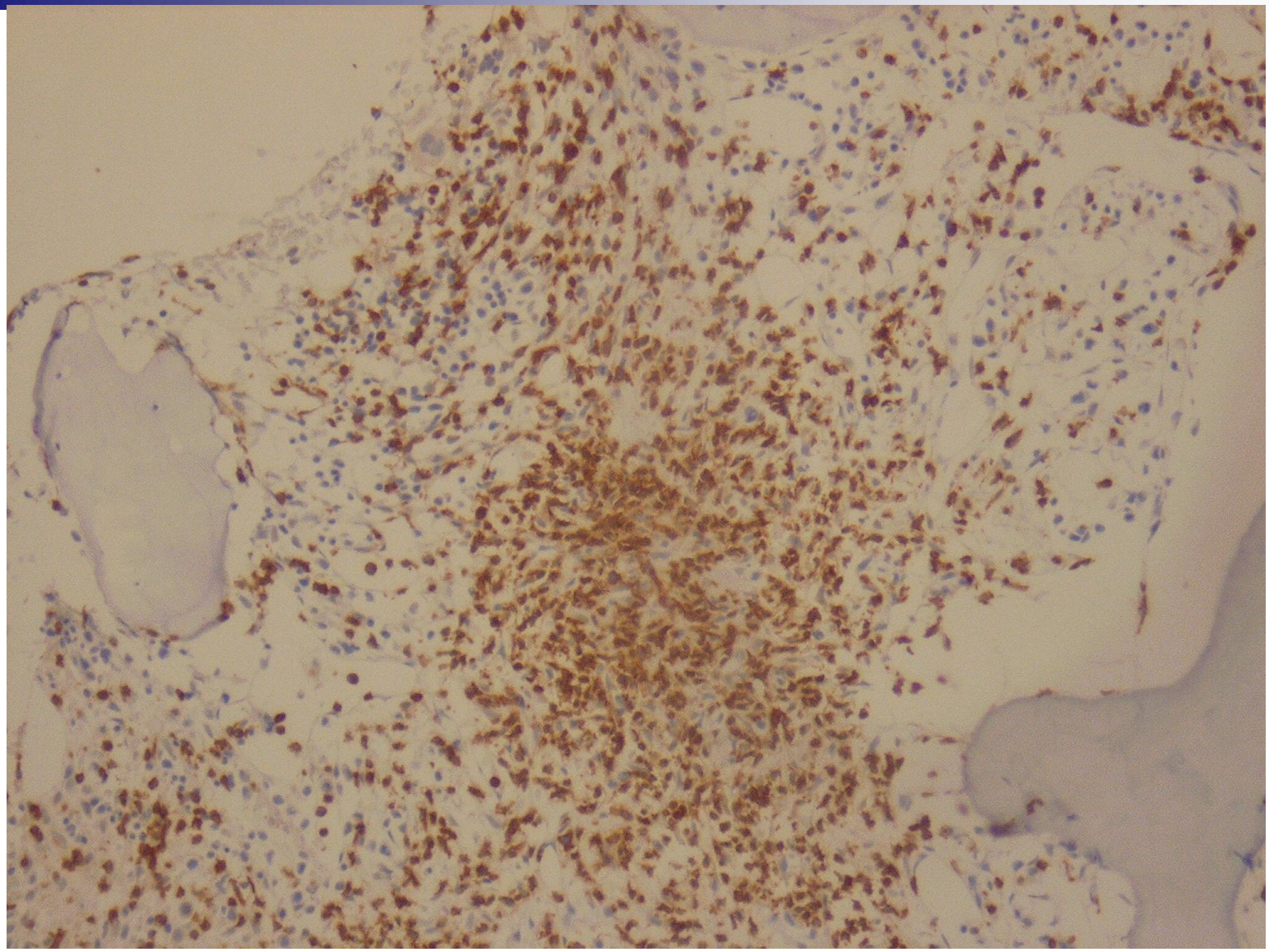
Bone marrow biopsy: 70% cellular, lymphocytic aggregates



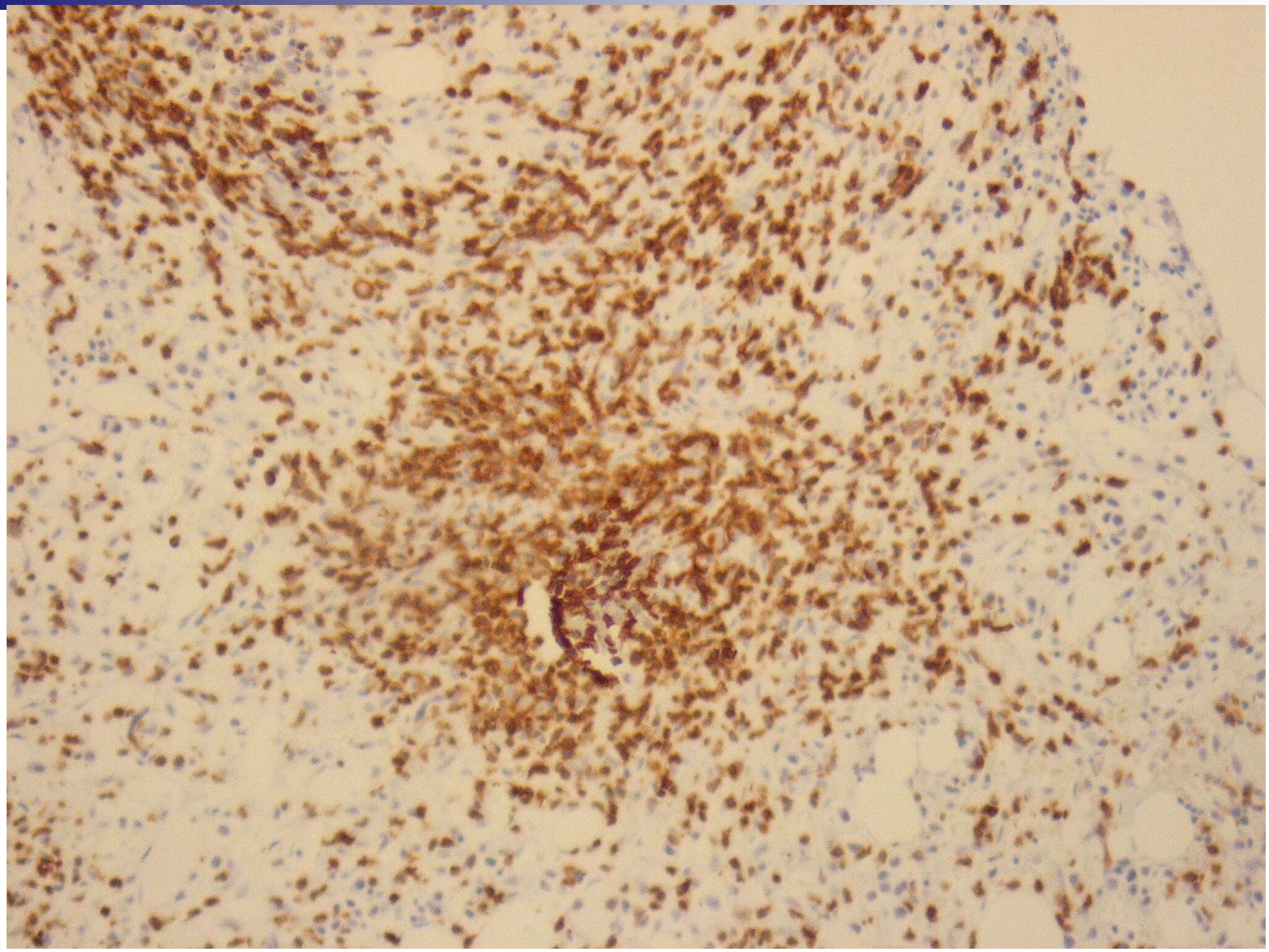
Bone marrow biopsy, con’t



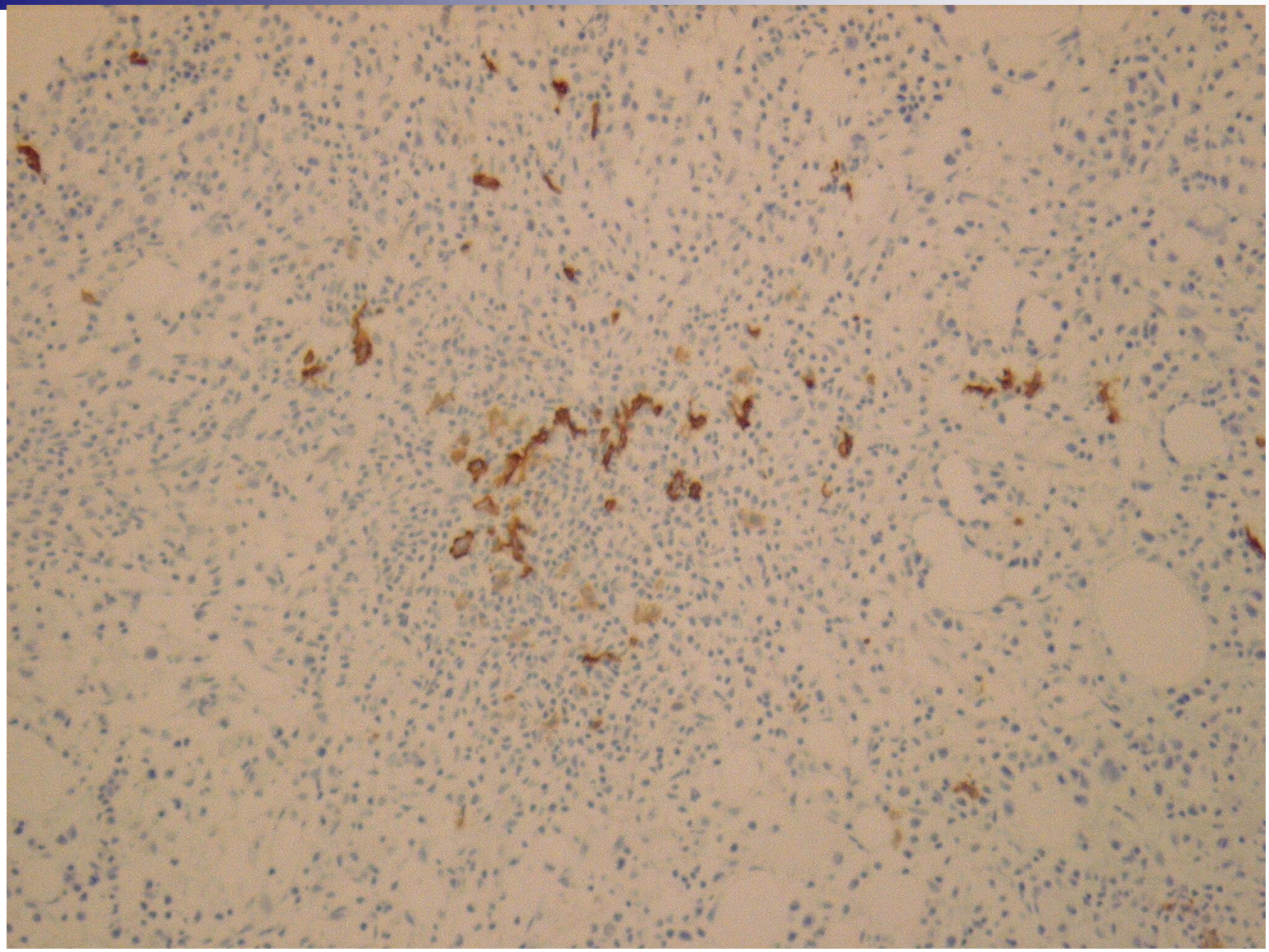
Bone marrow biopsy, con’t



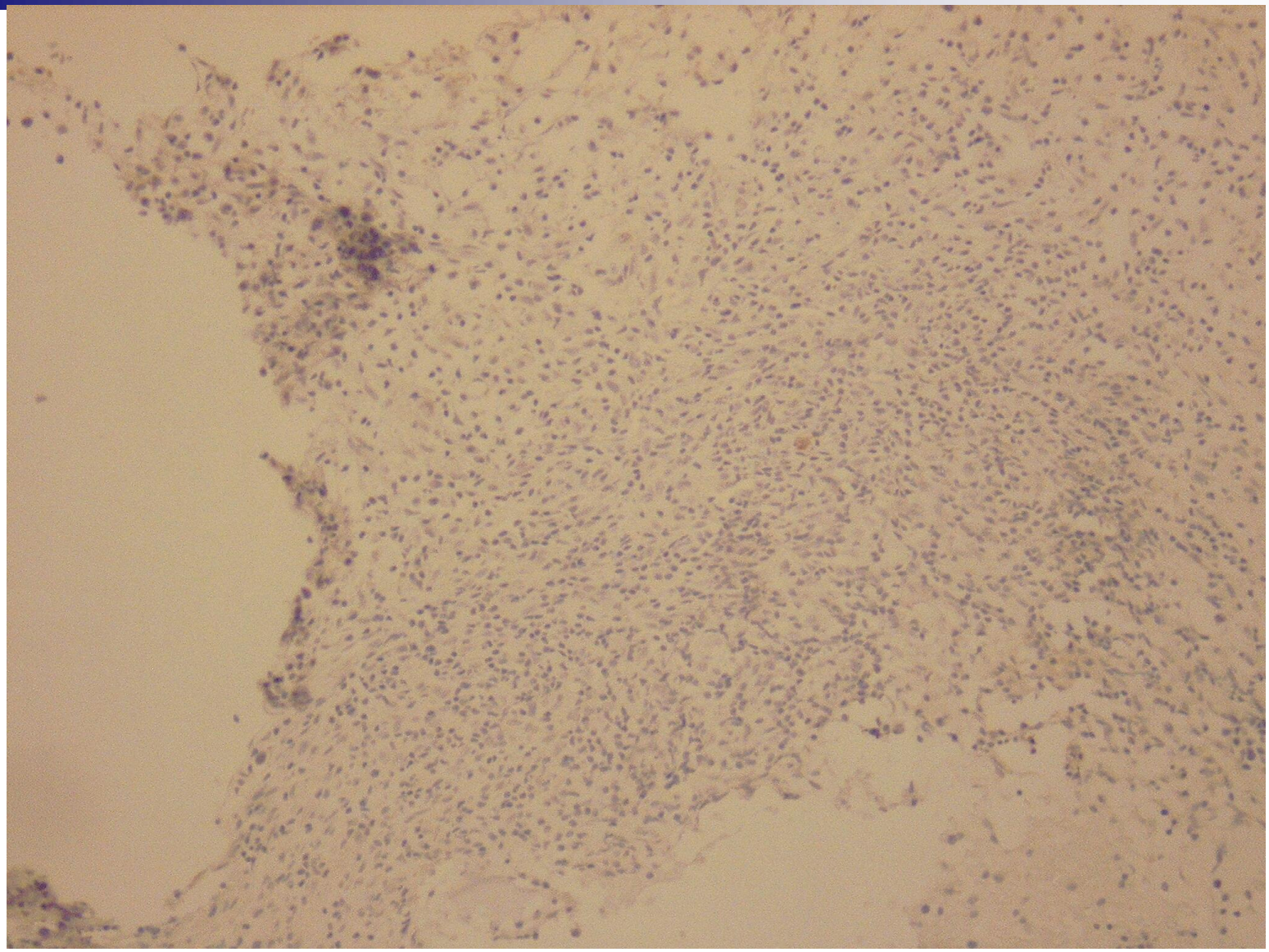
Bone marrow biopsy: CD3 immunostain



Bone marrow biopsy: CD5 immunostain



Bone marrow biopsy: CD20 immunostain



Bone marrow biopsy: CD23 immunostain

Diagnosis

- Flow cytometry results: predominant T-cells (97%). B-cells are less than 3%

- DX: atypical lymphocytic aggregates in SLE
  -Lymphoid aggregates are frequent findings in bone marrow clot section and biopsy. Occasionally, germinal centers may be noted
  -Lymphocytes are typically small and mature (mainly T cells)
  -If the aggregate are numerous, they may mimic lymphoma-> need to rule out lymphoma by flow cytometry and/or immunostains