

Author(s): Stephen Ramsburgh, M.D., Gerald Abrams, M.D., 2009

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Musculoskeletal Lab #1

G Abrams, S Ramsburgh
M2 Musculoskeletal
Fall 2008




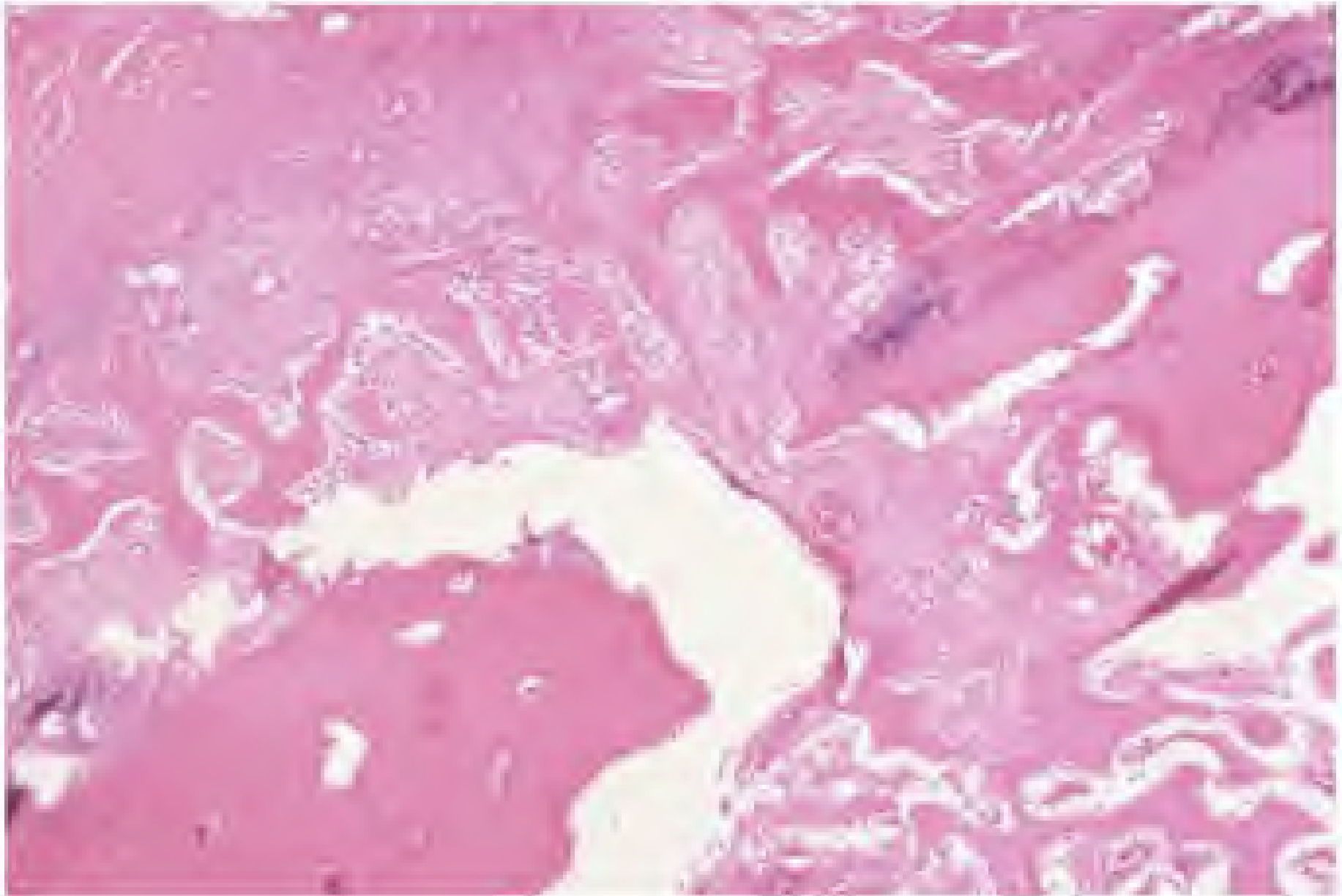
Musculoskeletal Sequence Lab # 1

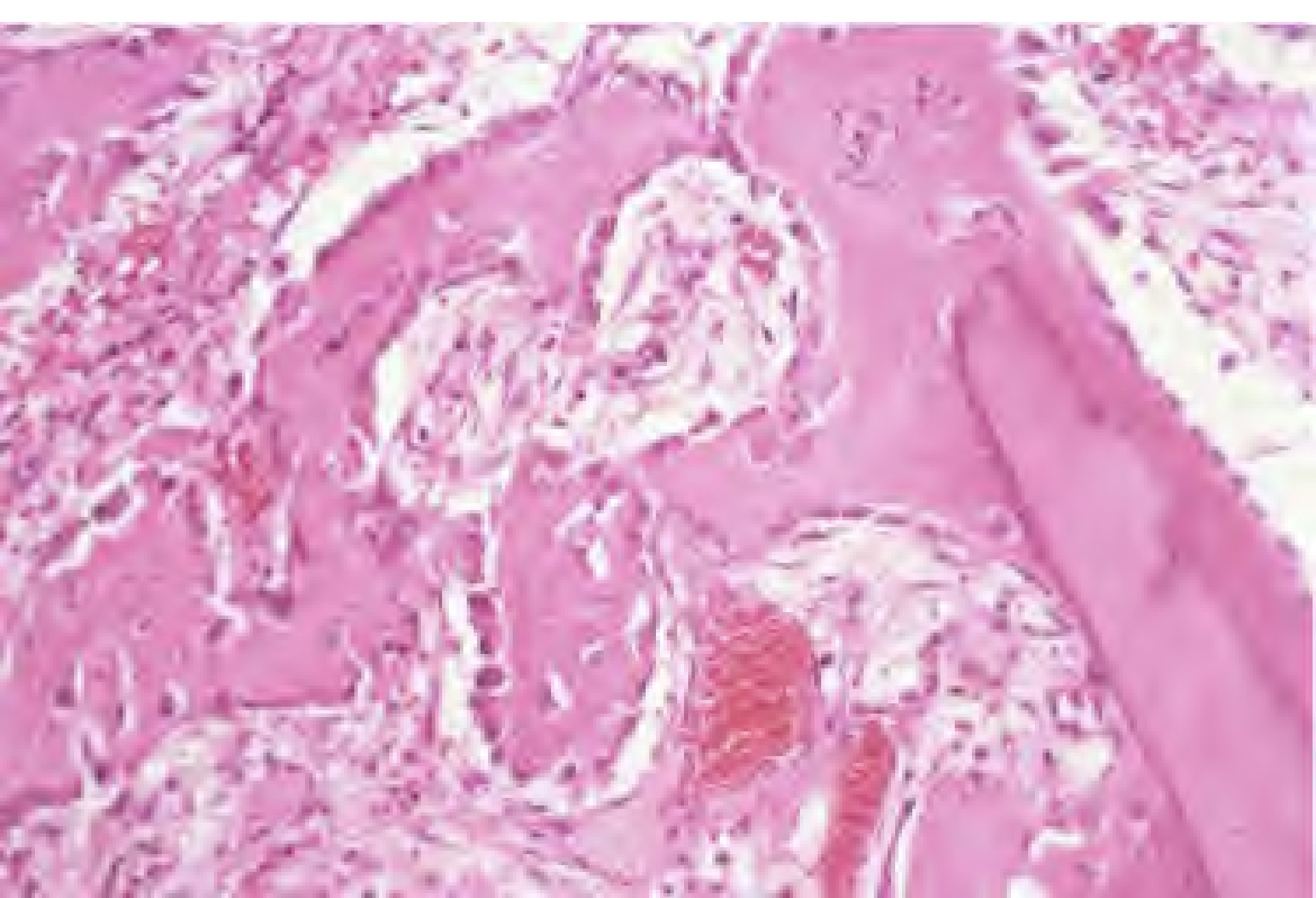
- 181 Healing fracture
- 182 Osteomyelitis
- 183 Renal osteodystrophy
- 184 Paget's disease of bone

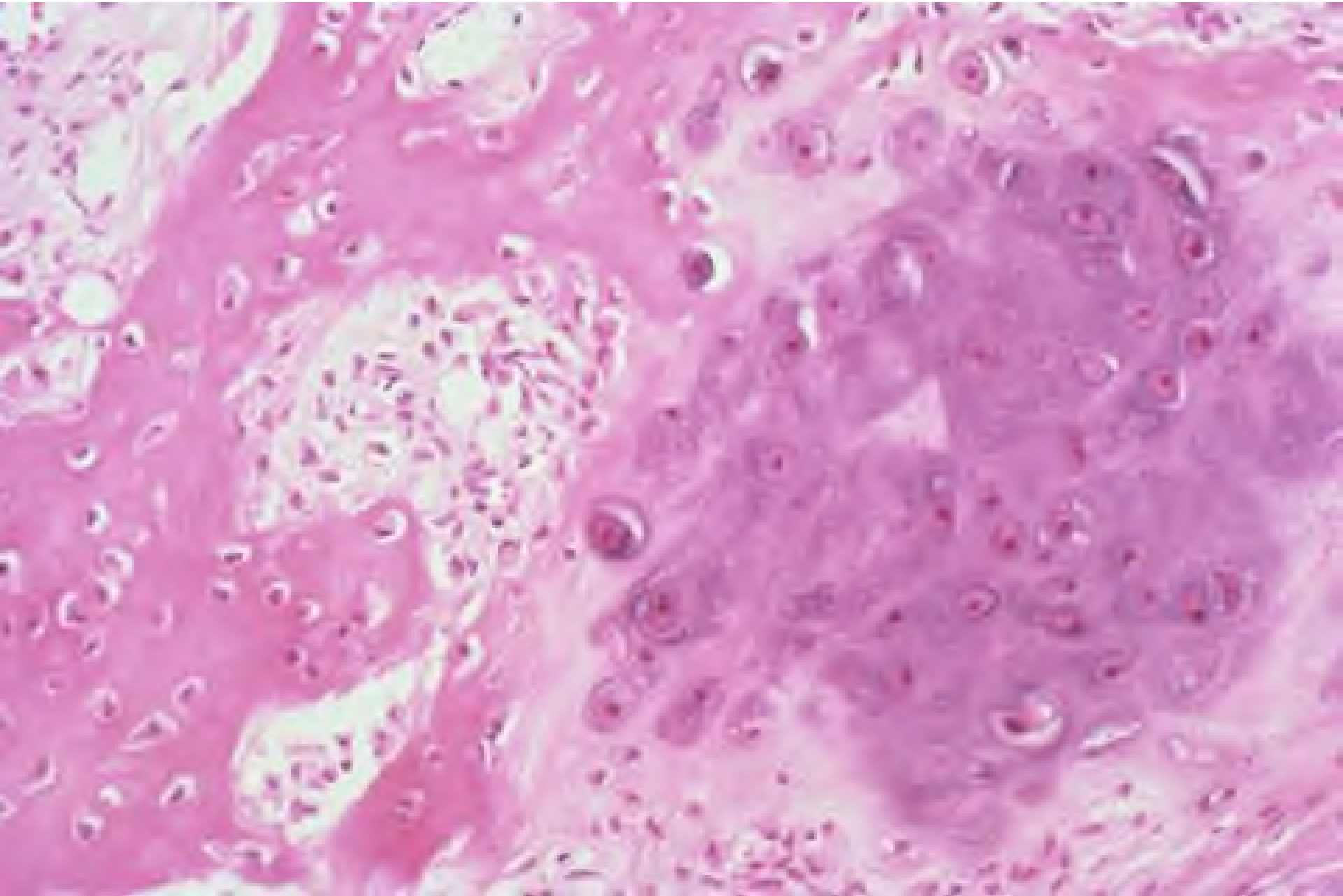
Healing Fracture

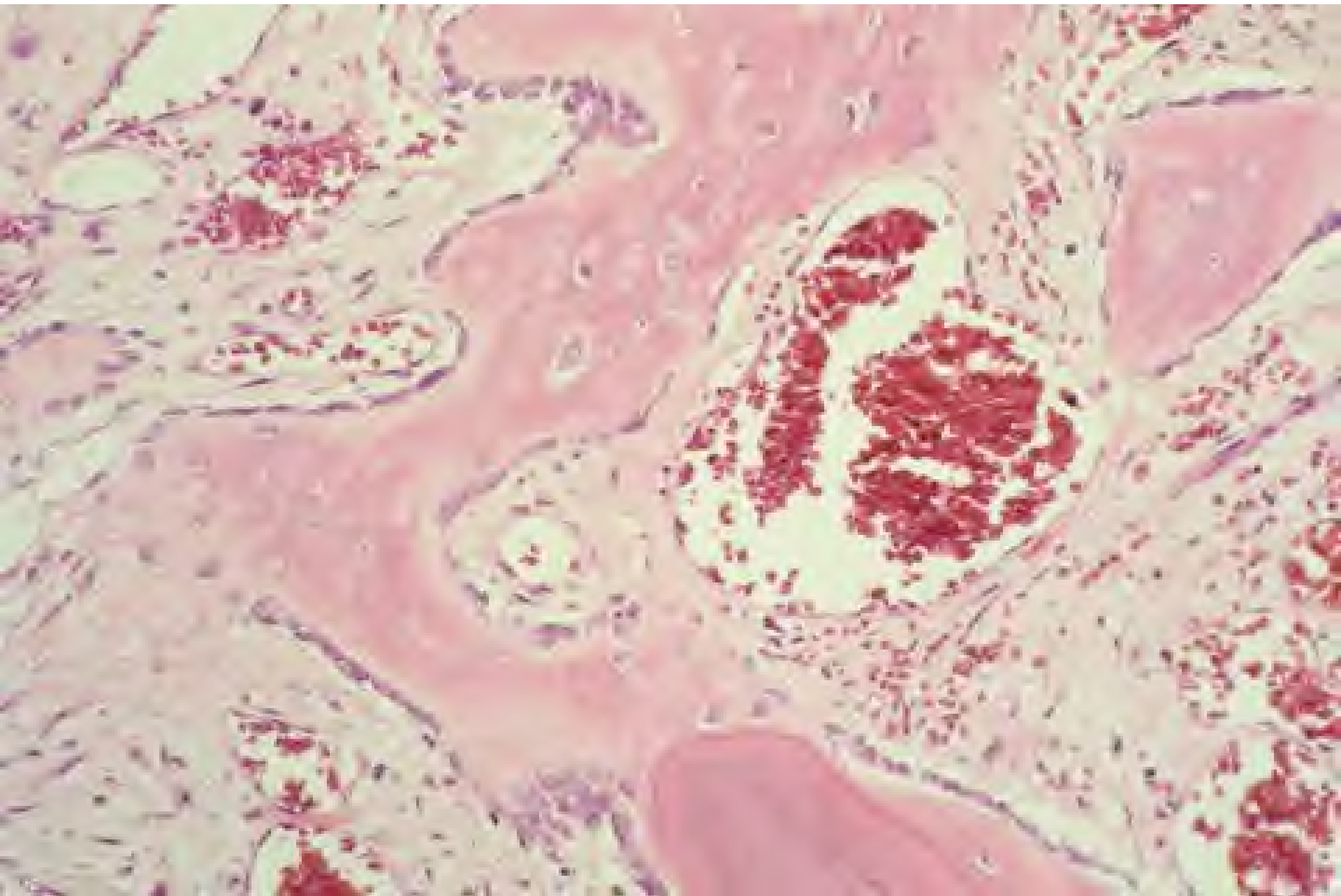


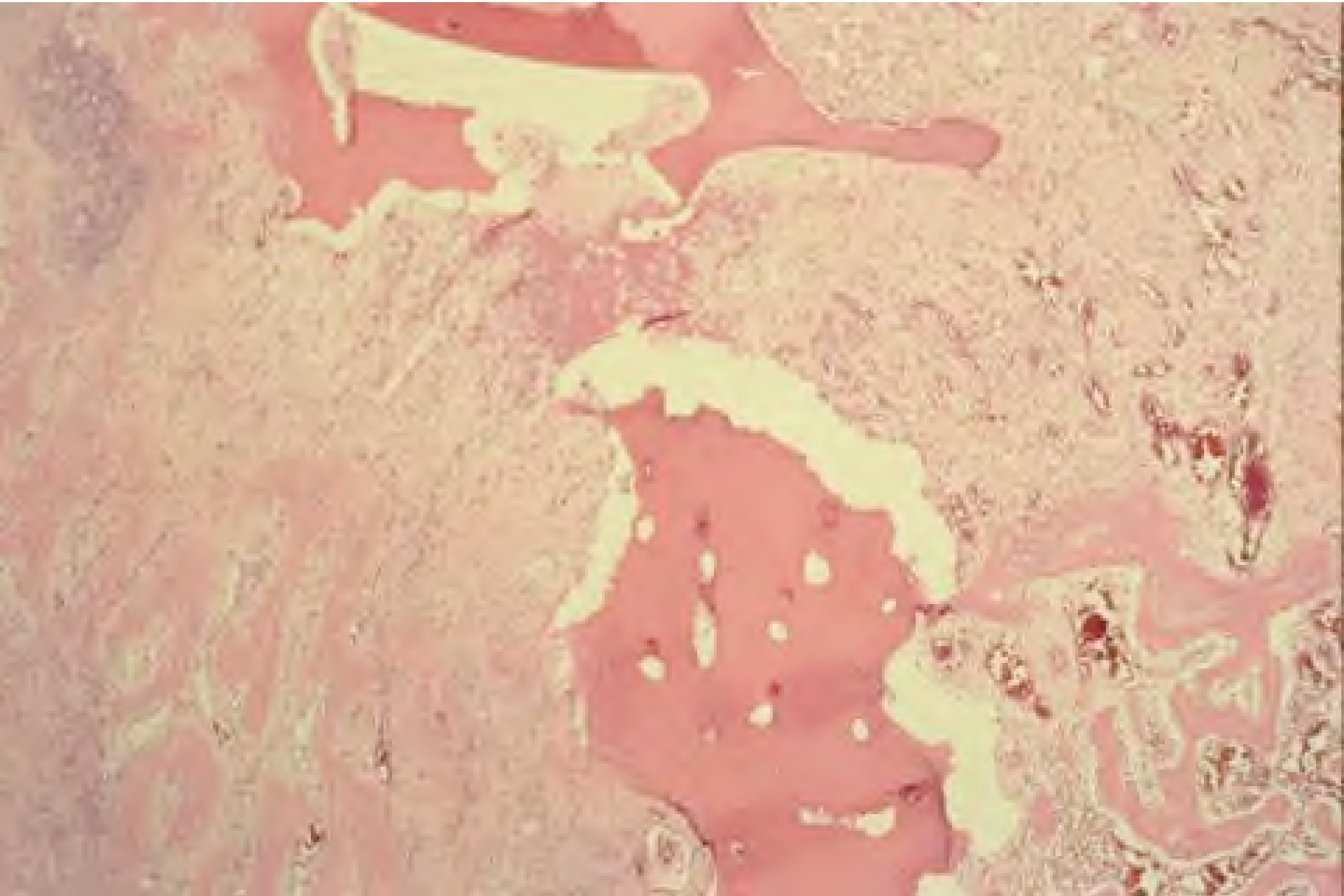
 PD-INCL G.D. Abrams, University of Michigan Medical School

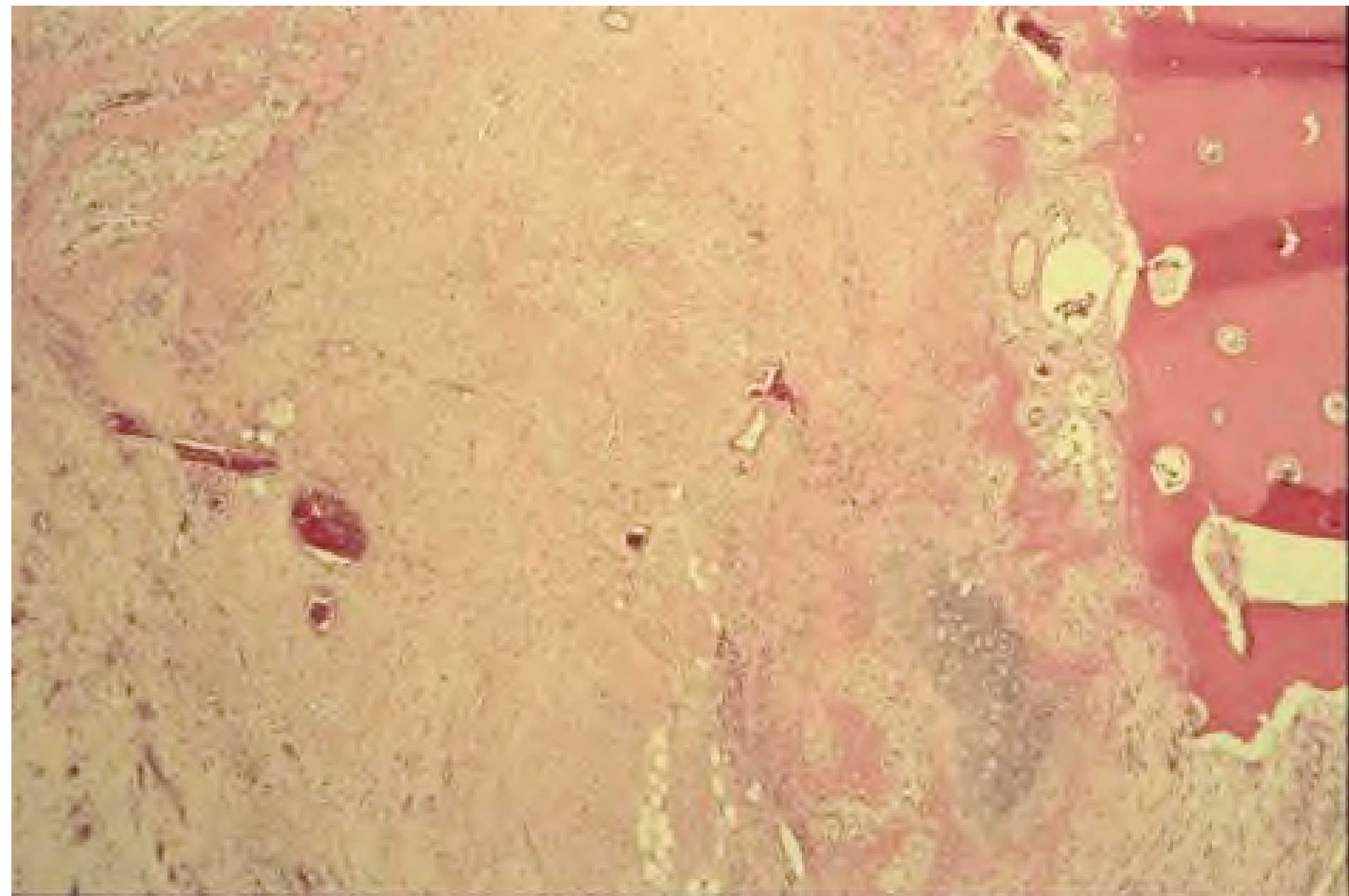


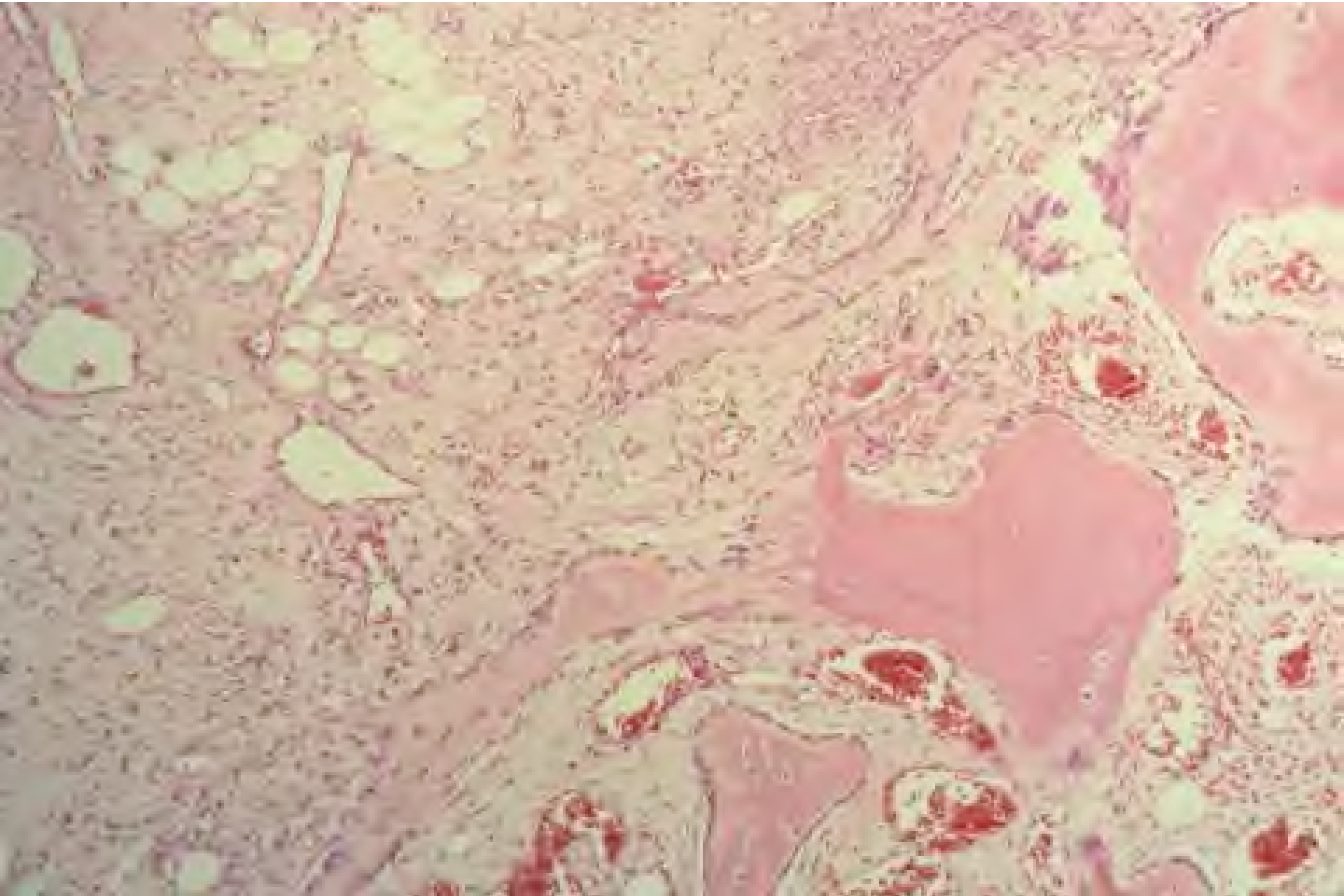












Callus

Week 1

- Necrotic debris
- Hemorrhage
- Granulation tissue – macrophages
- Primitive mesenchyme – edematous, “infiltrative,” pre-osteoblast, chondroblast

Callus

Week 2-3

- Less edematous
- Pseudosarcomatous appearance – mitoses frequent, hyperchromatic nuclei
- Primitive osteoid – cartilage
- Regular maturation

Callus

Week 3-5

- Woven bone with rims of plump osteoblasts
- Stromal maturation – loose, bland, vascular
- Cartilage – endochondral bone

Callus

Week 5+

- Benign regular pattern
- Fatty vascular marrow
- Early lamellar bone
- Osteoblasts less conspicuous

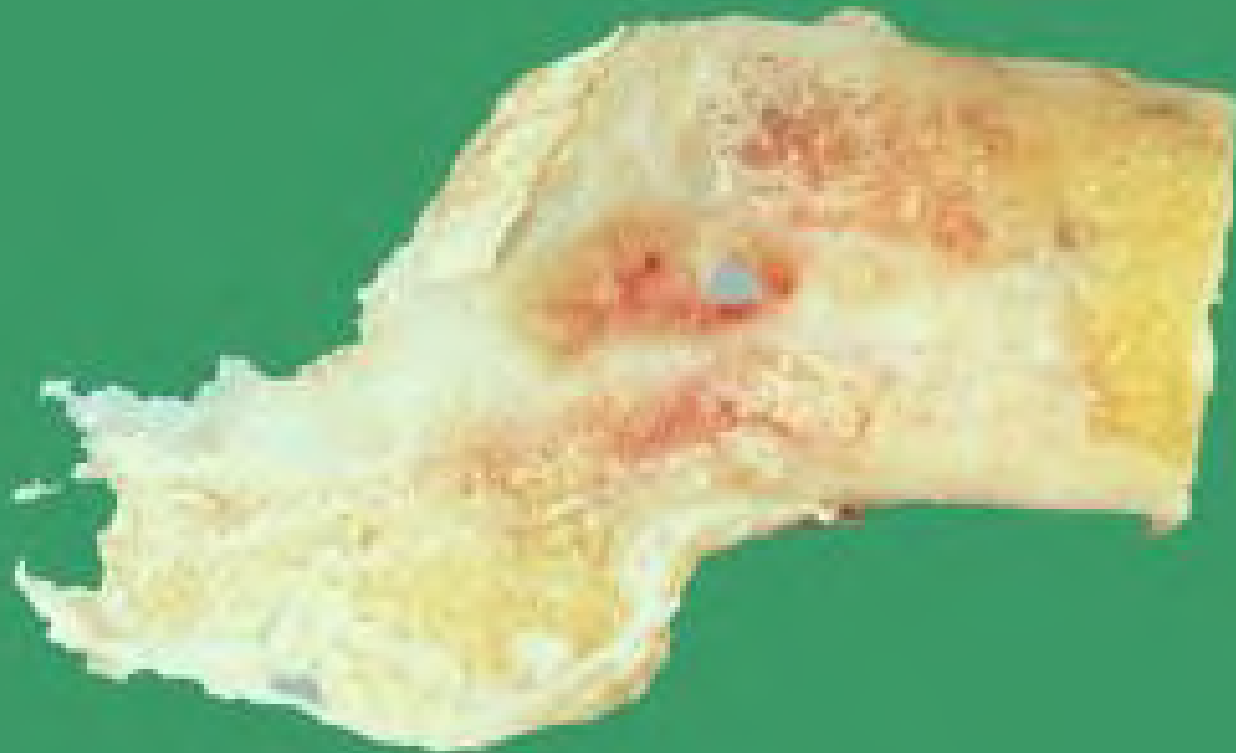
Fracture Repair - Callus

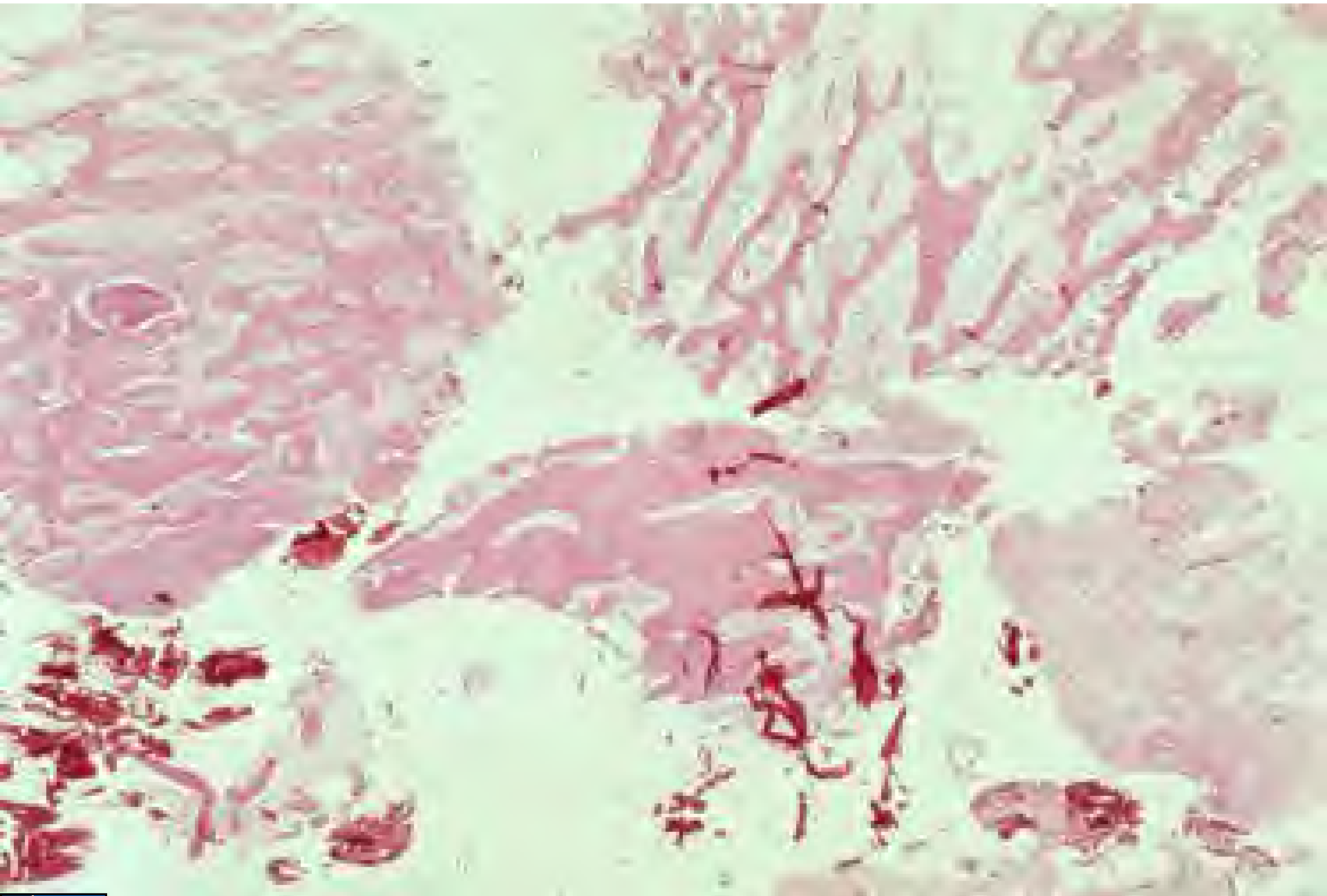
- Intramembranous bone formation
- Endochondral bone formation
- Remodeling
- Woven bone, cartilage fibrous tissue
- Osteoprogenitor cell

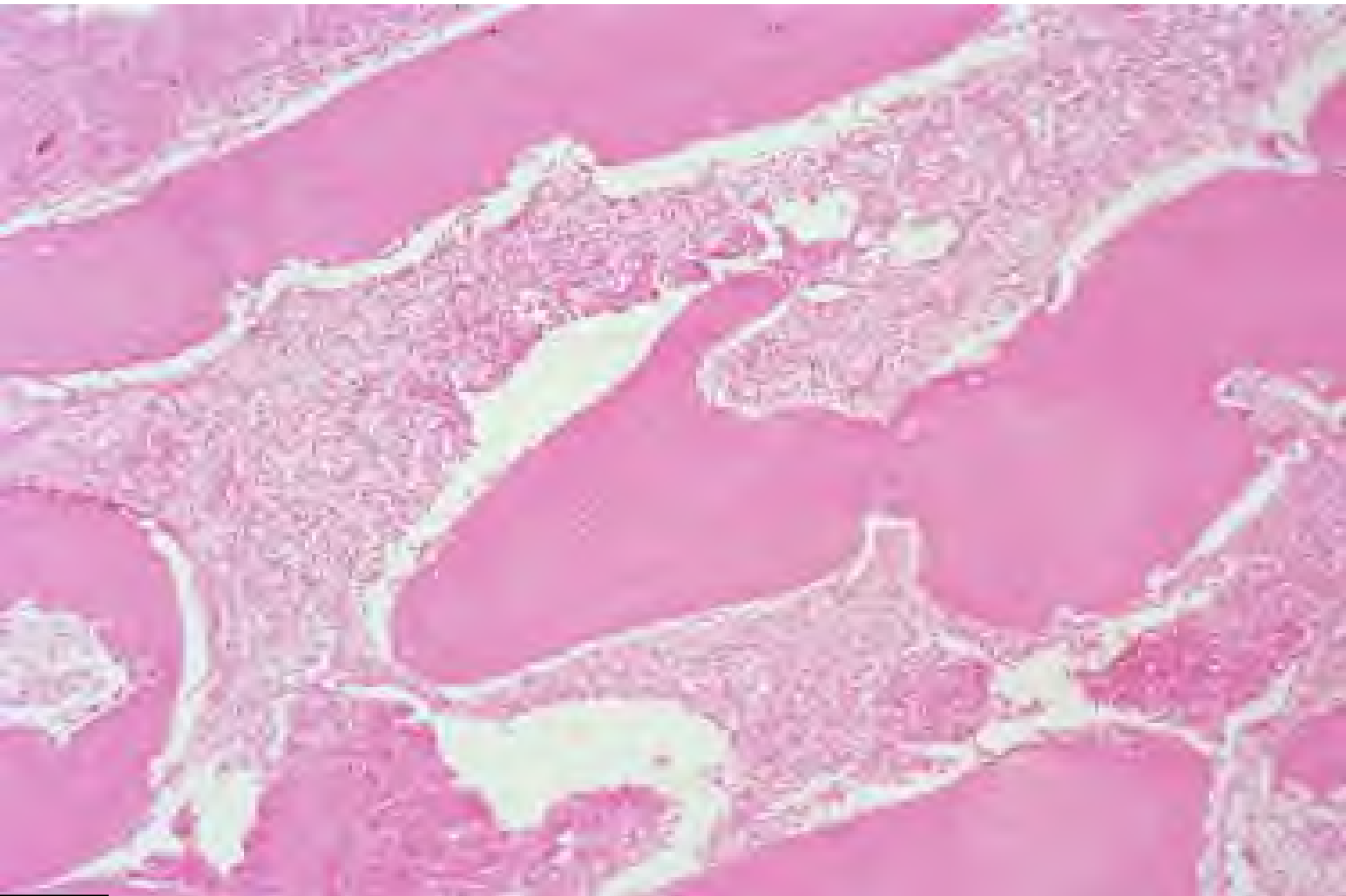
Osteomyelitis

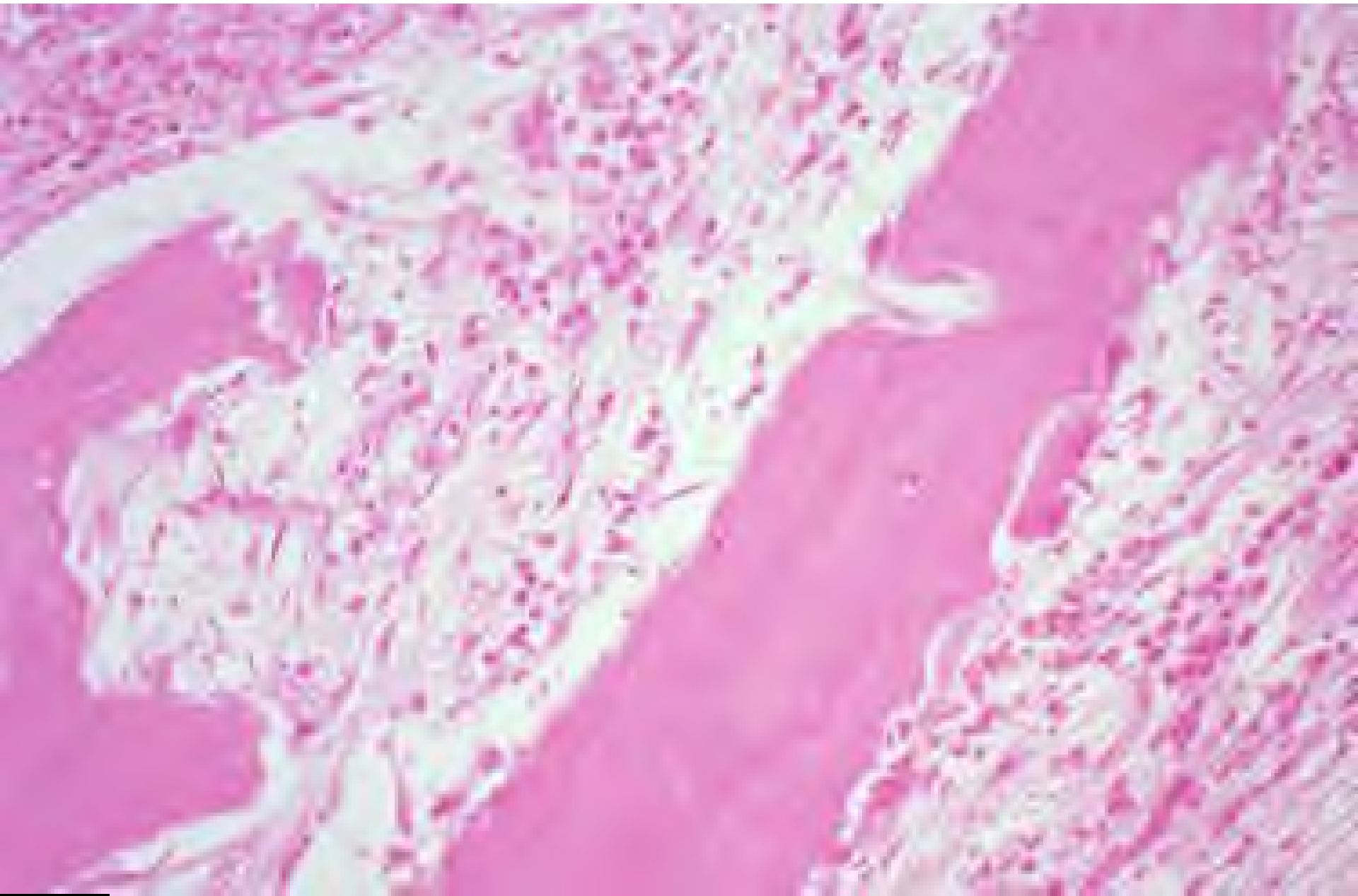
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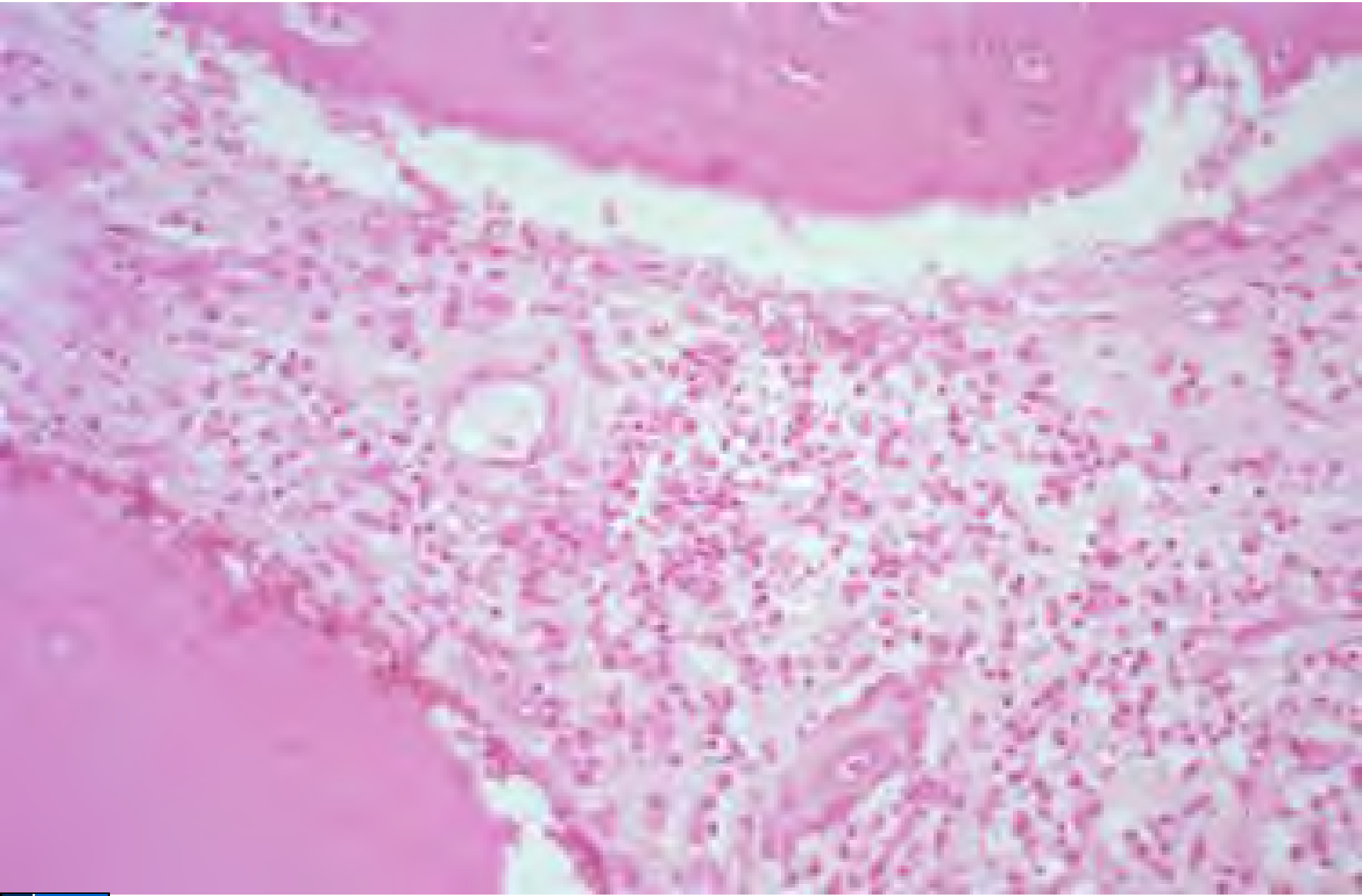


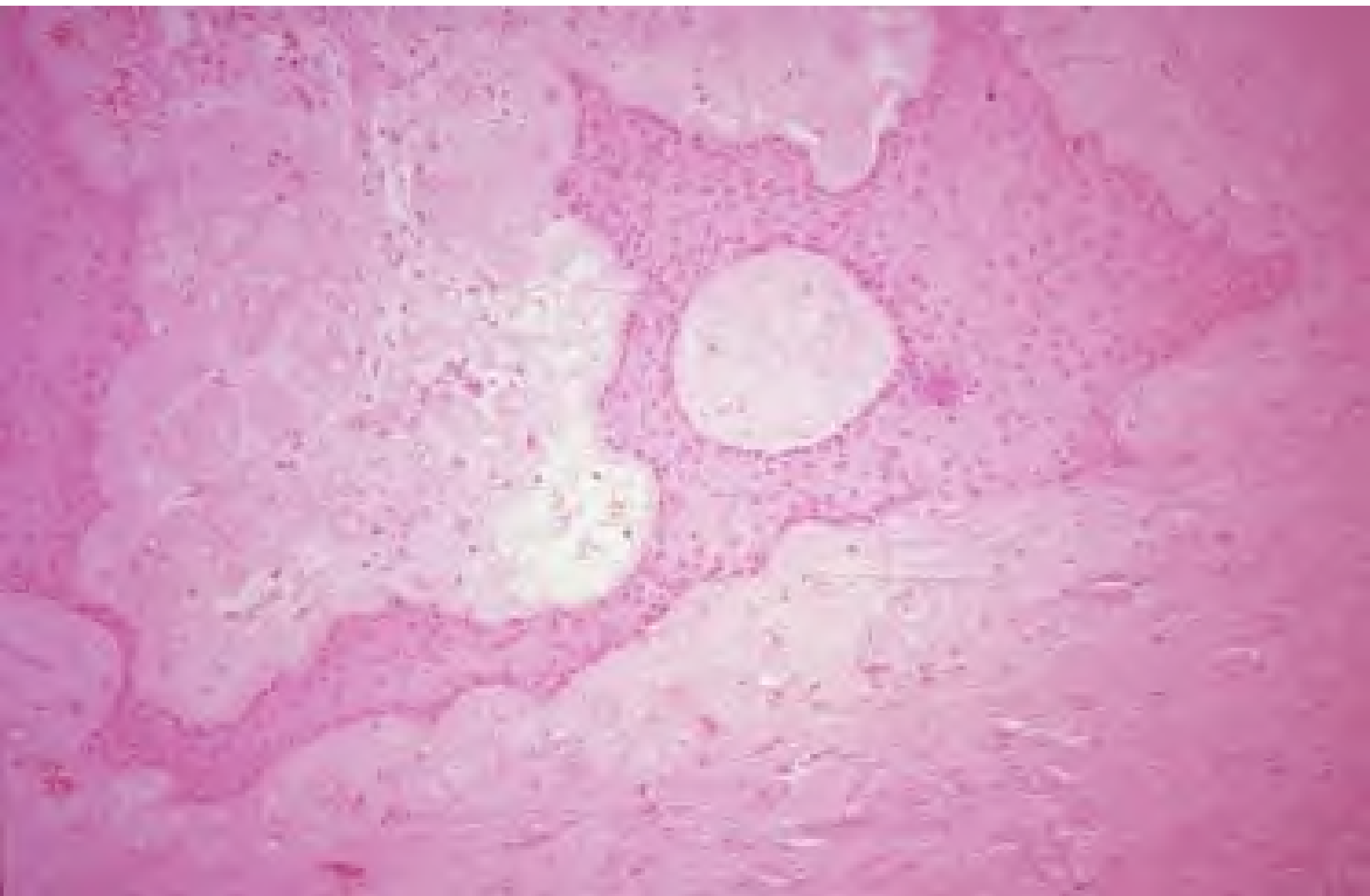


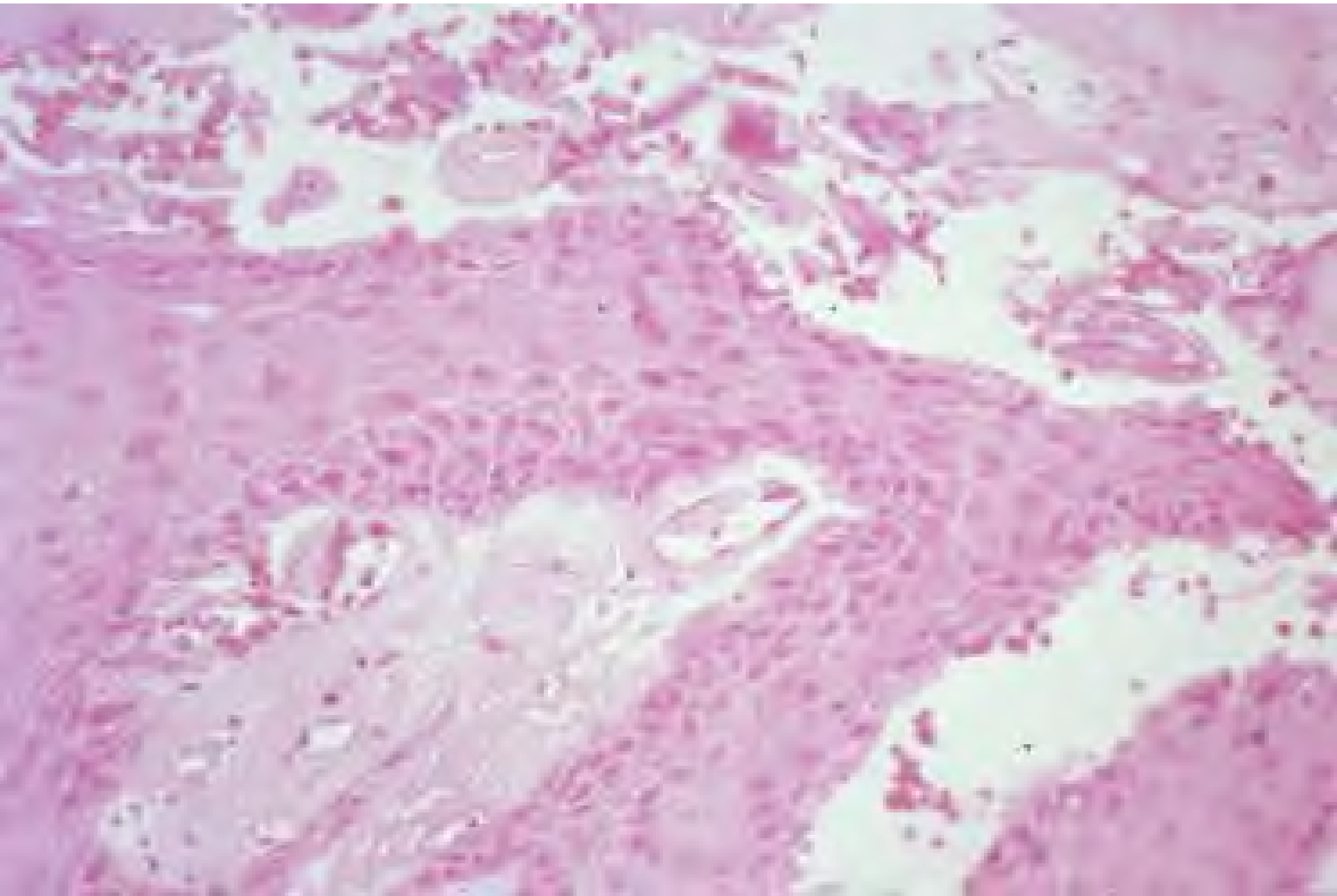






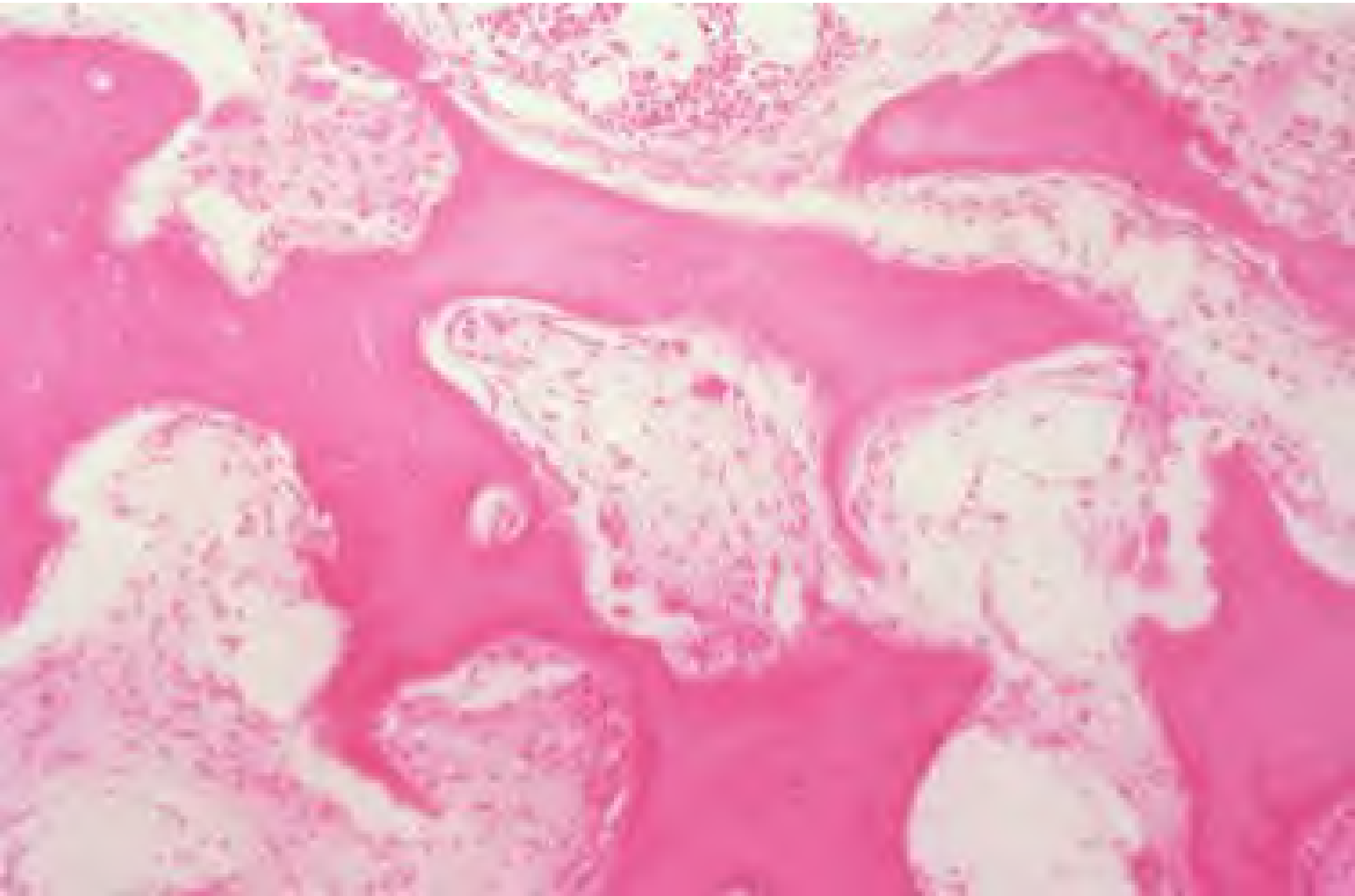


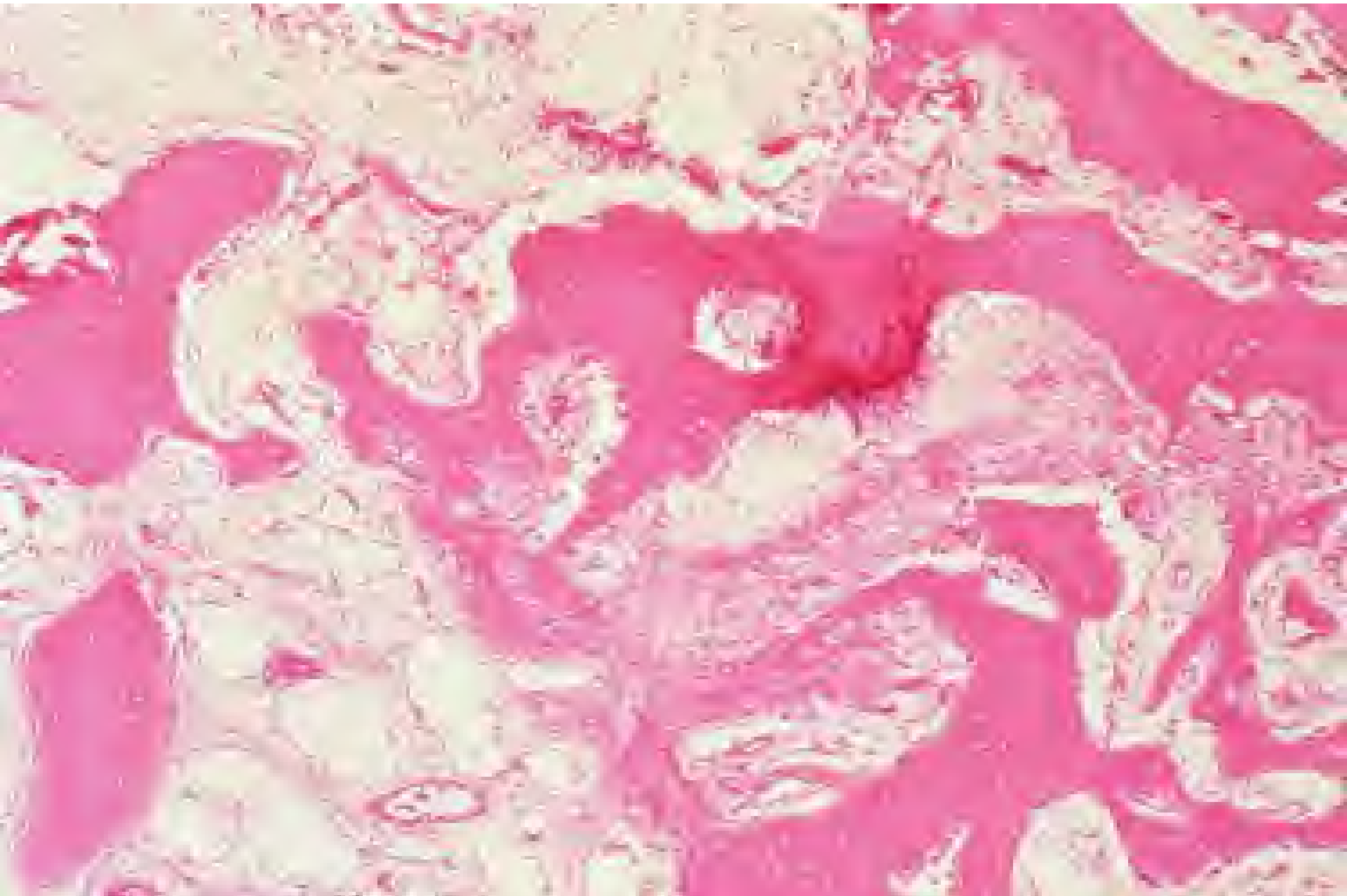


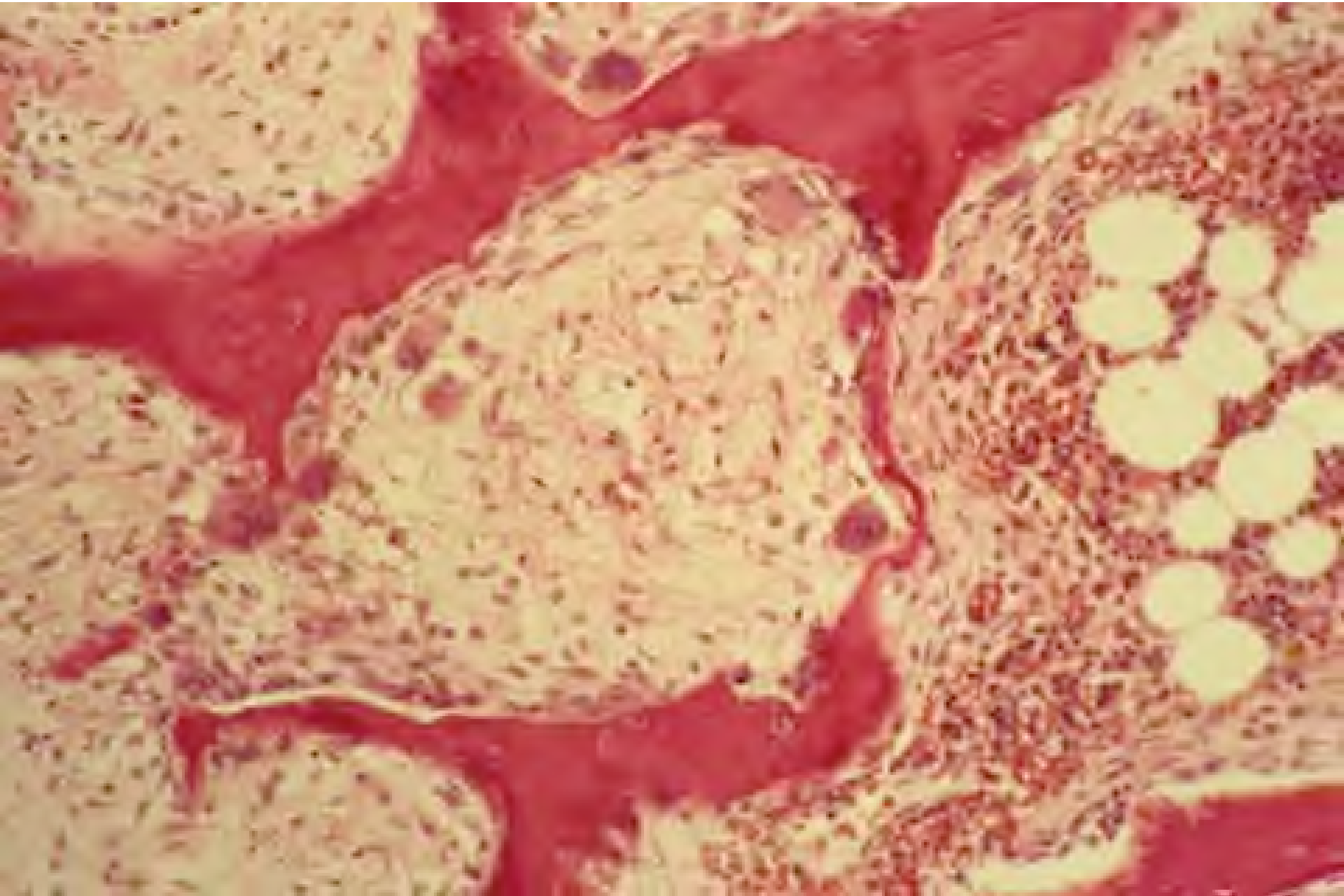


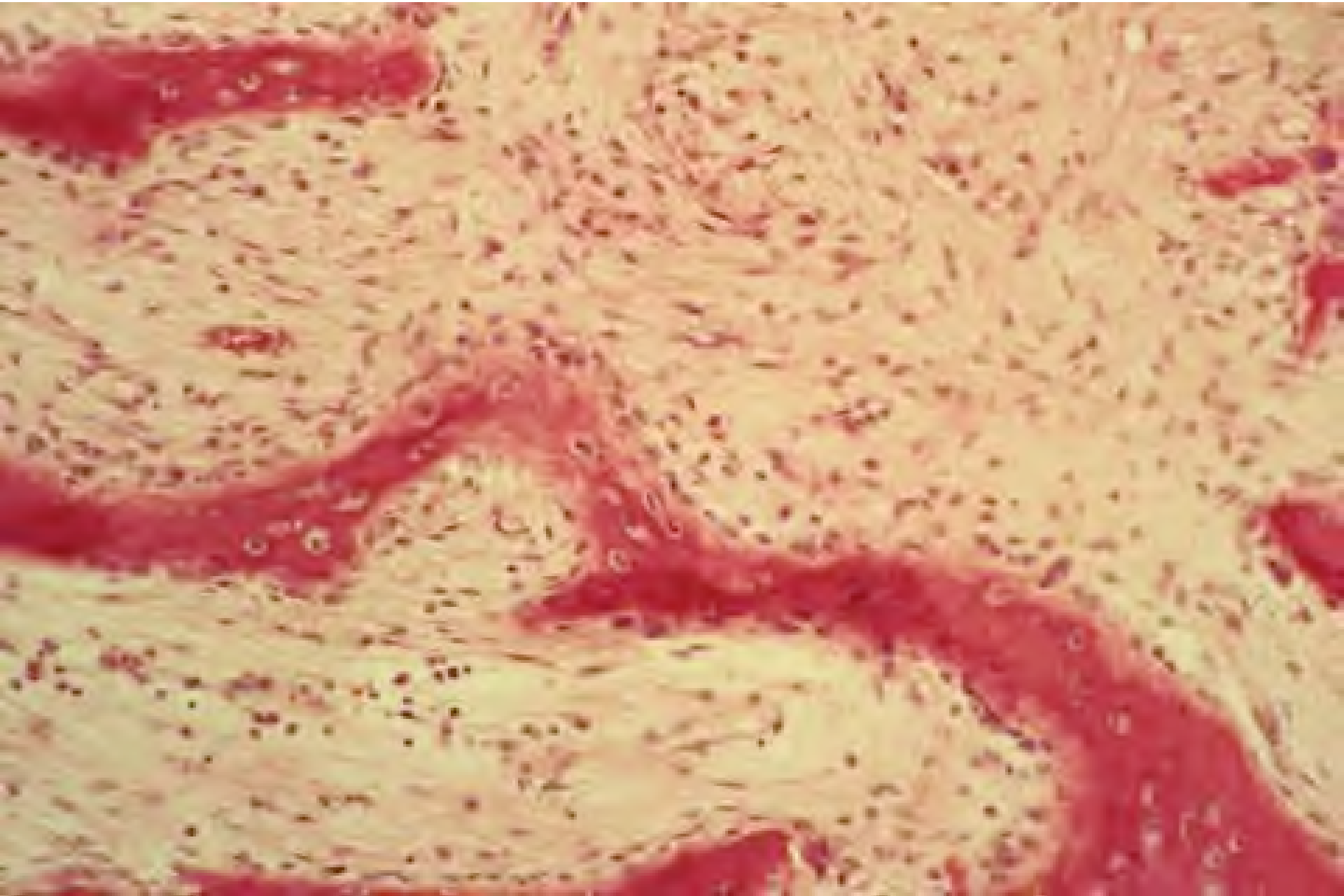
Renal osteodystrophy
(osteitis fibrosa cystica)
Secondary hyperparathyroidism

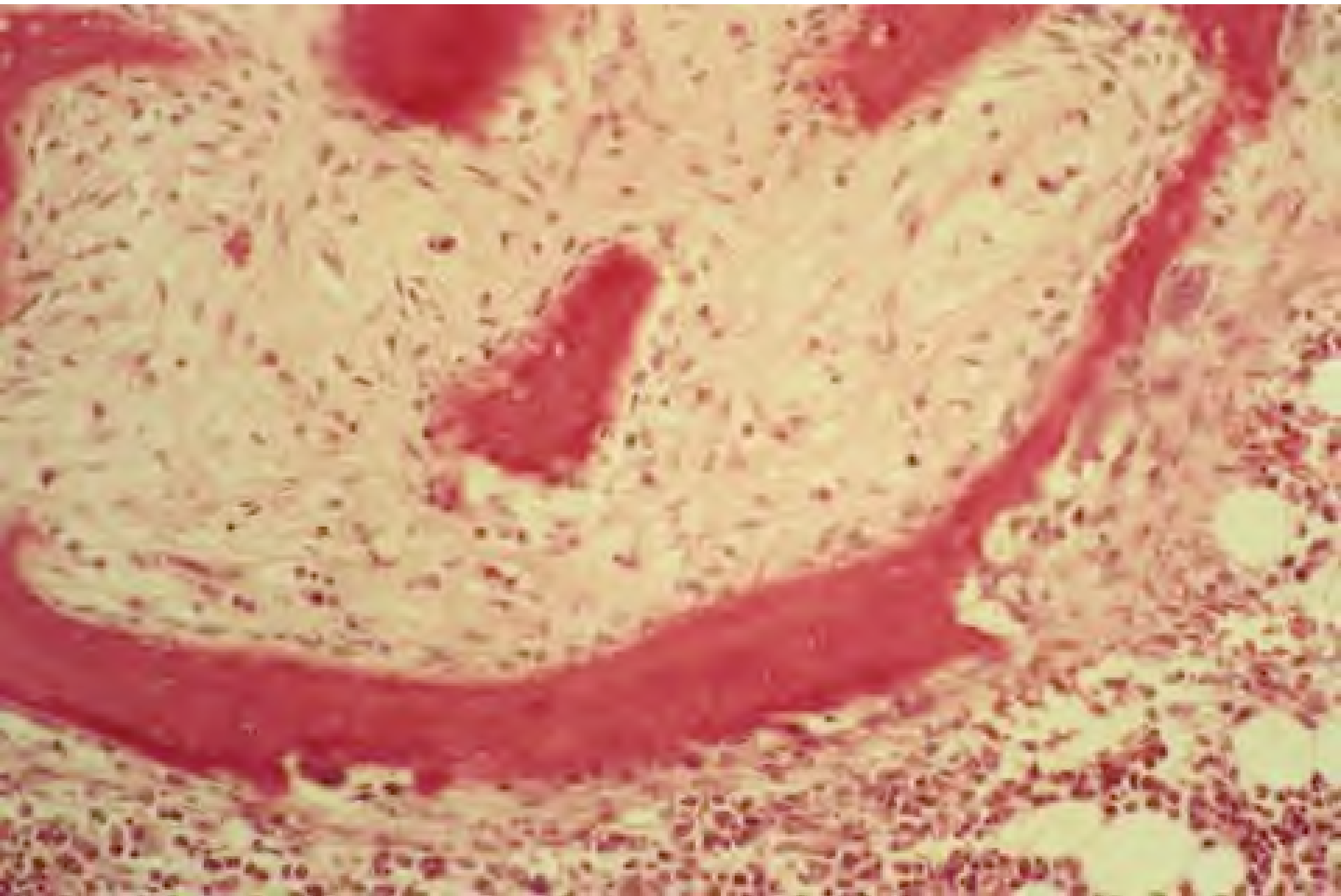








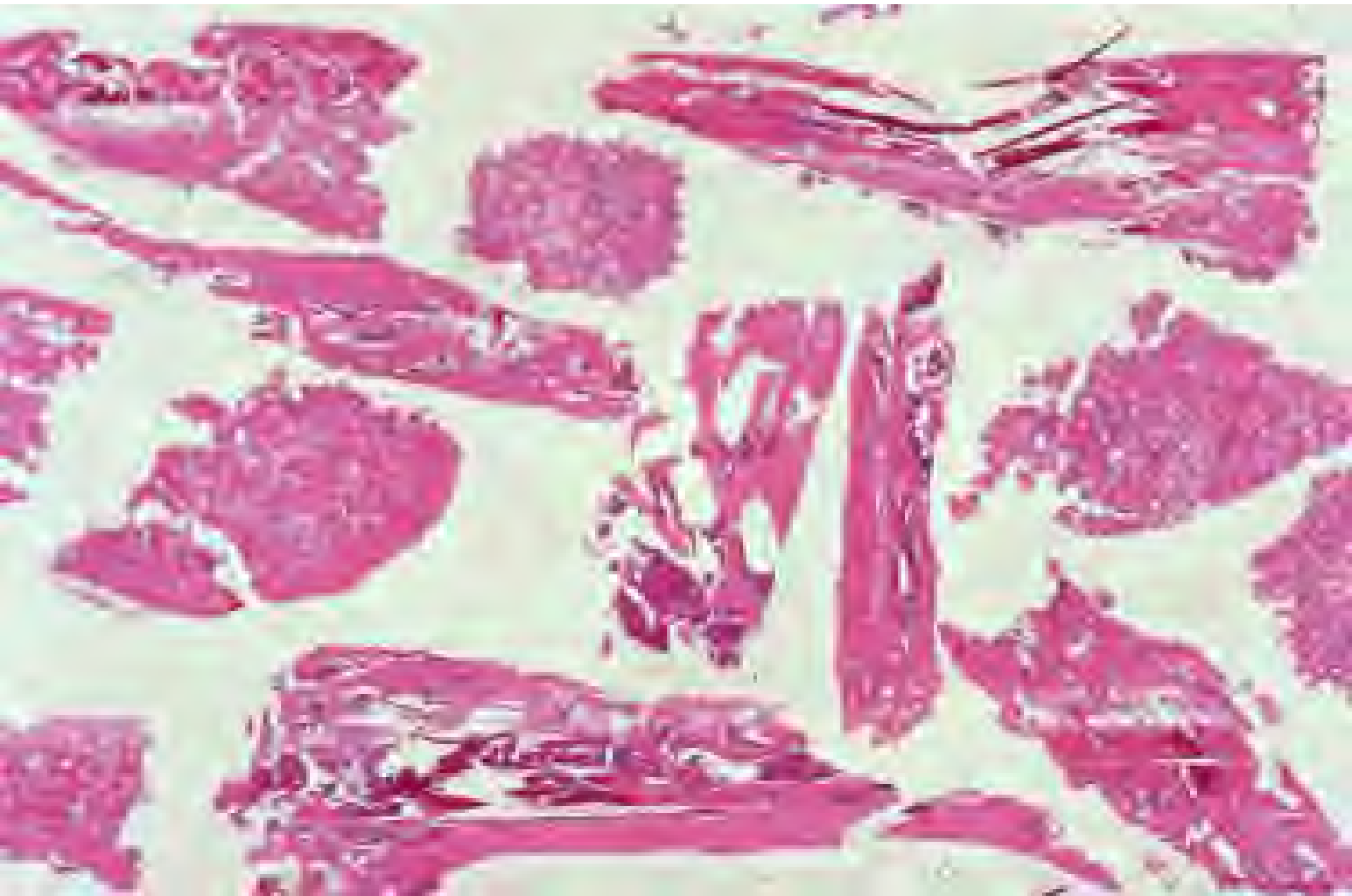


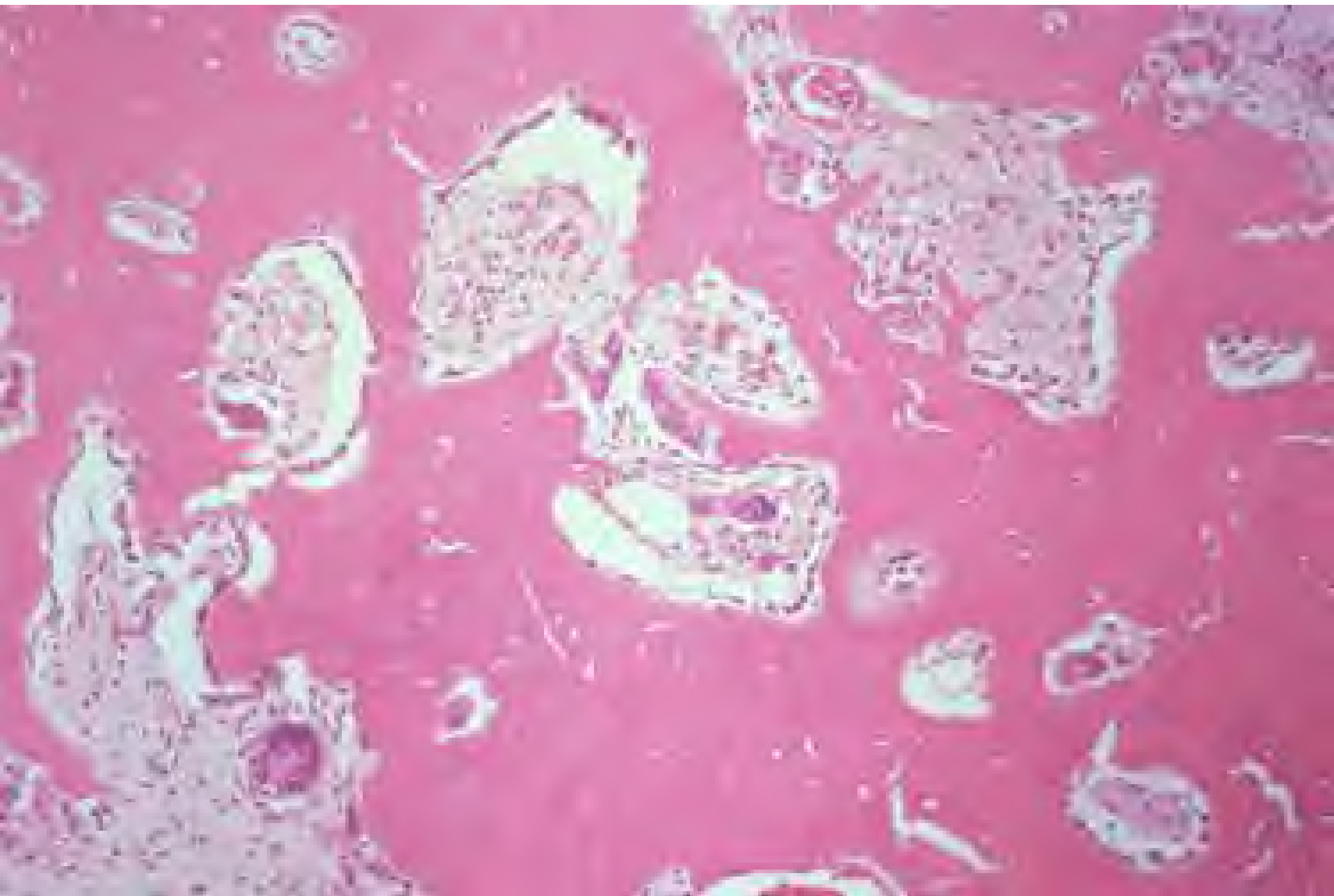


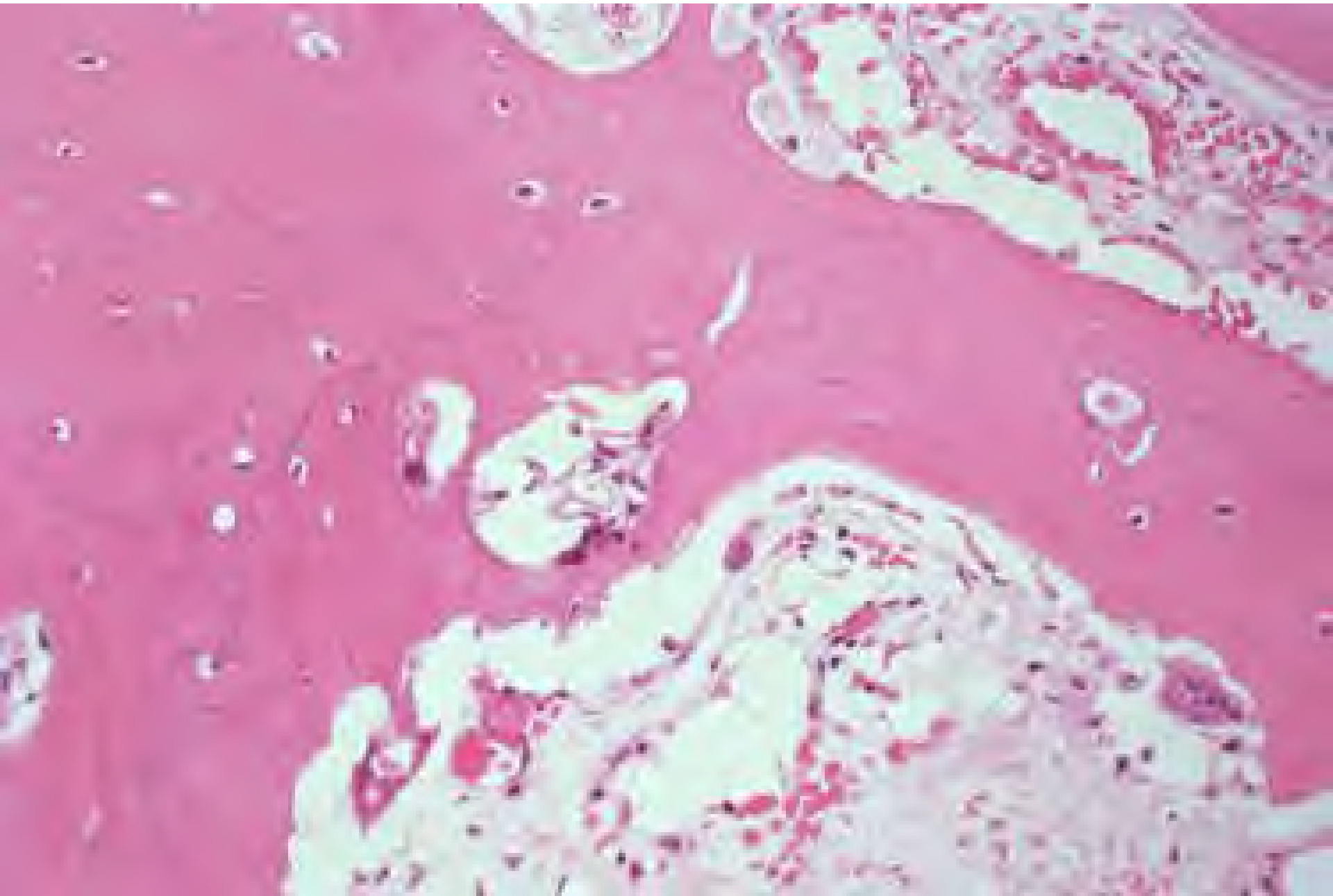
Paget's Disease of Bone (osteitis deformans)

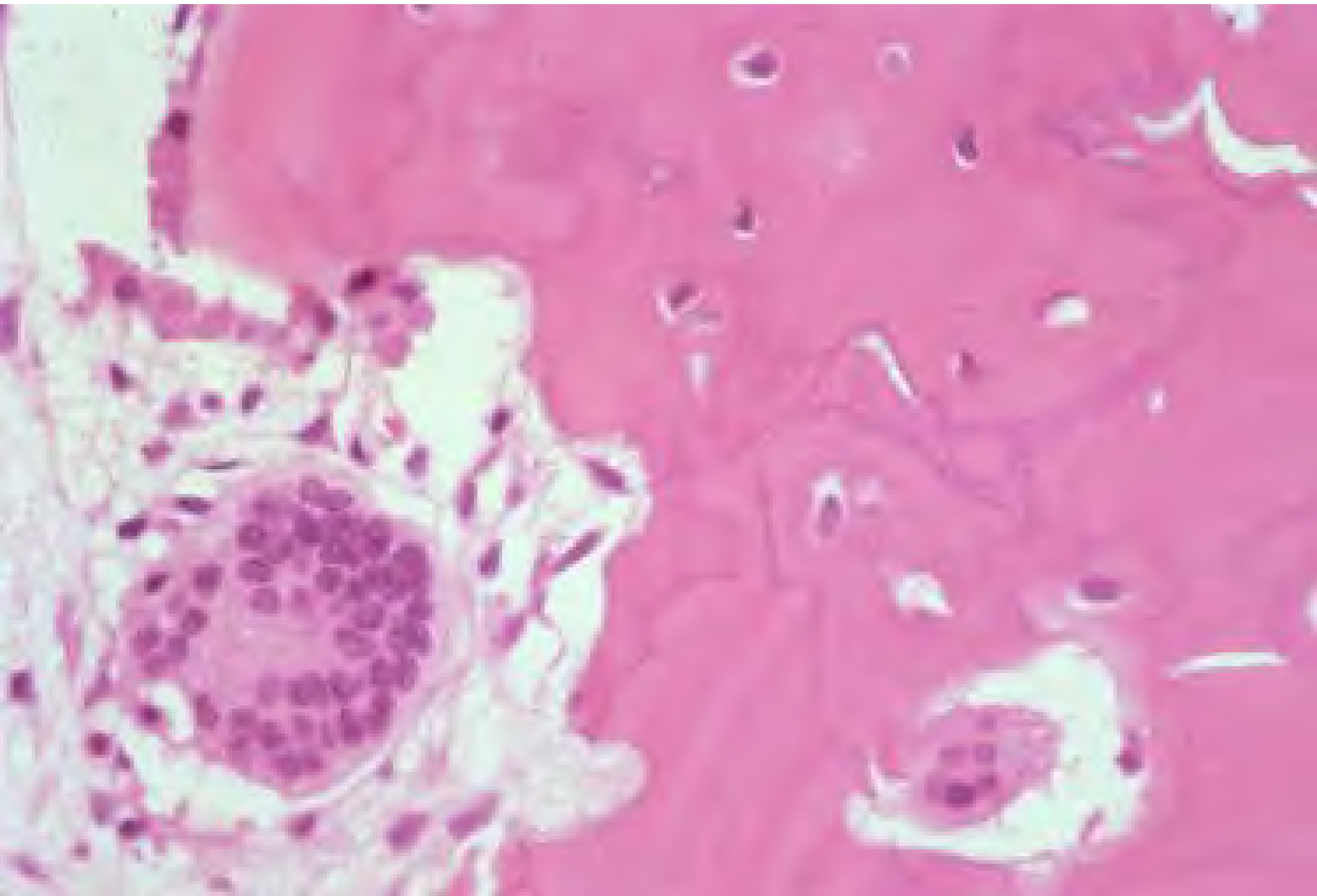


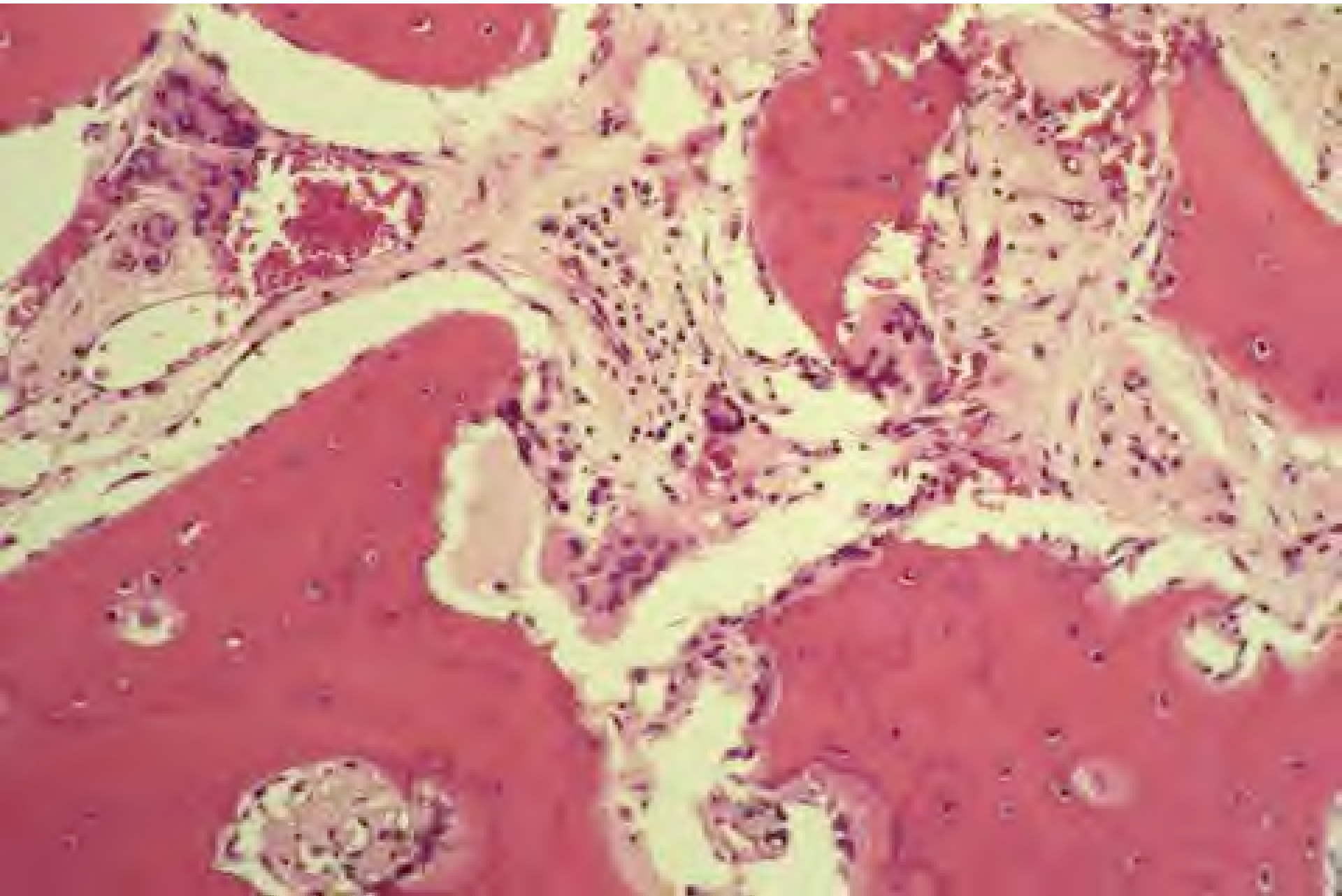


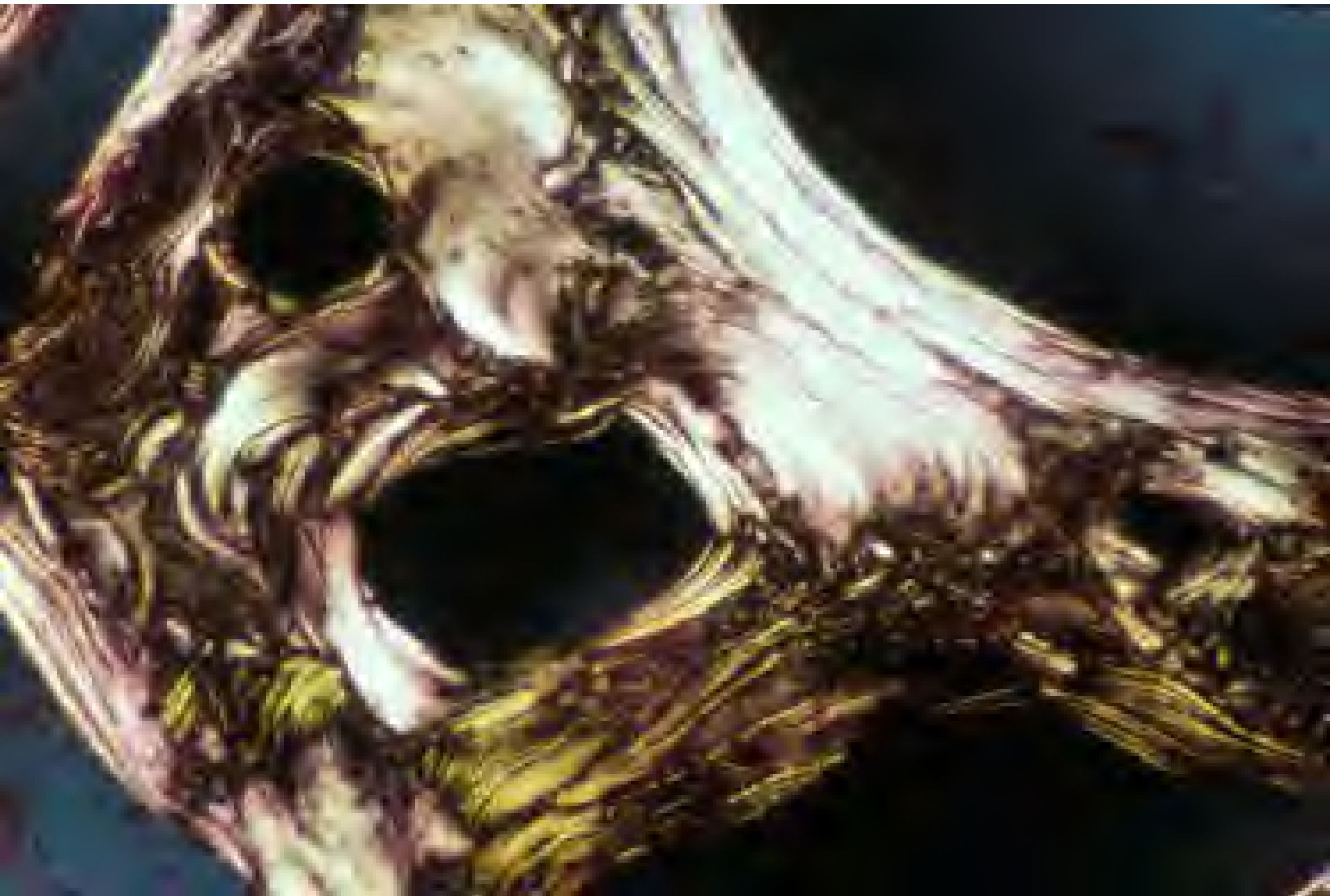


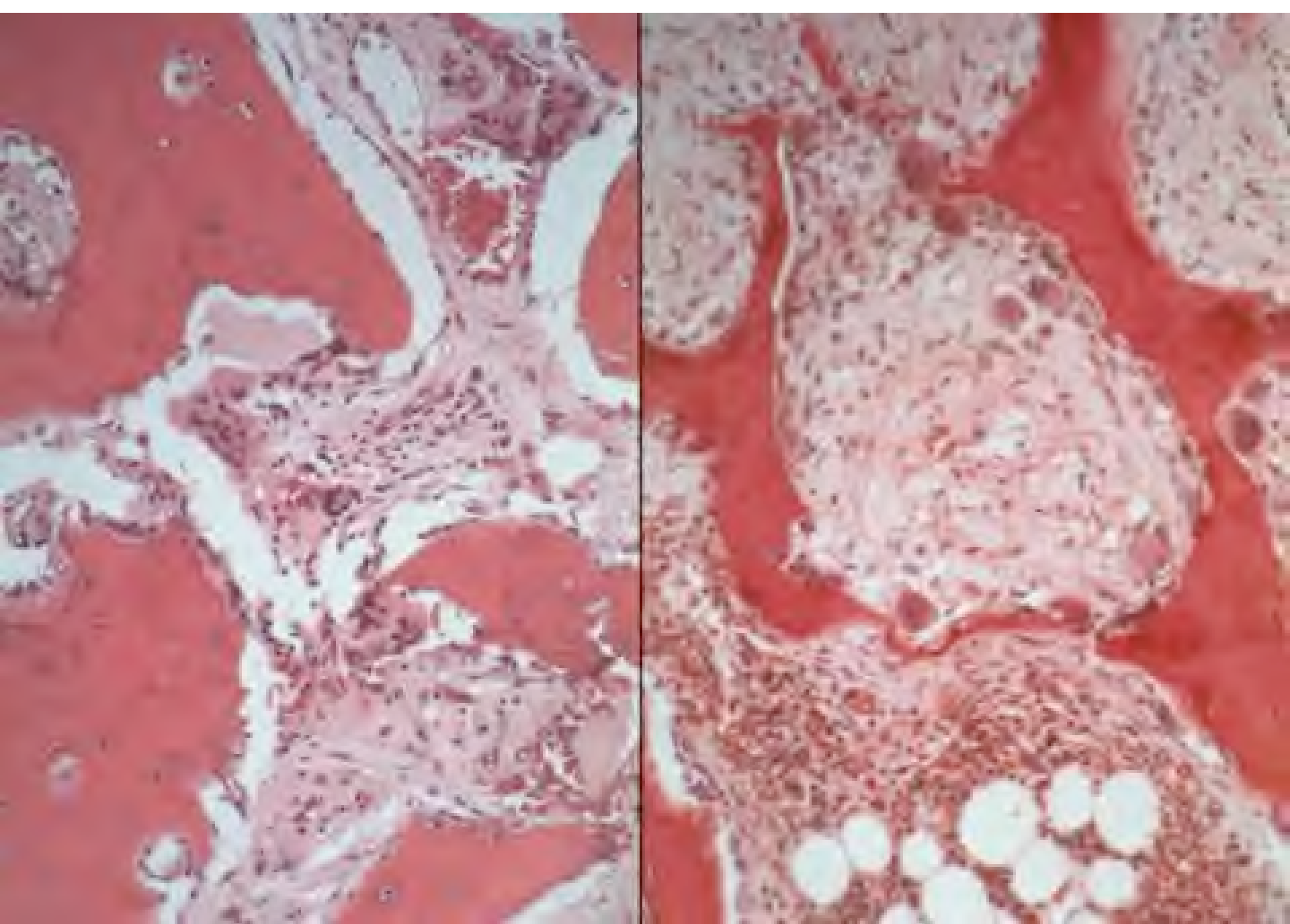








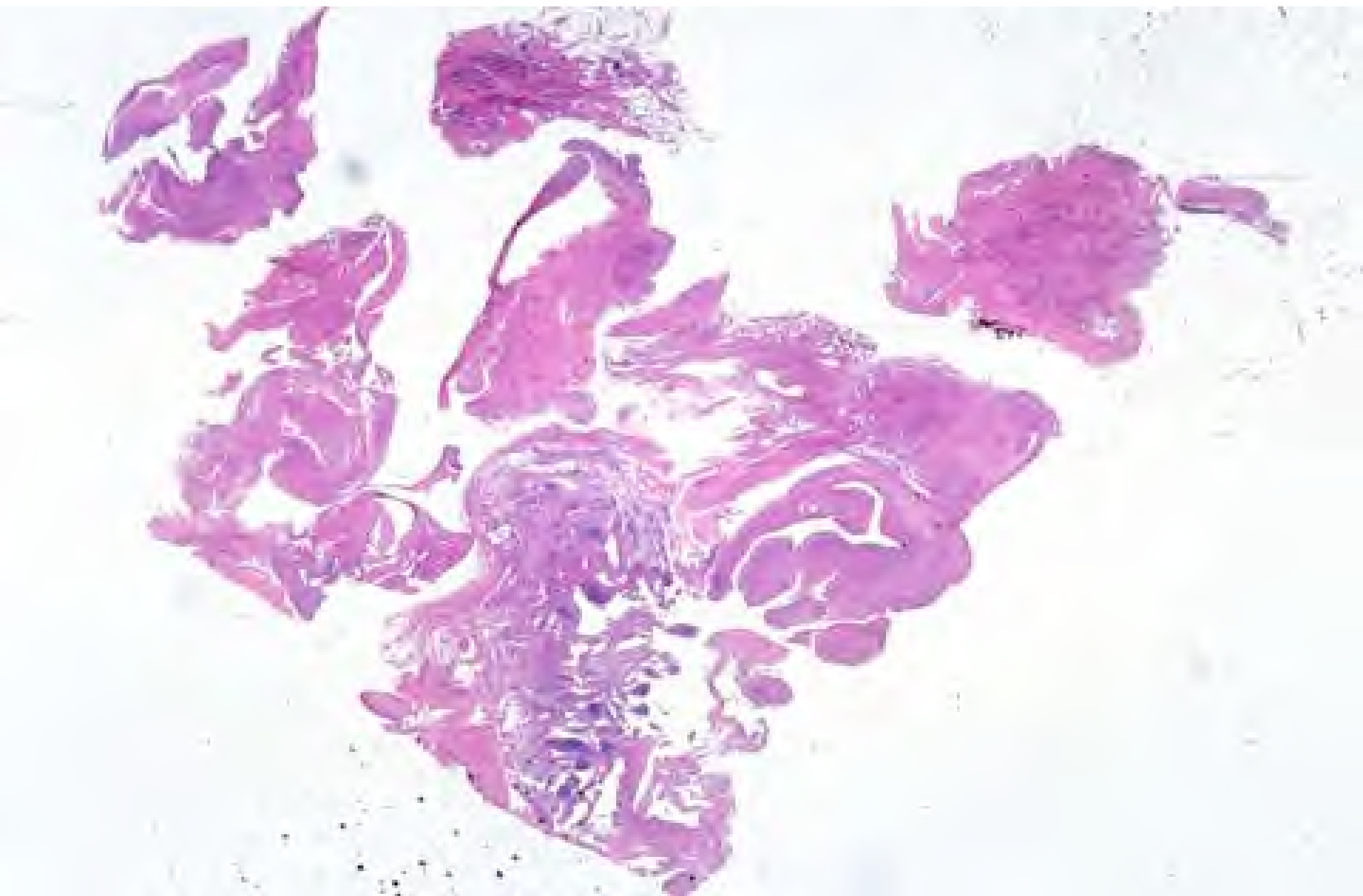


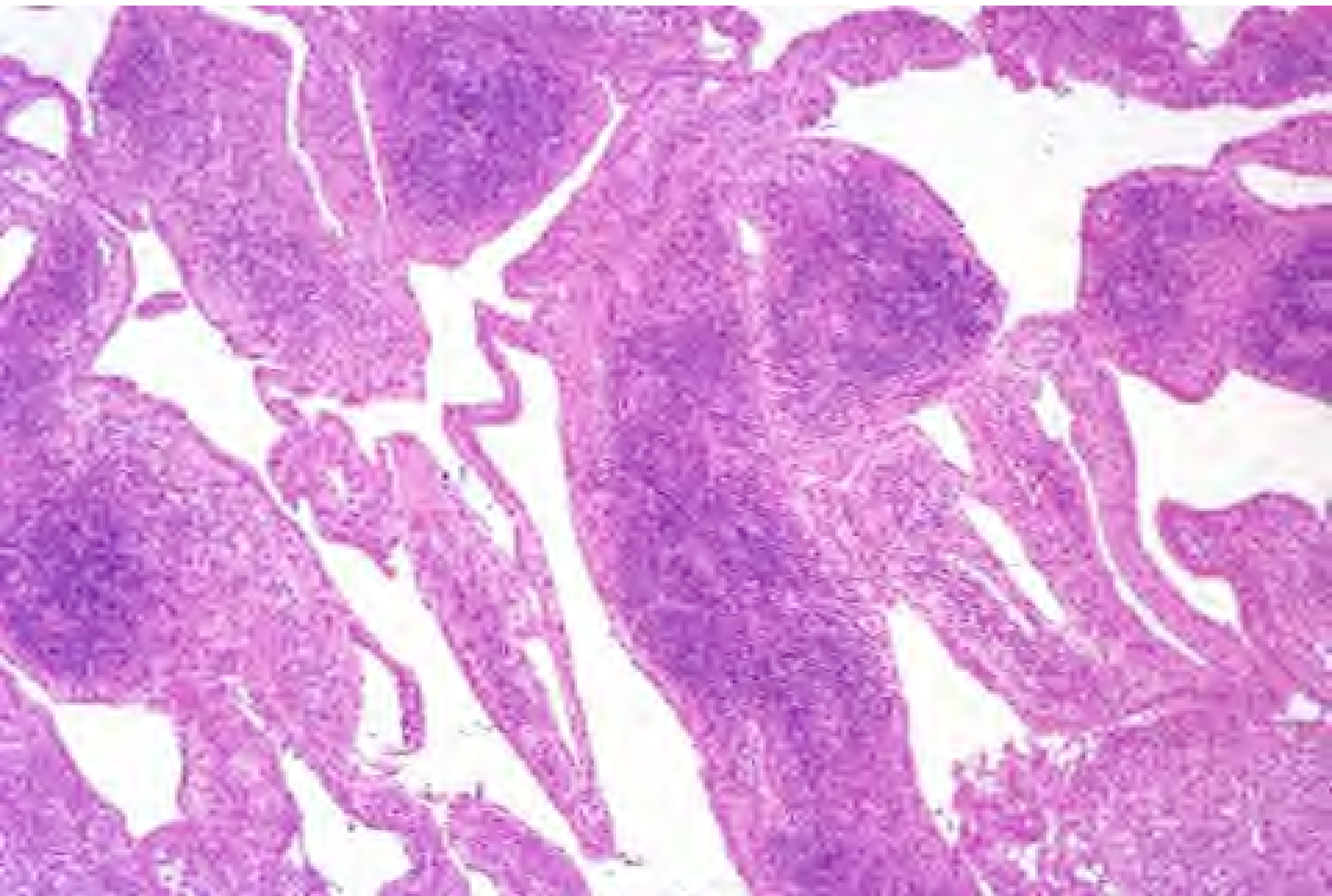


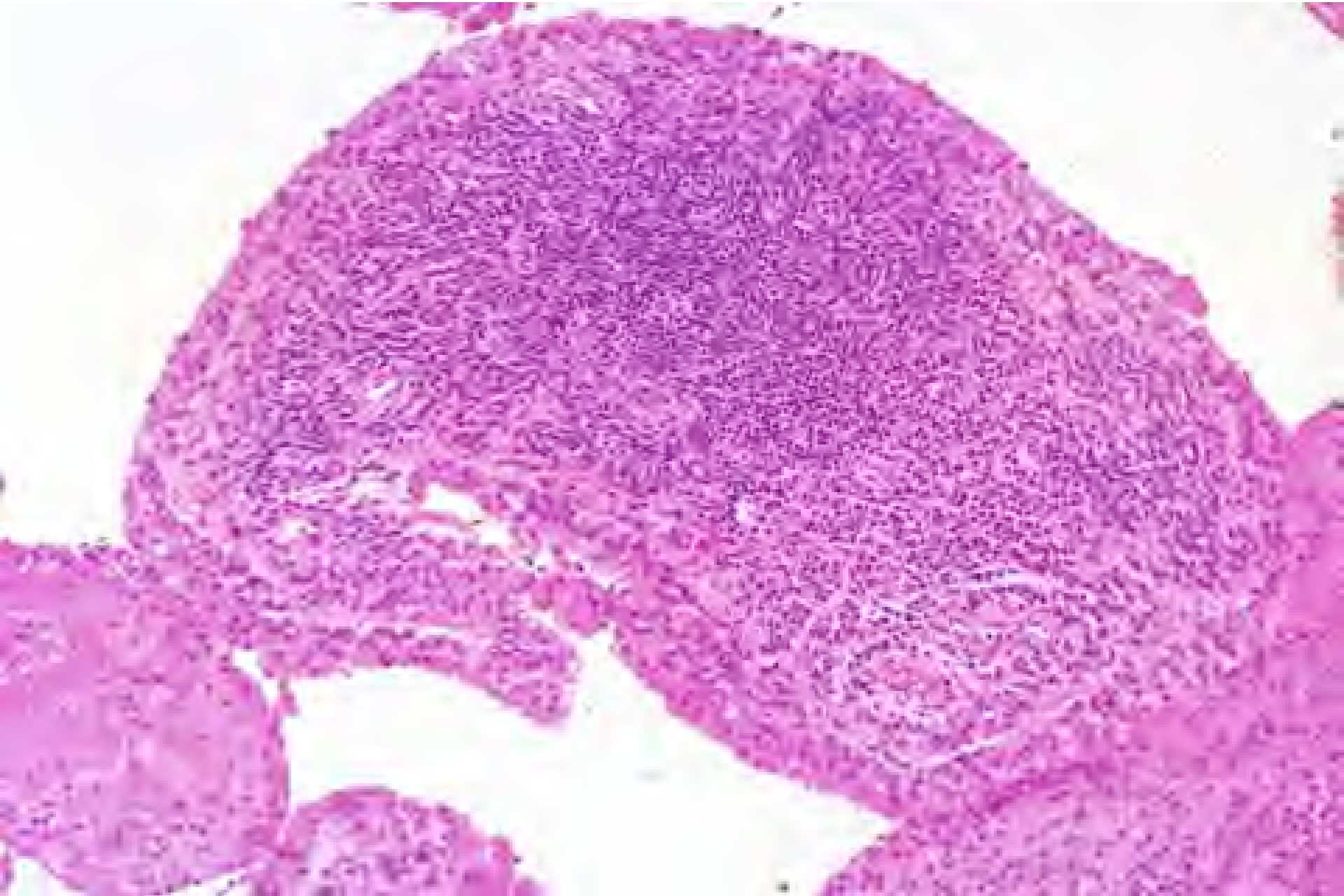
Musculoskeletal Sequence Lab # 2

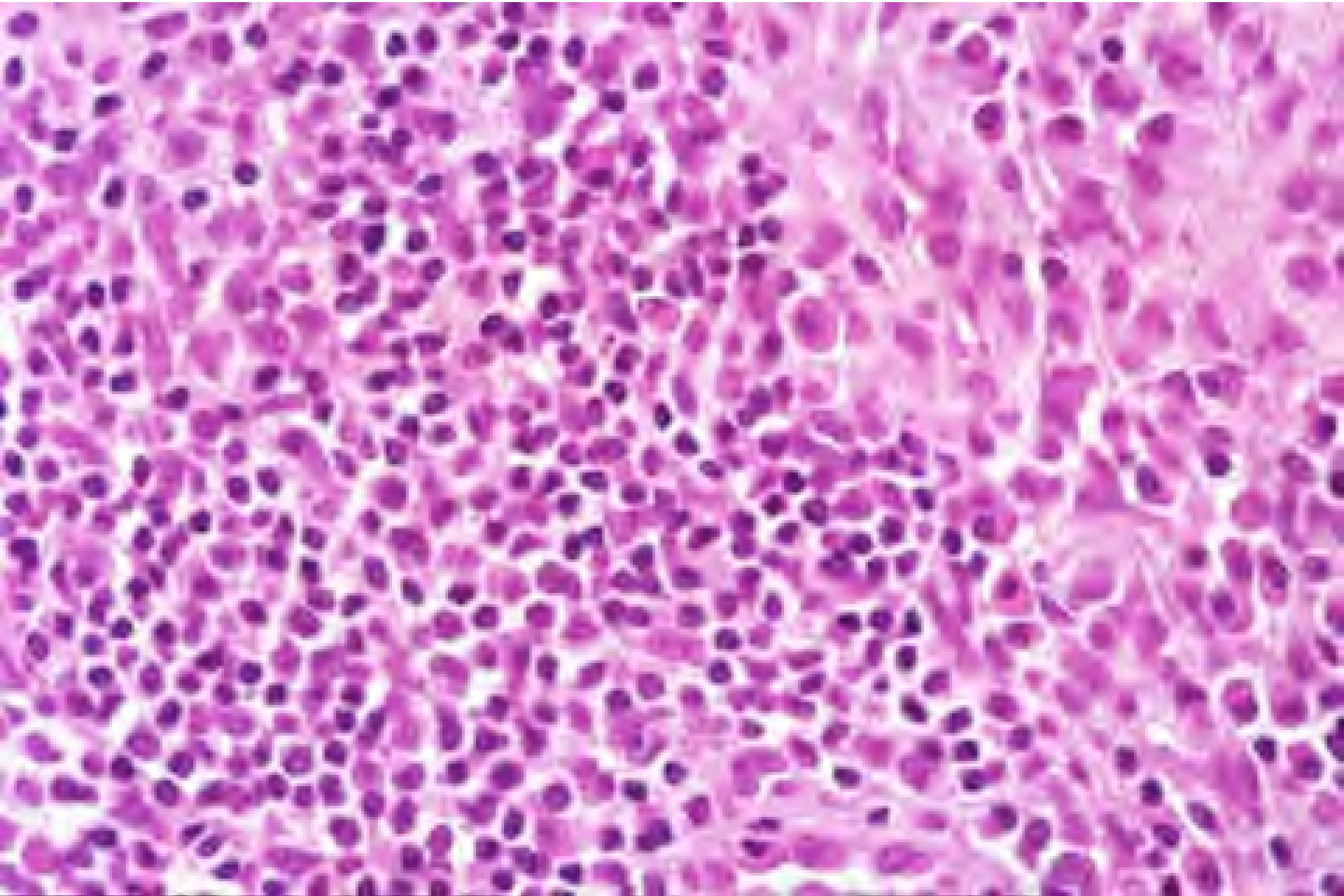
193 & 197	Rheumatoid arthritis
196	Osteoarthritis
12	Gouty tophus
111	Keloid
174	Hemangioma of infancy

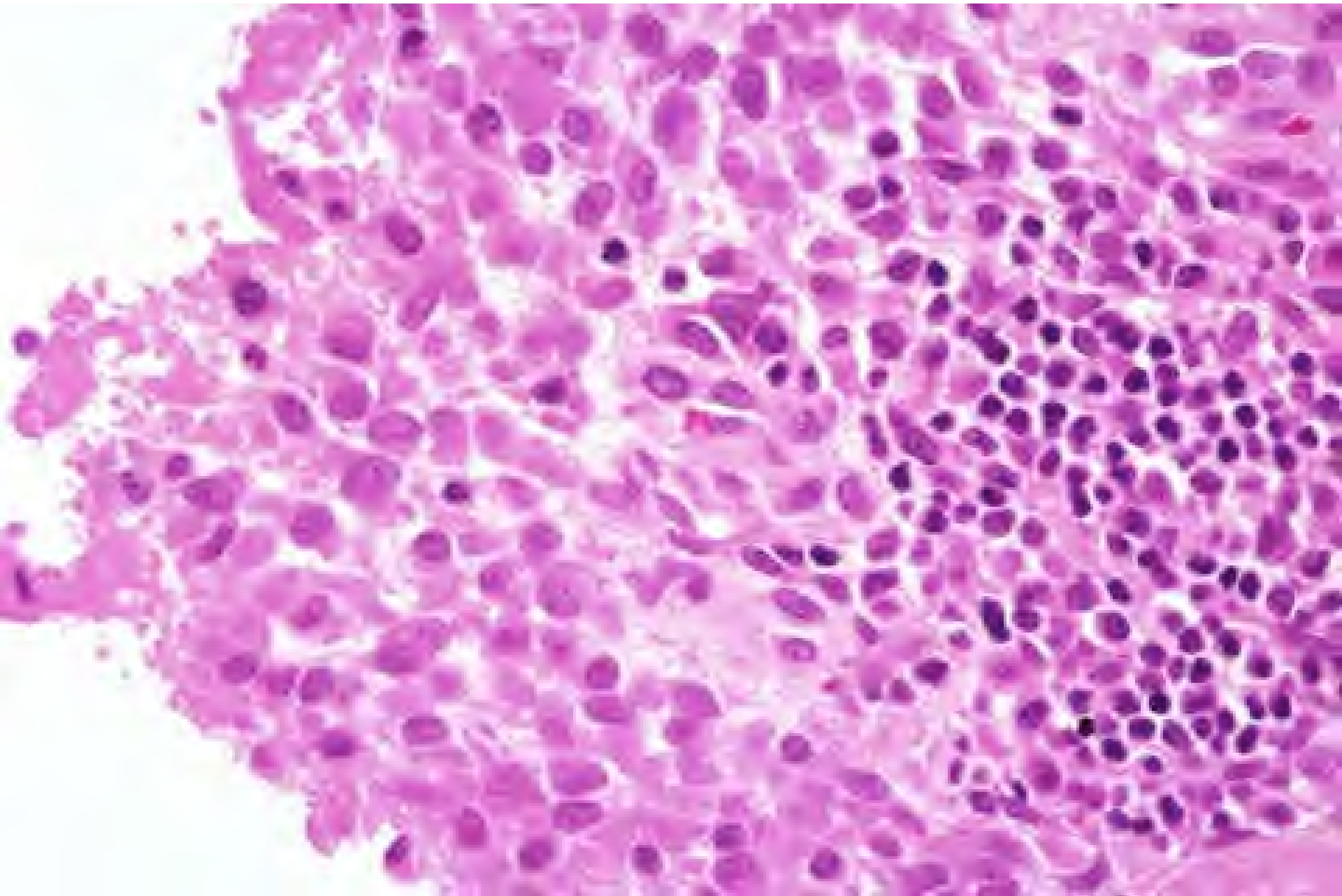
Rheumatoid arthritis

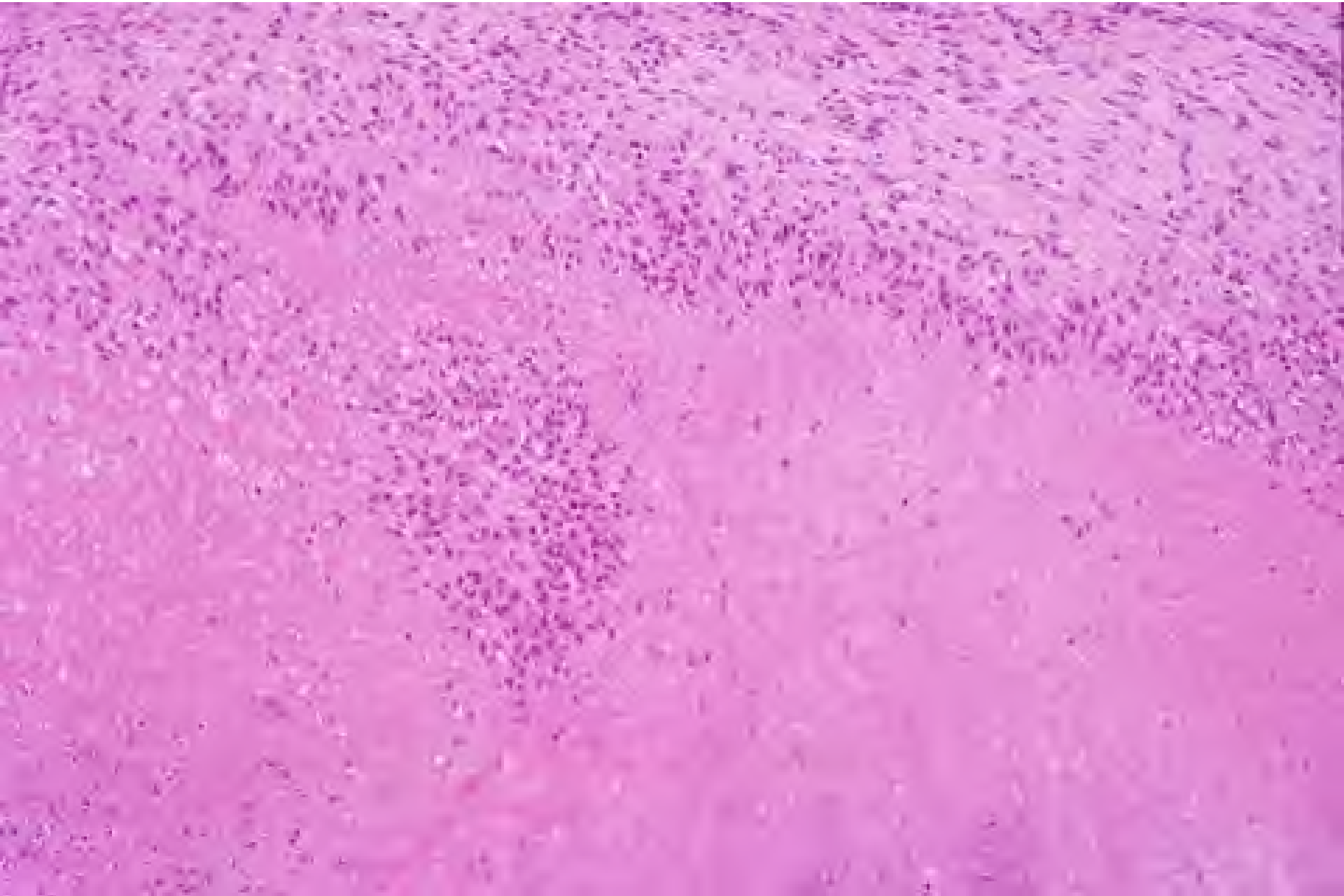


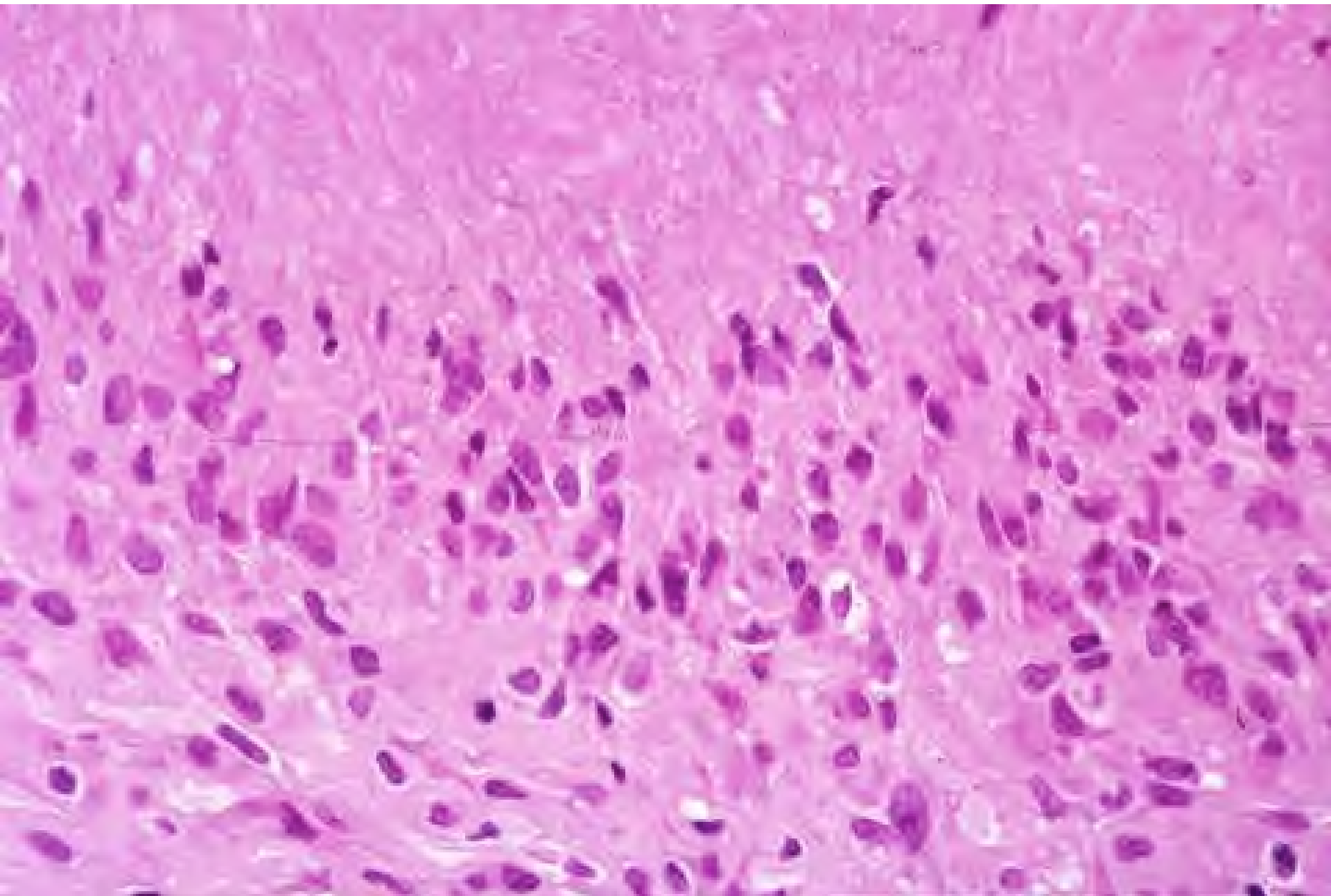


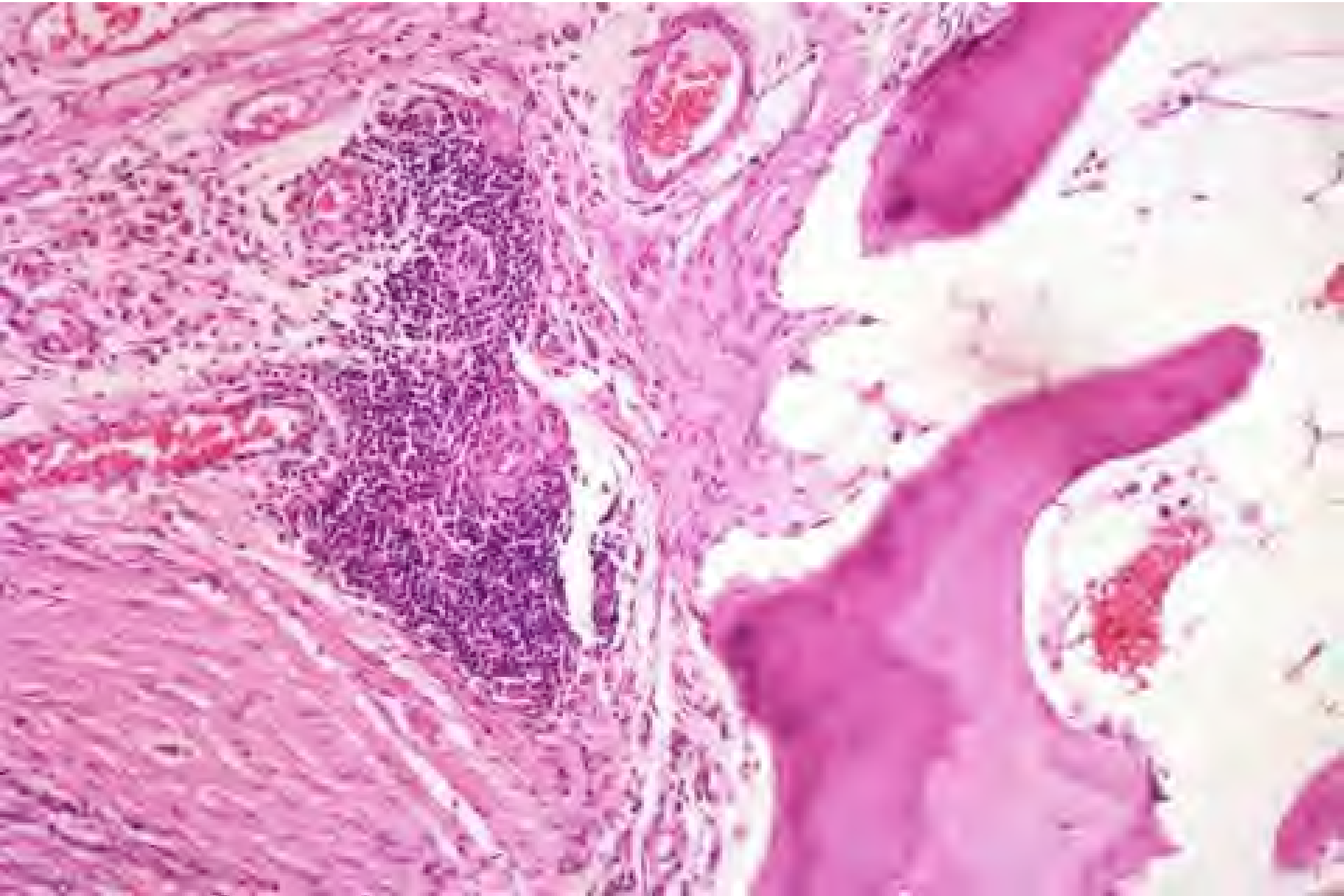


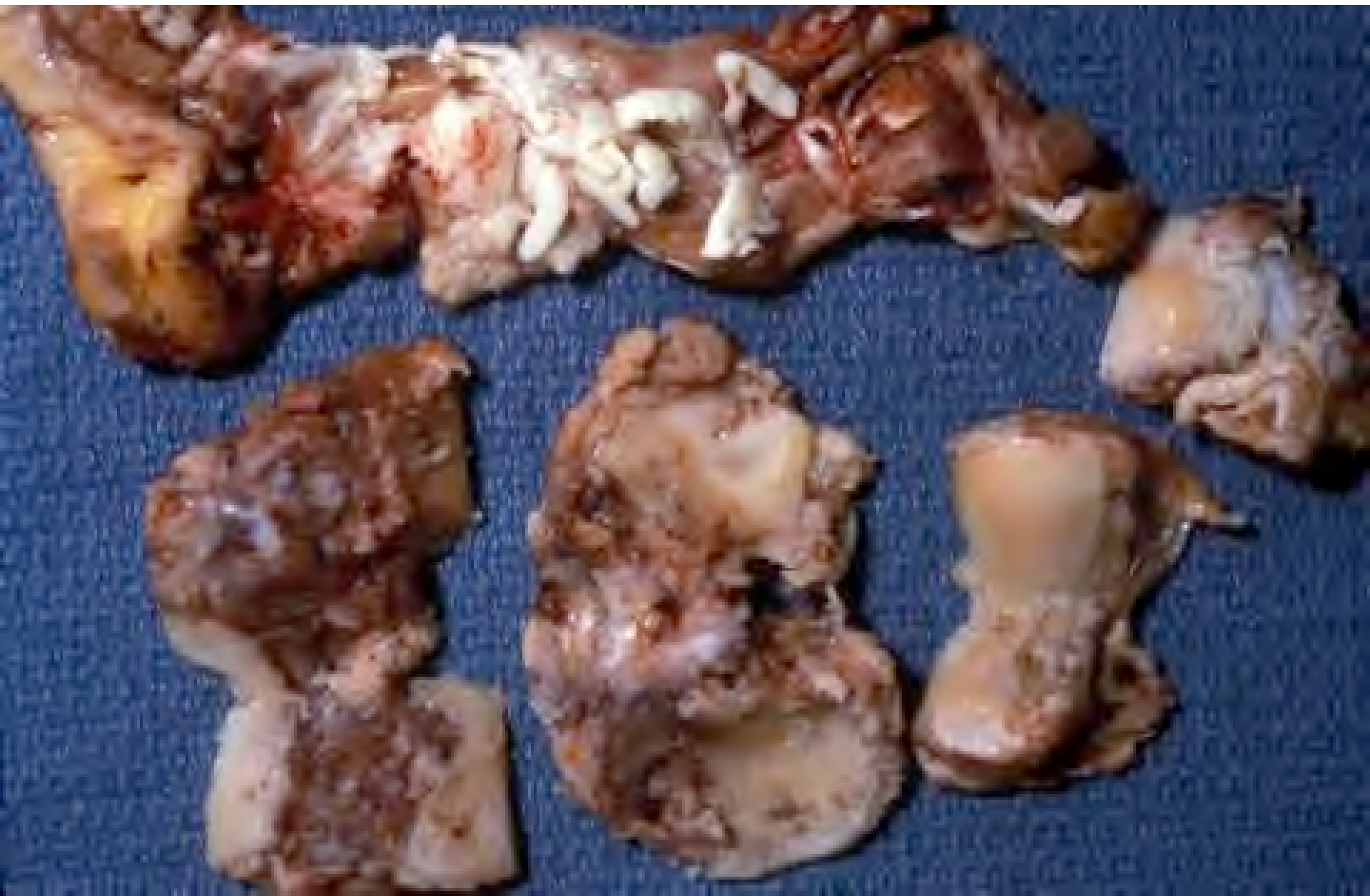










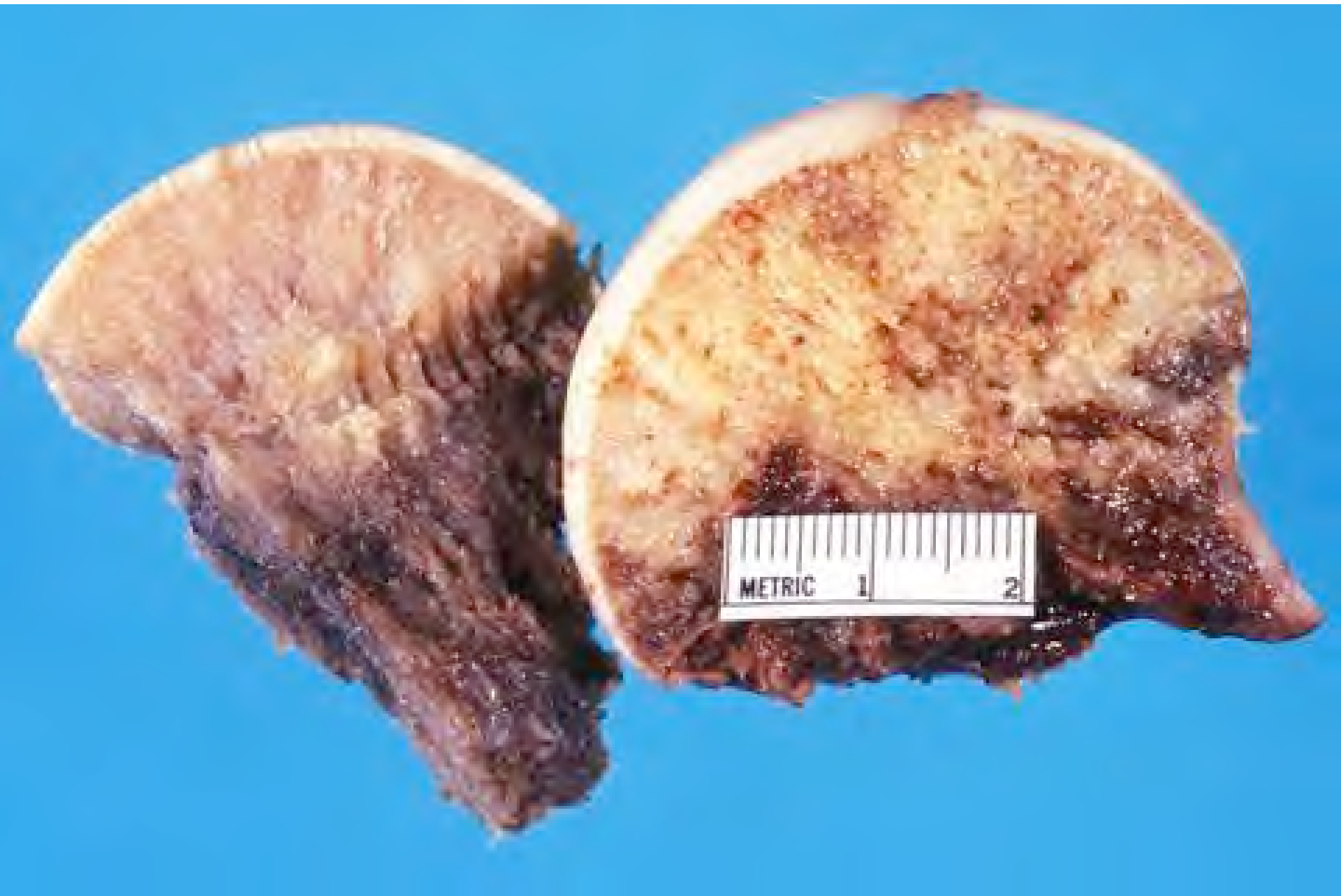




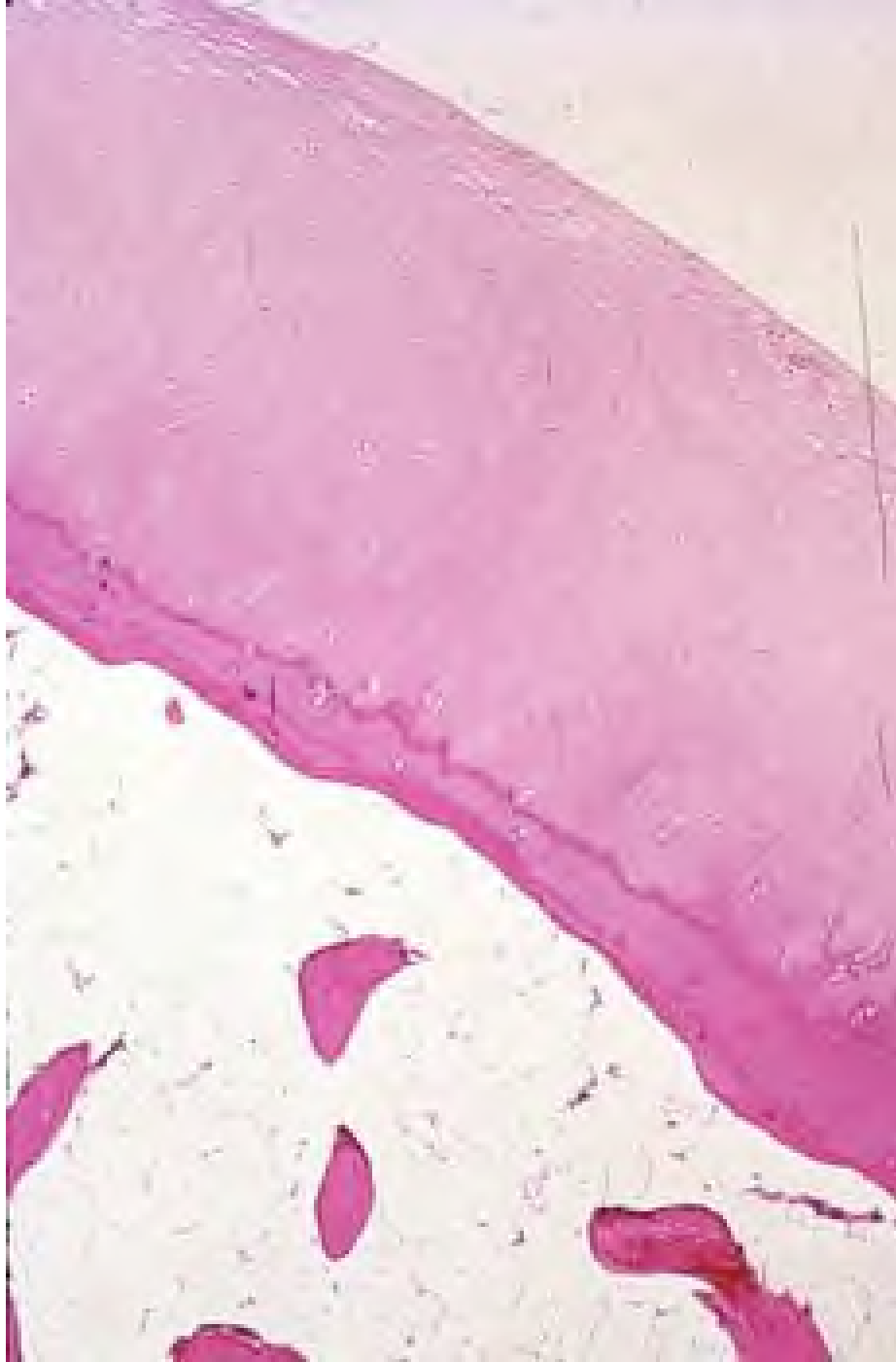


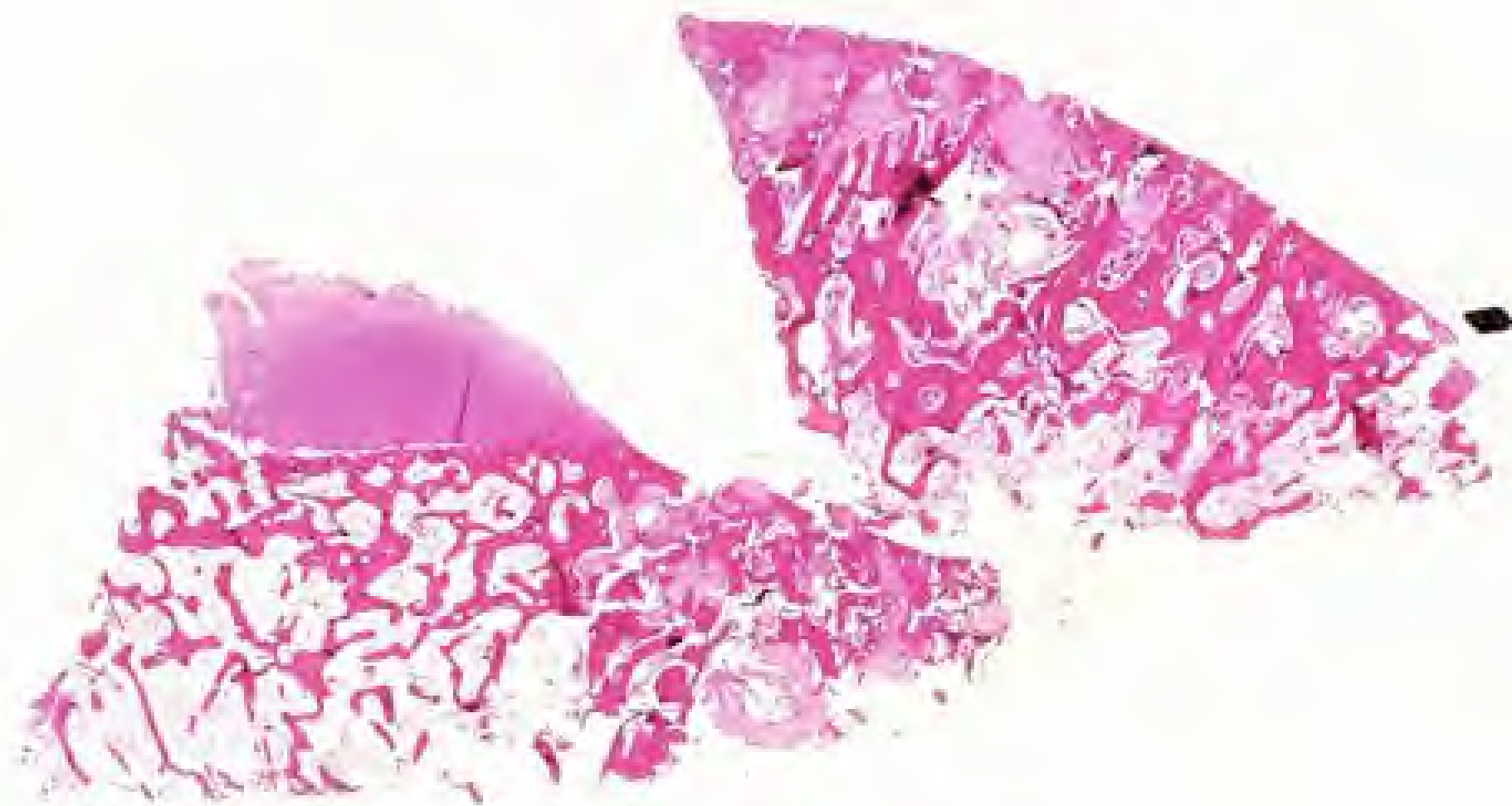


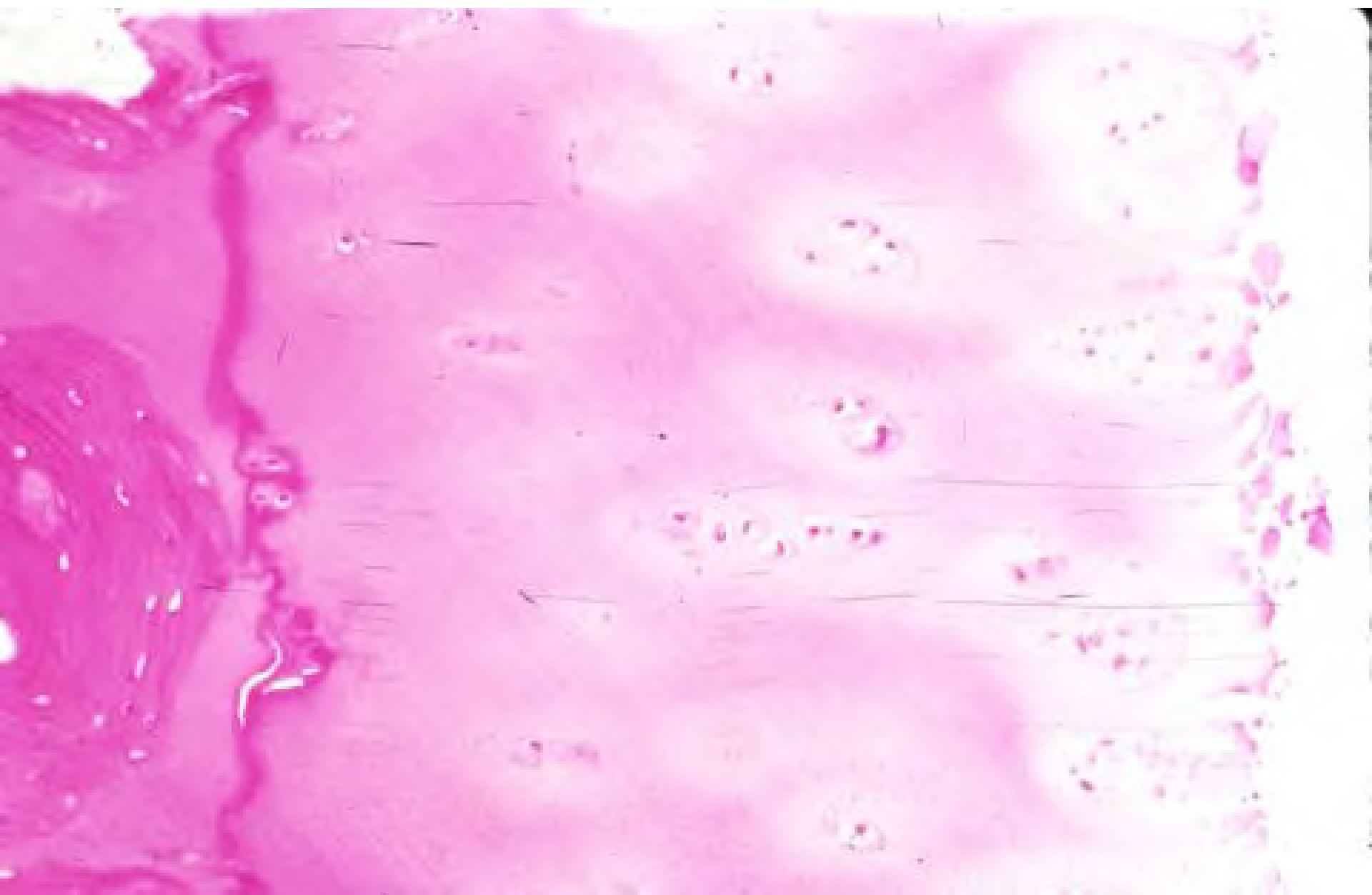
Osteoarthritis



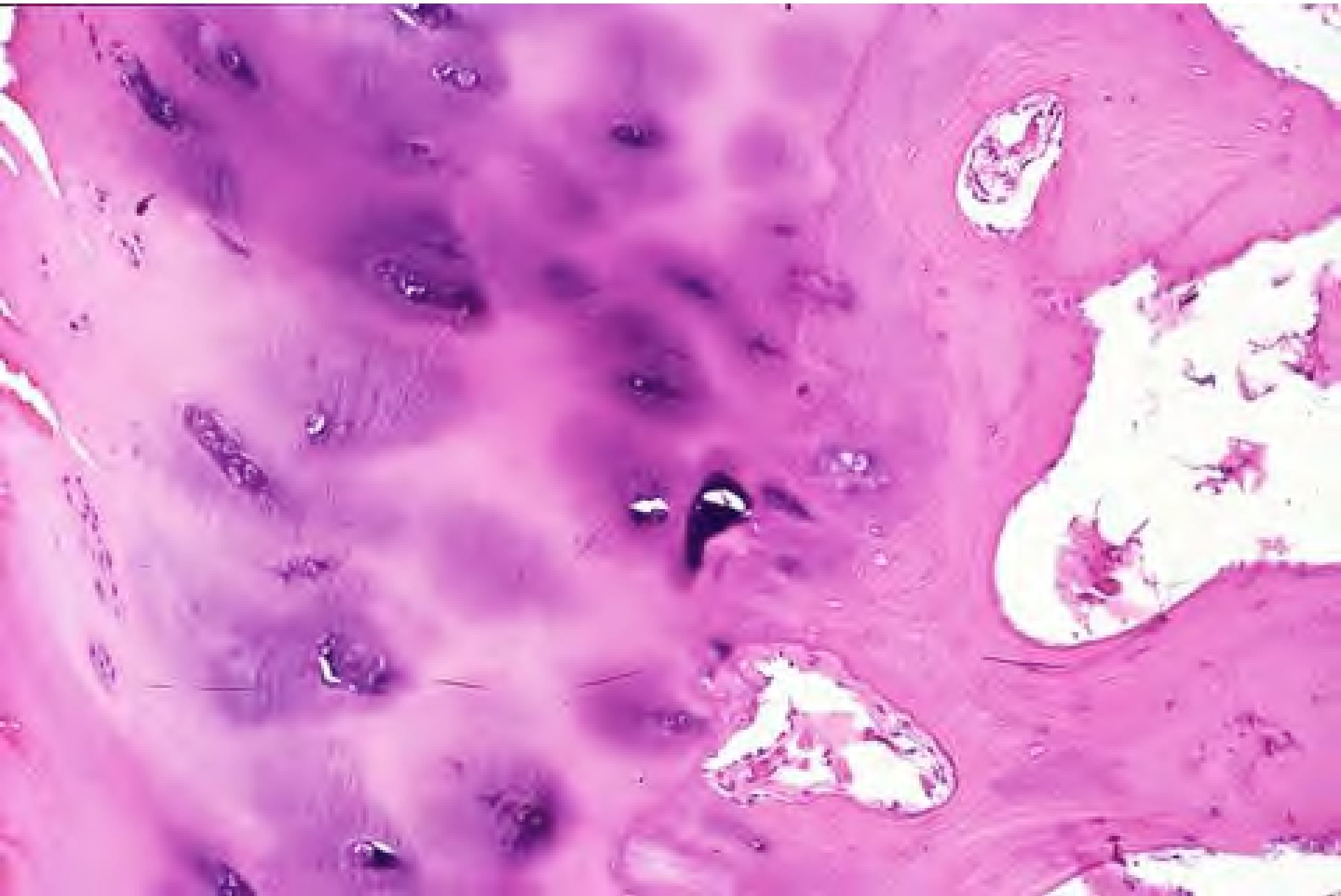


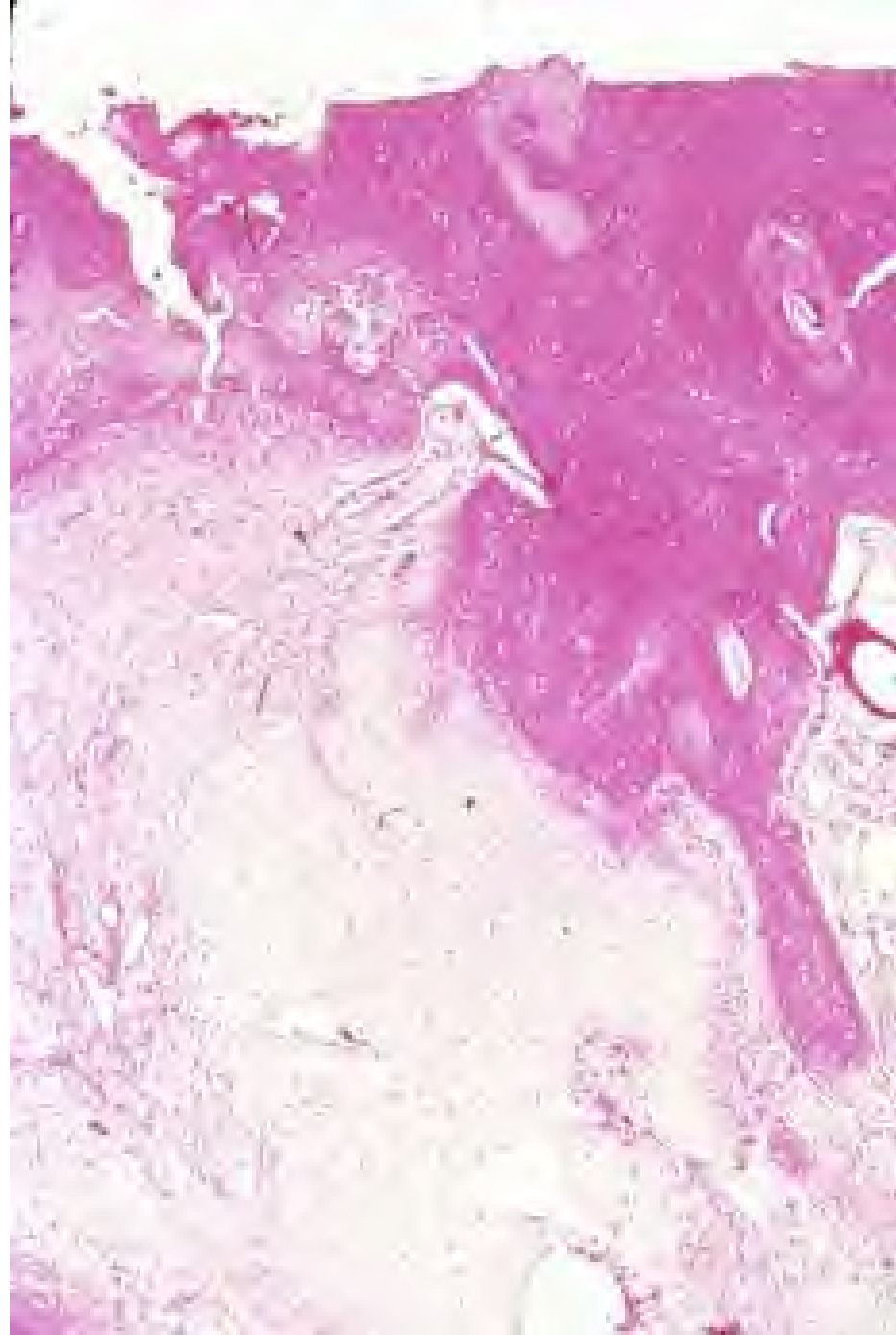


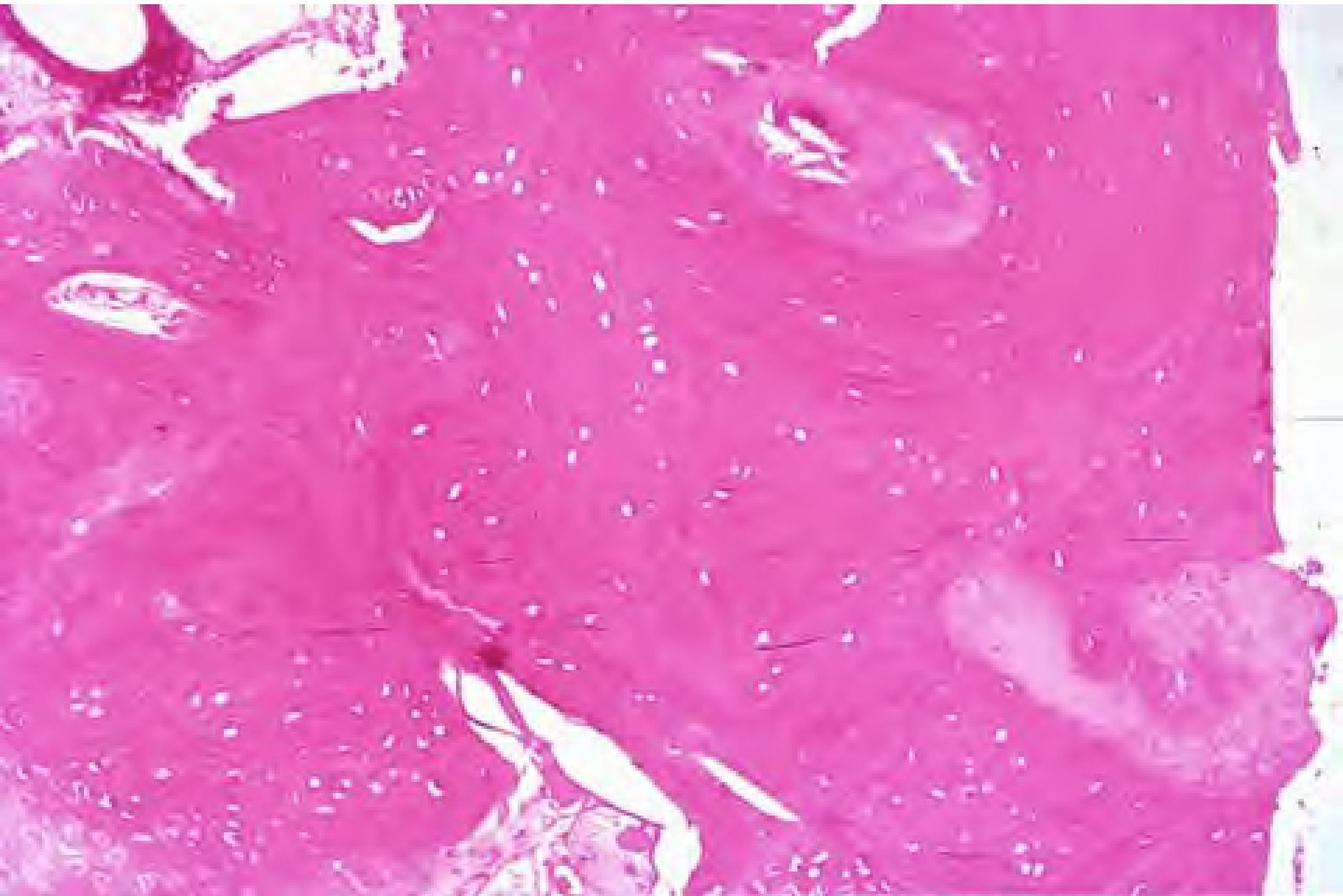


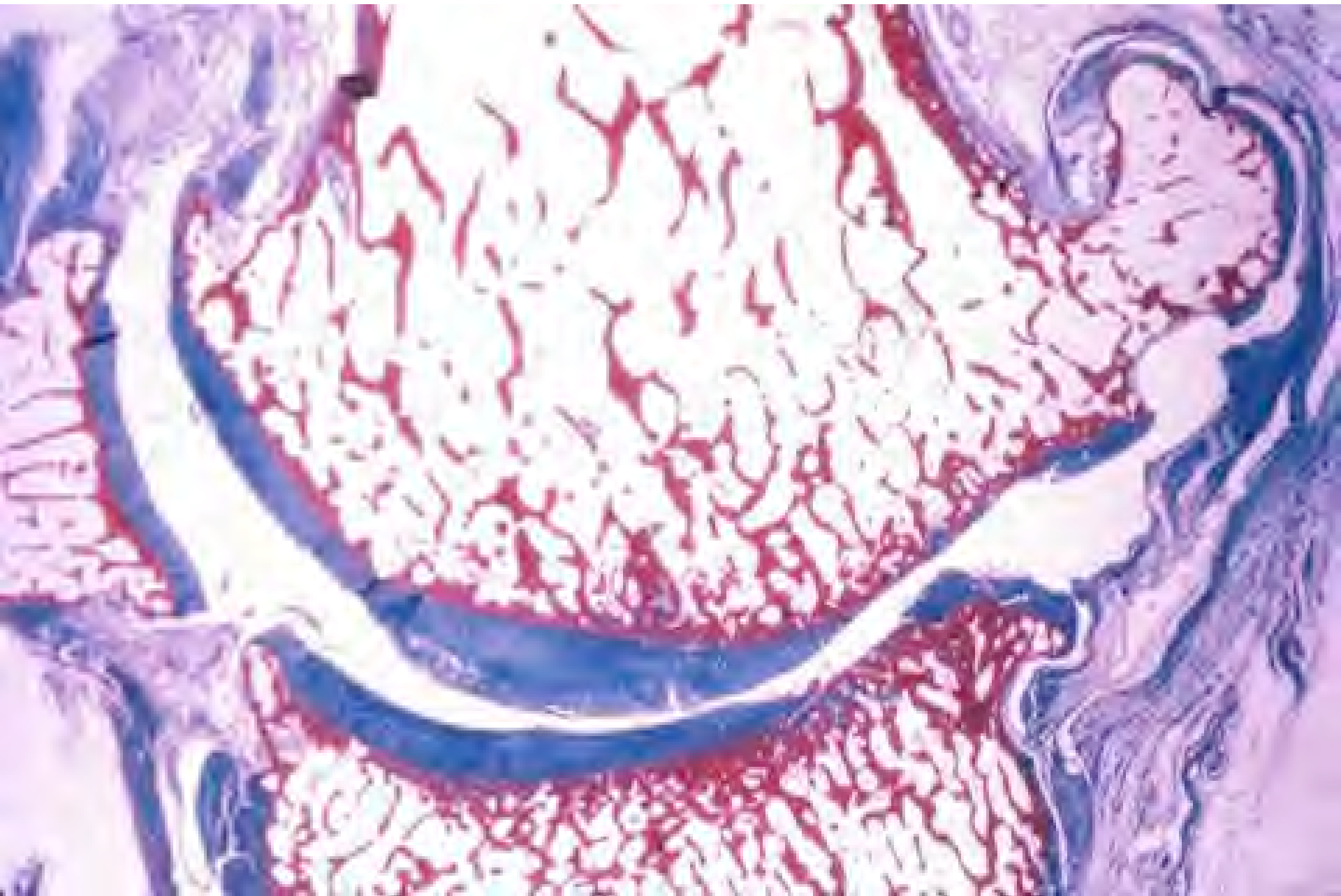


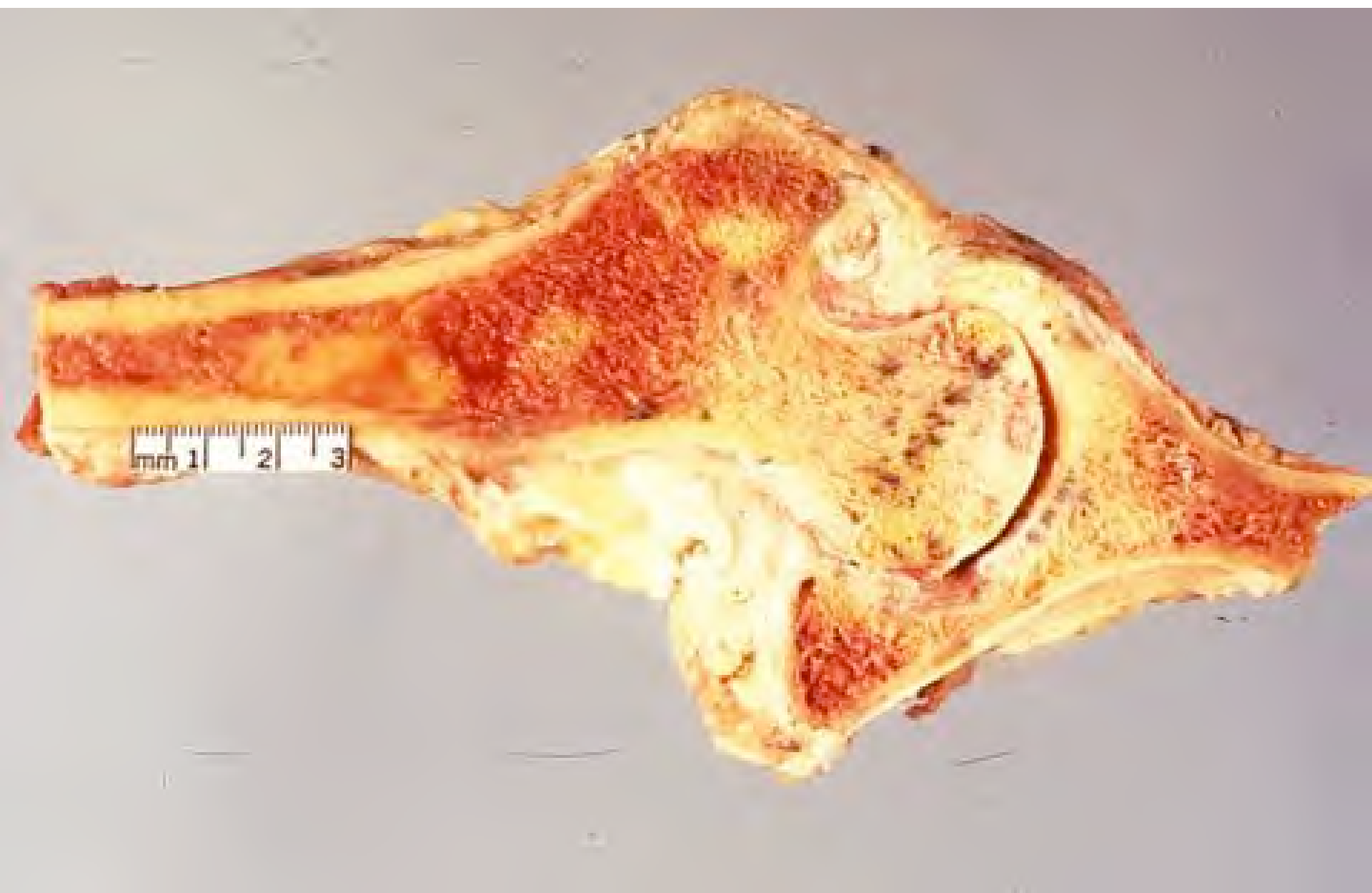








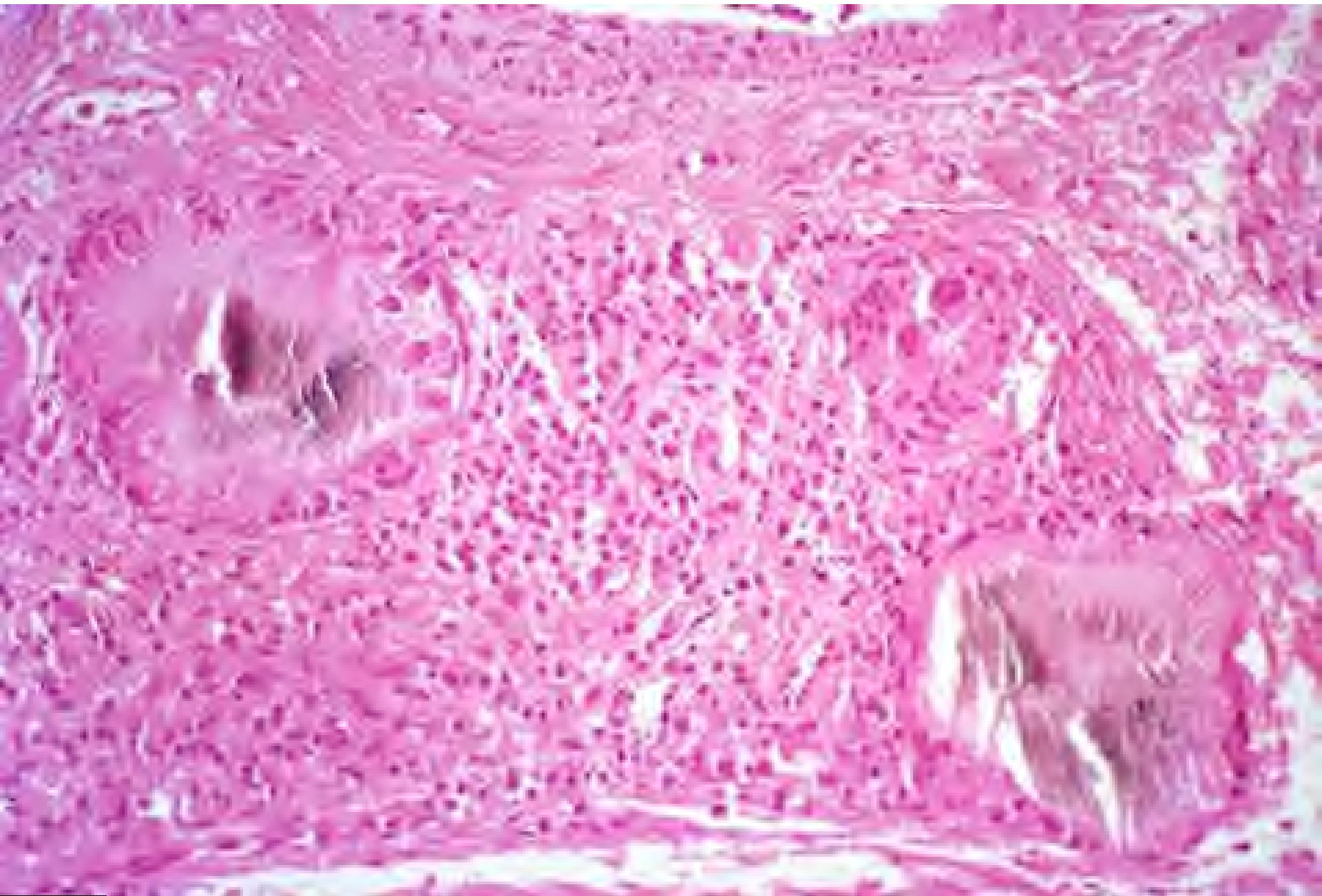


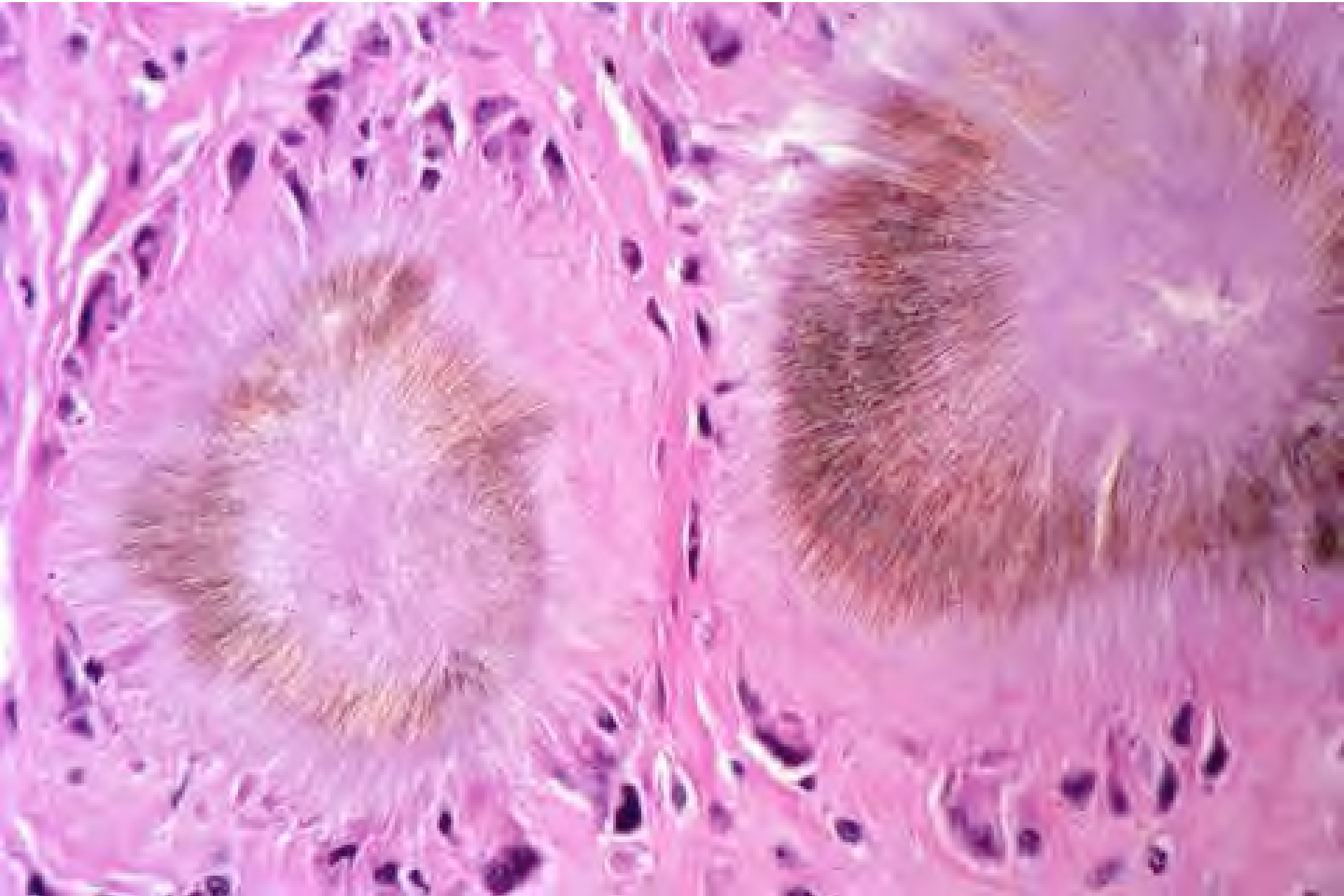


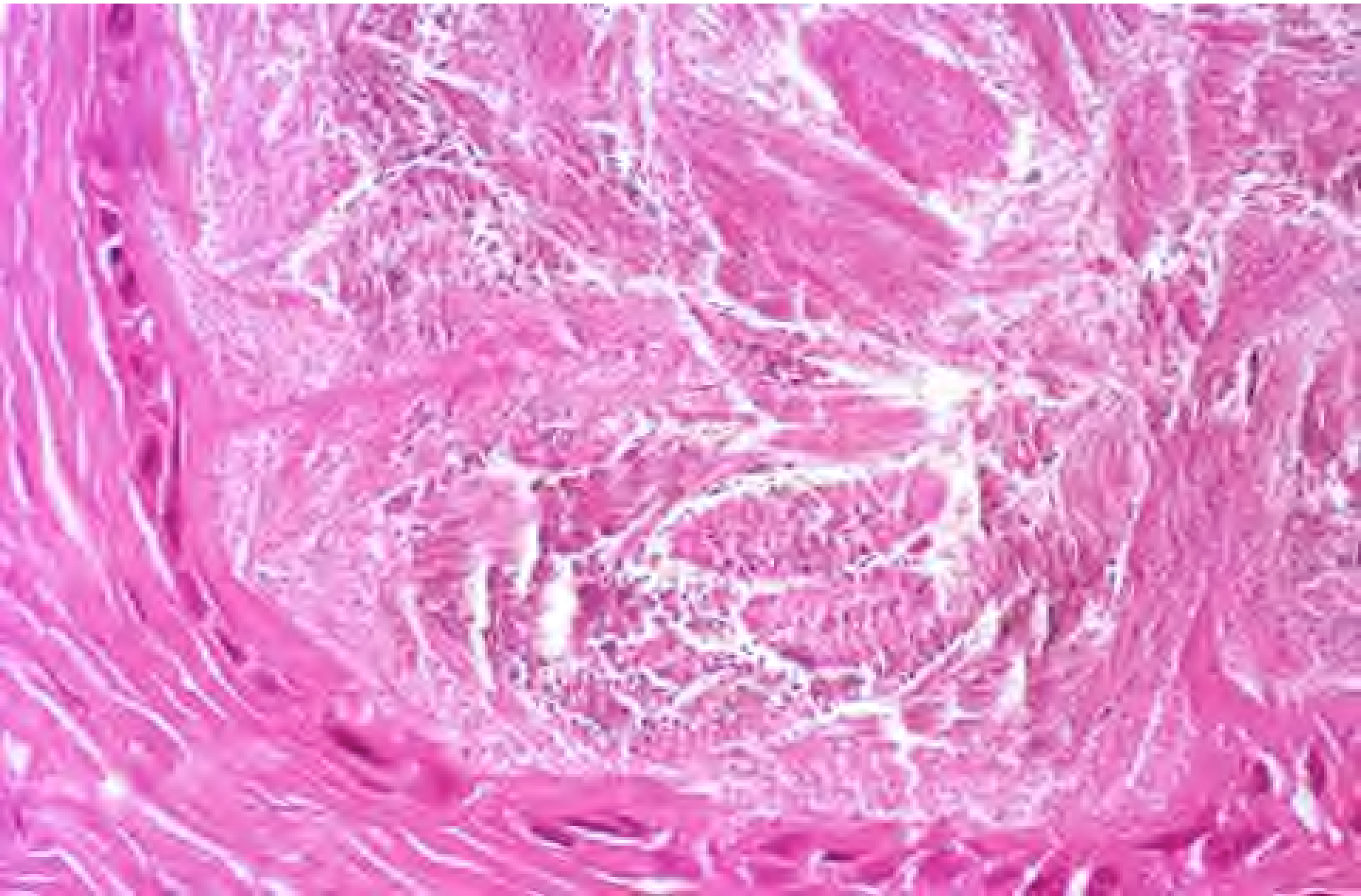


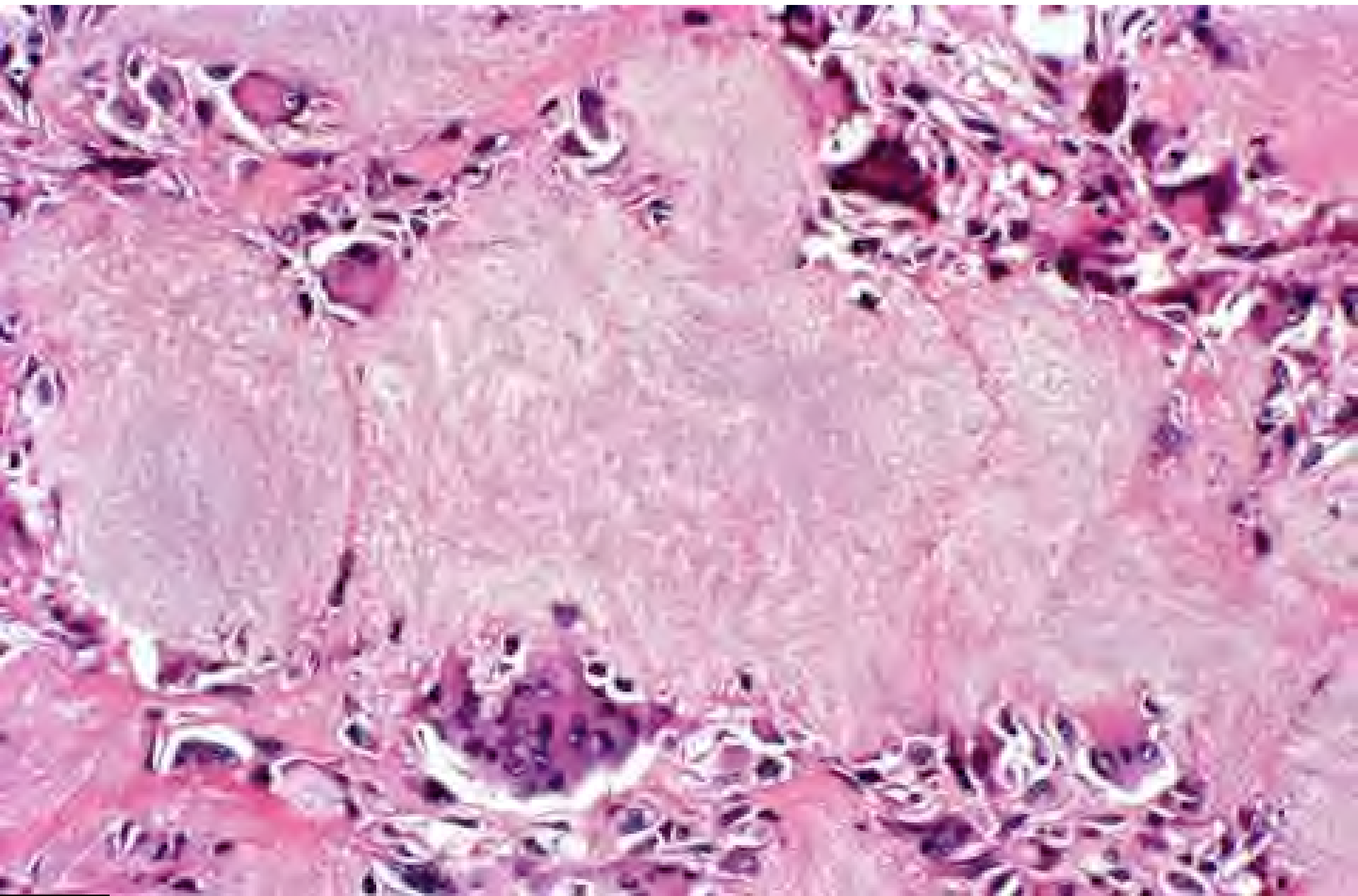


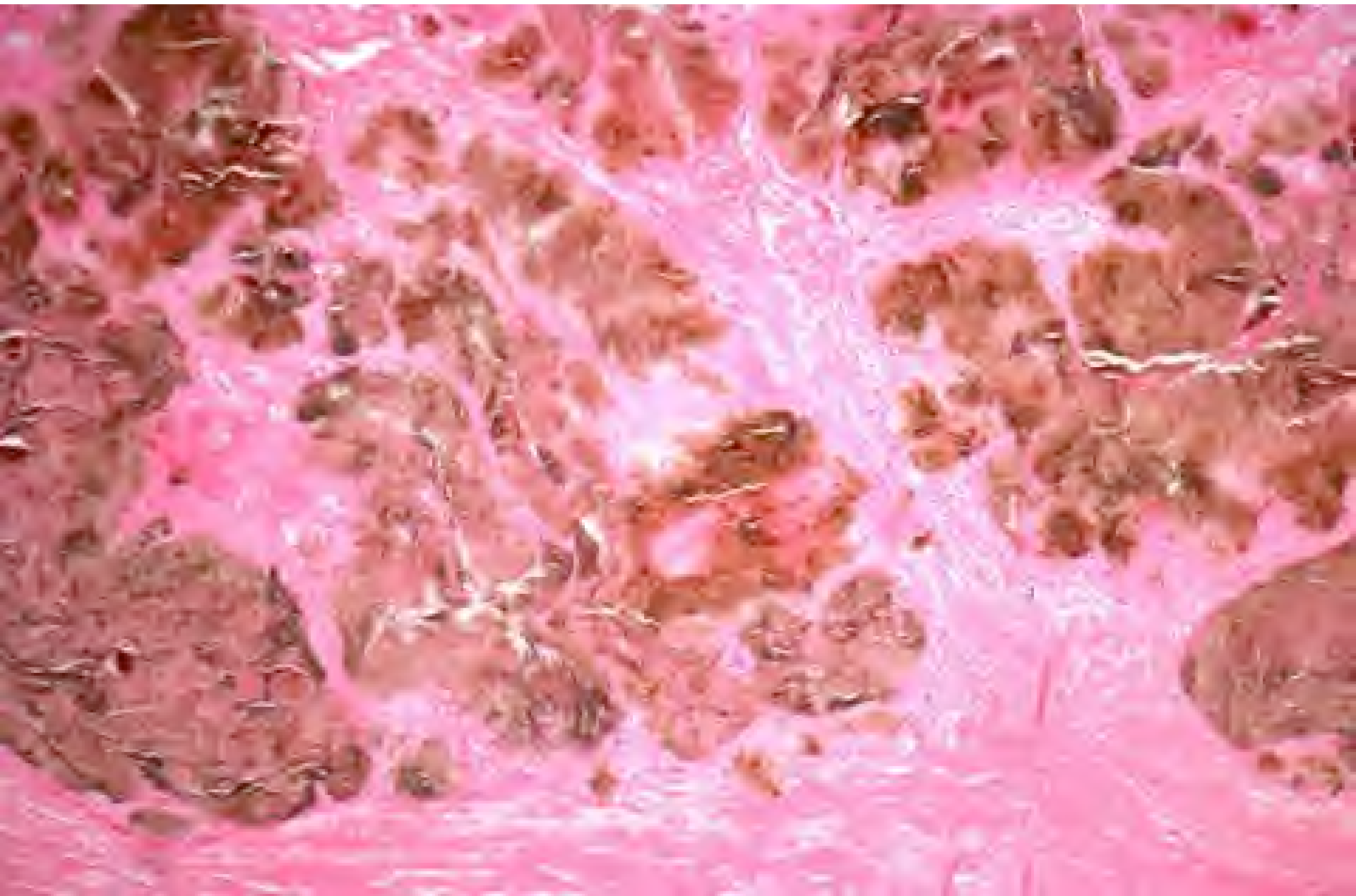
Gouty tophus

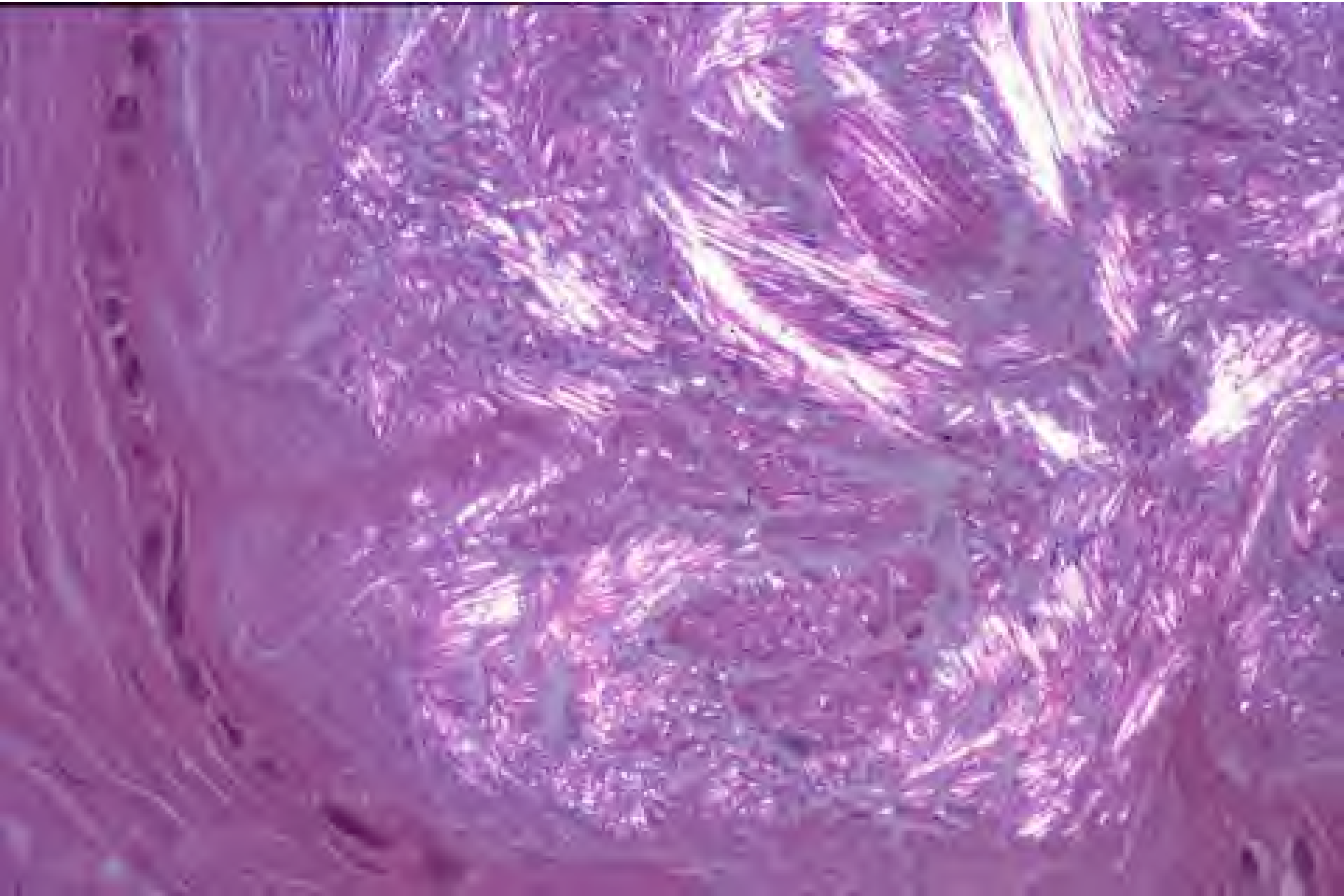


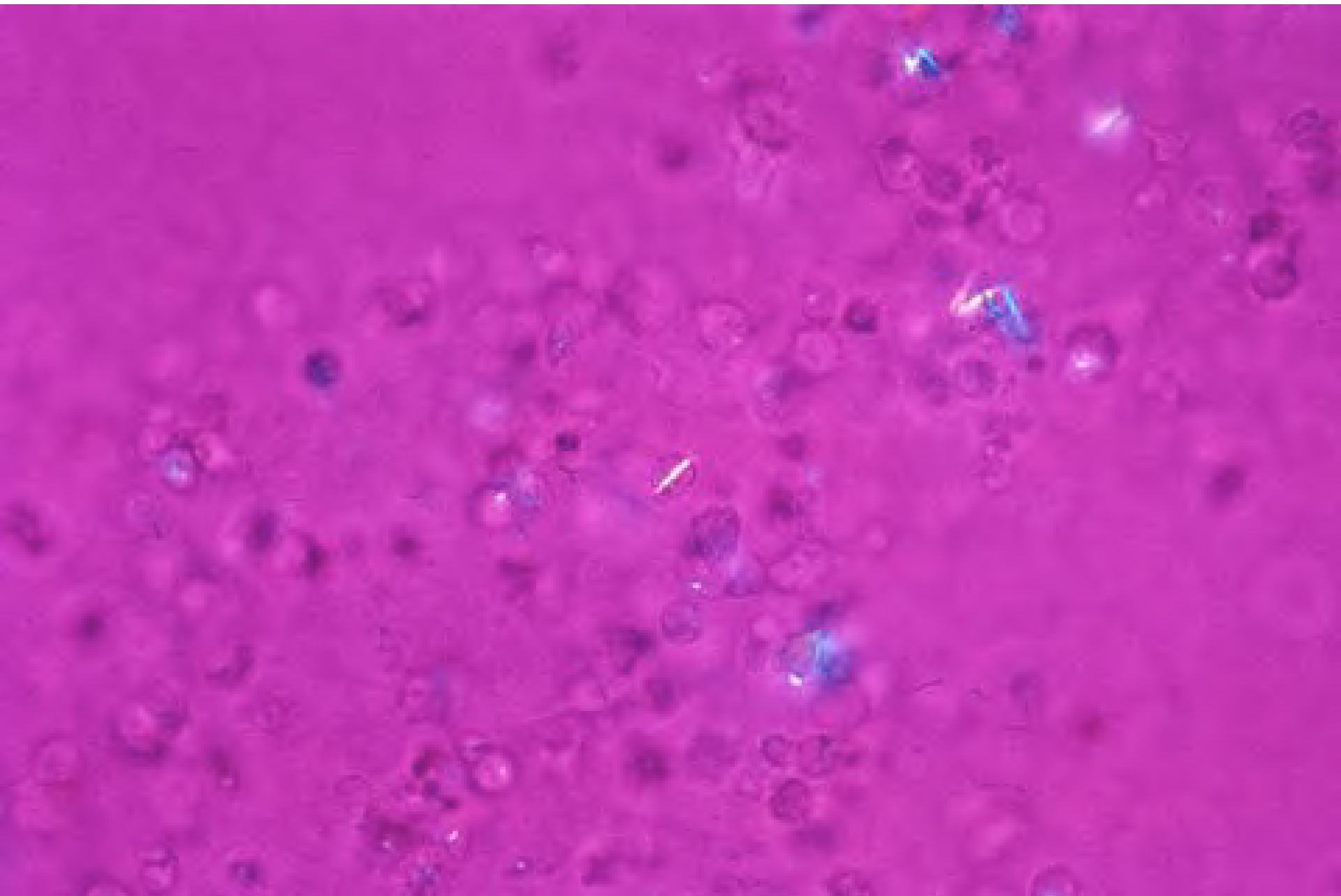


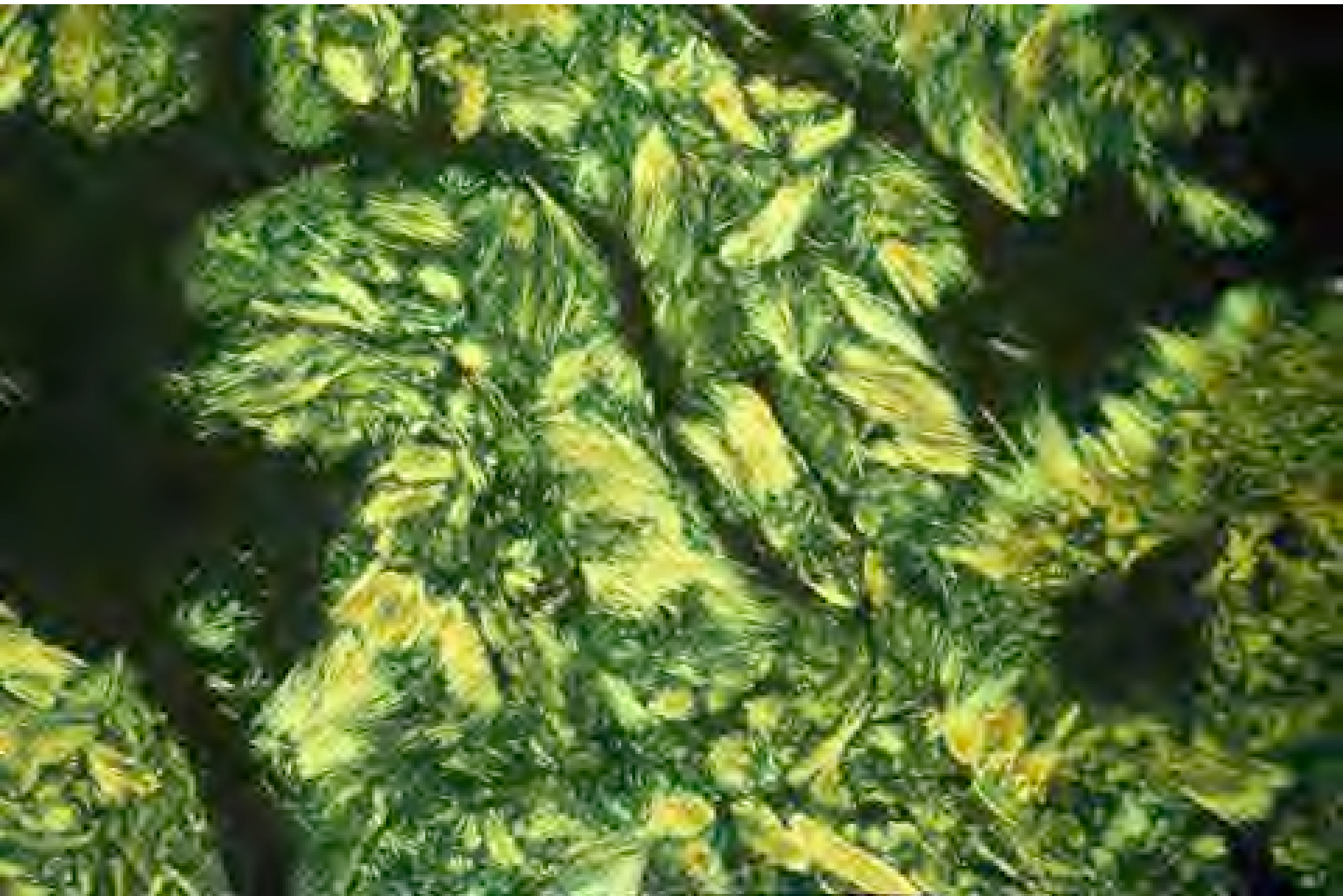




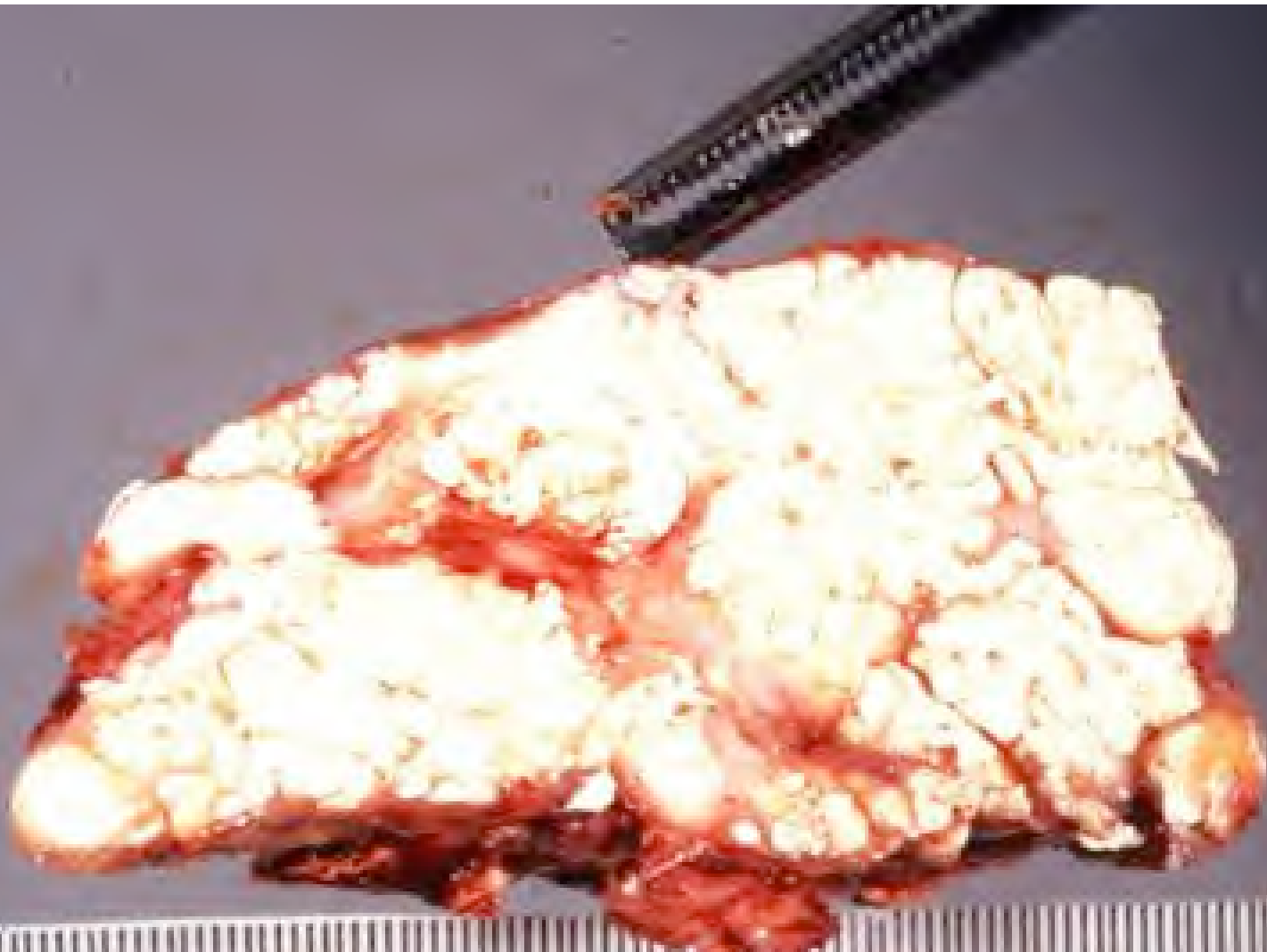



















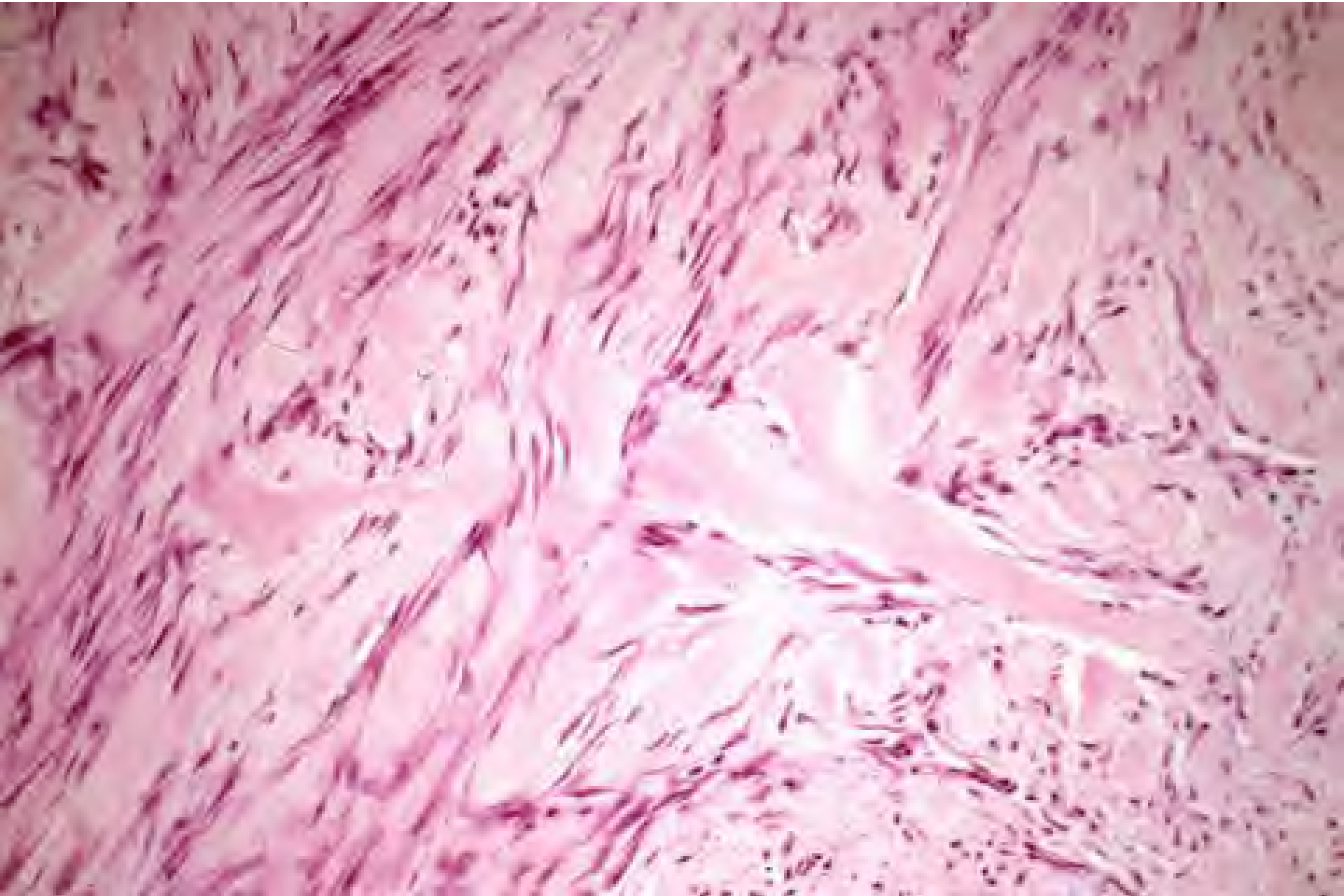
Keloid



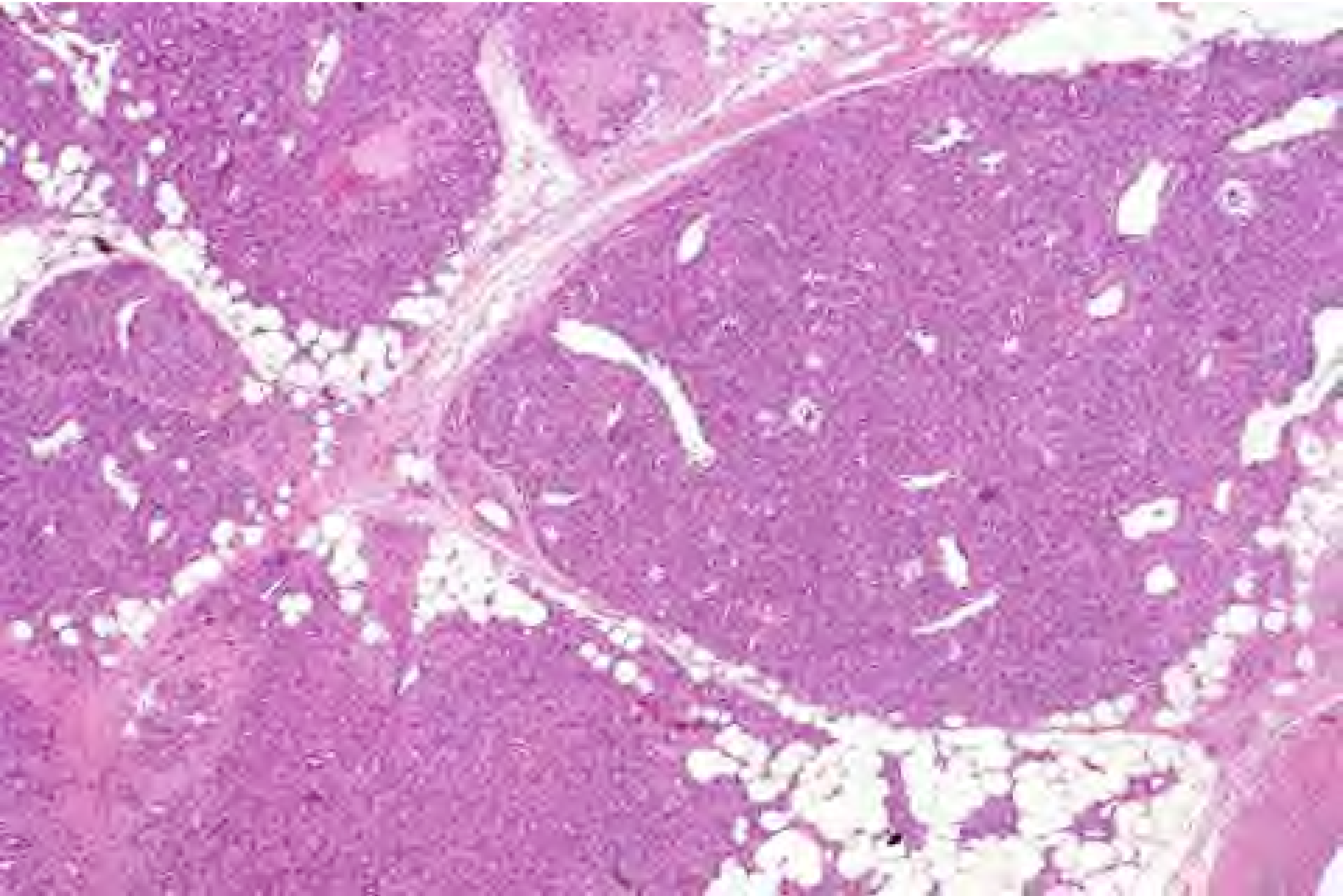


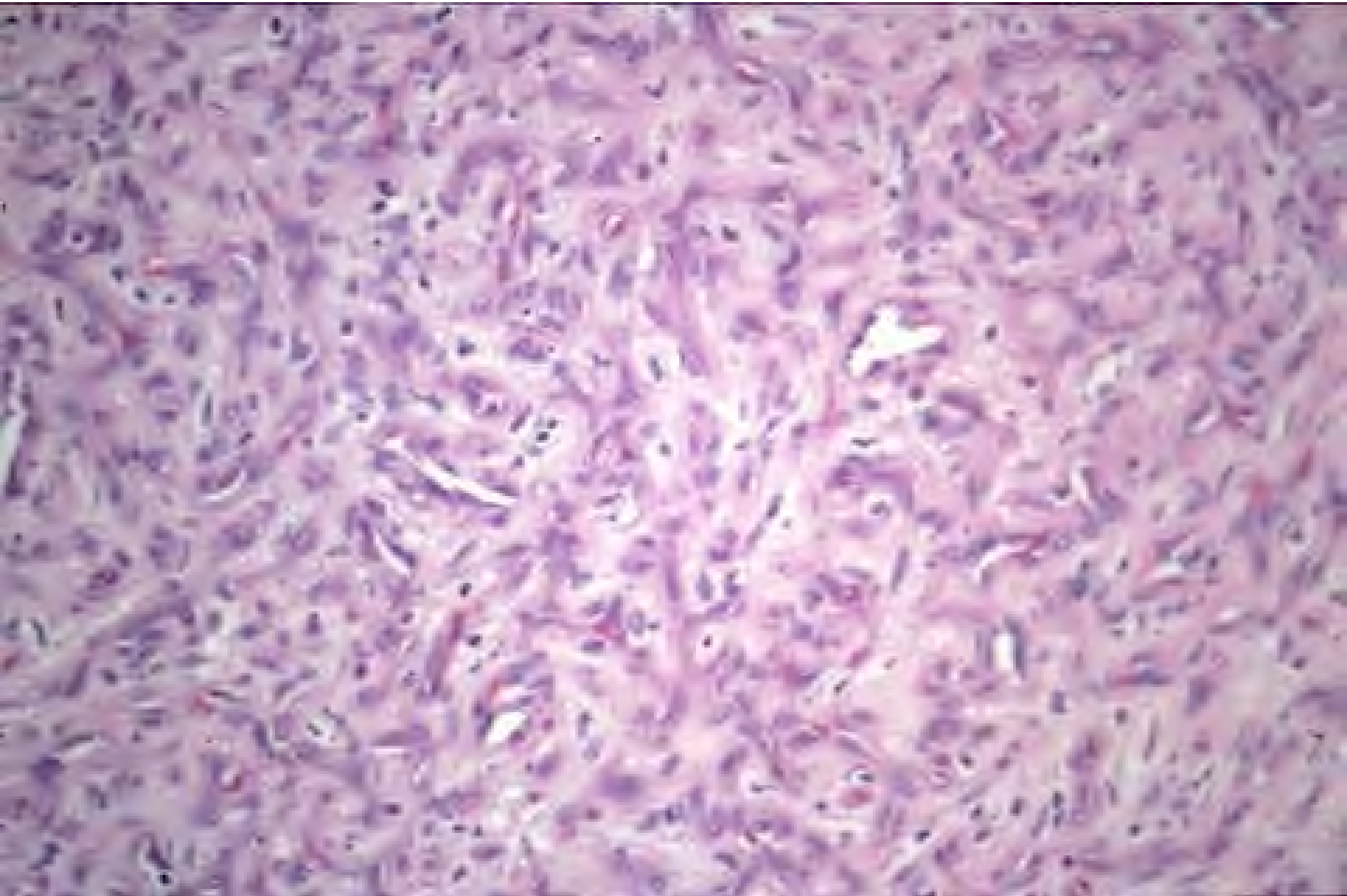
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Hemangioma of infancy



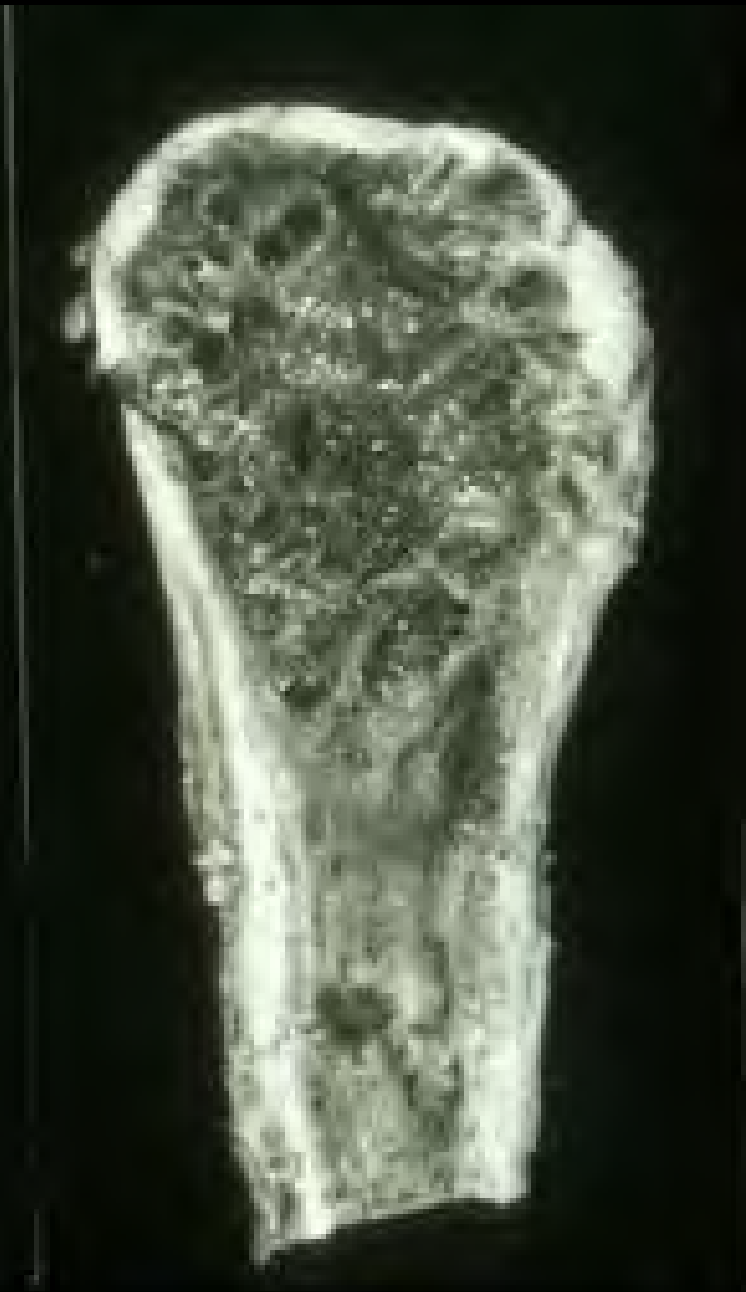




Musculoskeletal Sequence Lab # 3

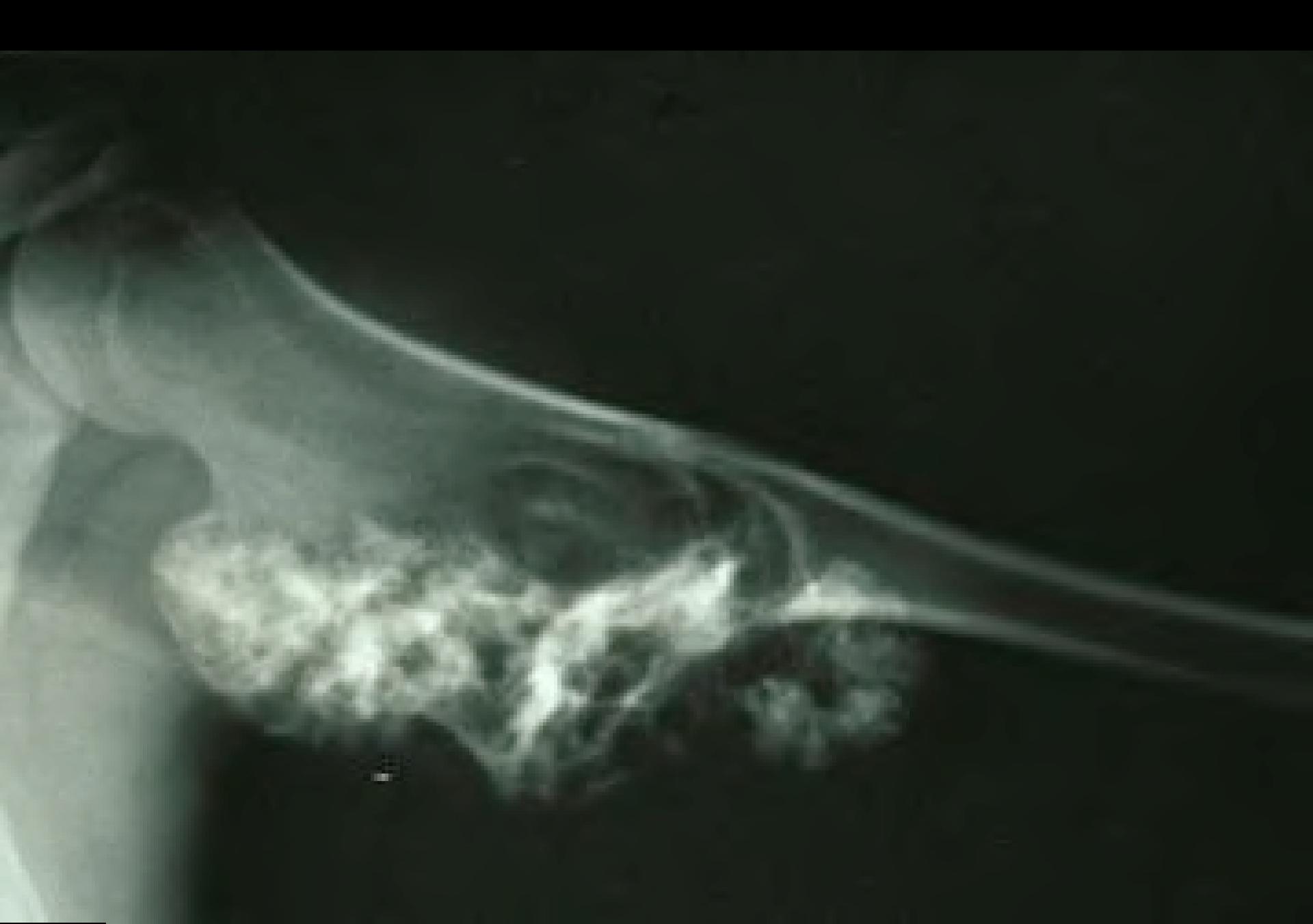
- 185 Osteochondroma
- 186 Chondrosarcoma
- 192 Osteoid osteoma
- 187 Osteogenic sarcoma
- 48 Metastatic adenocarcinoma
- 176 Multiple myeloma

Osteochondroma

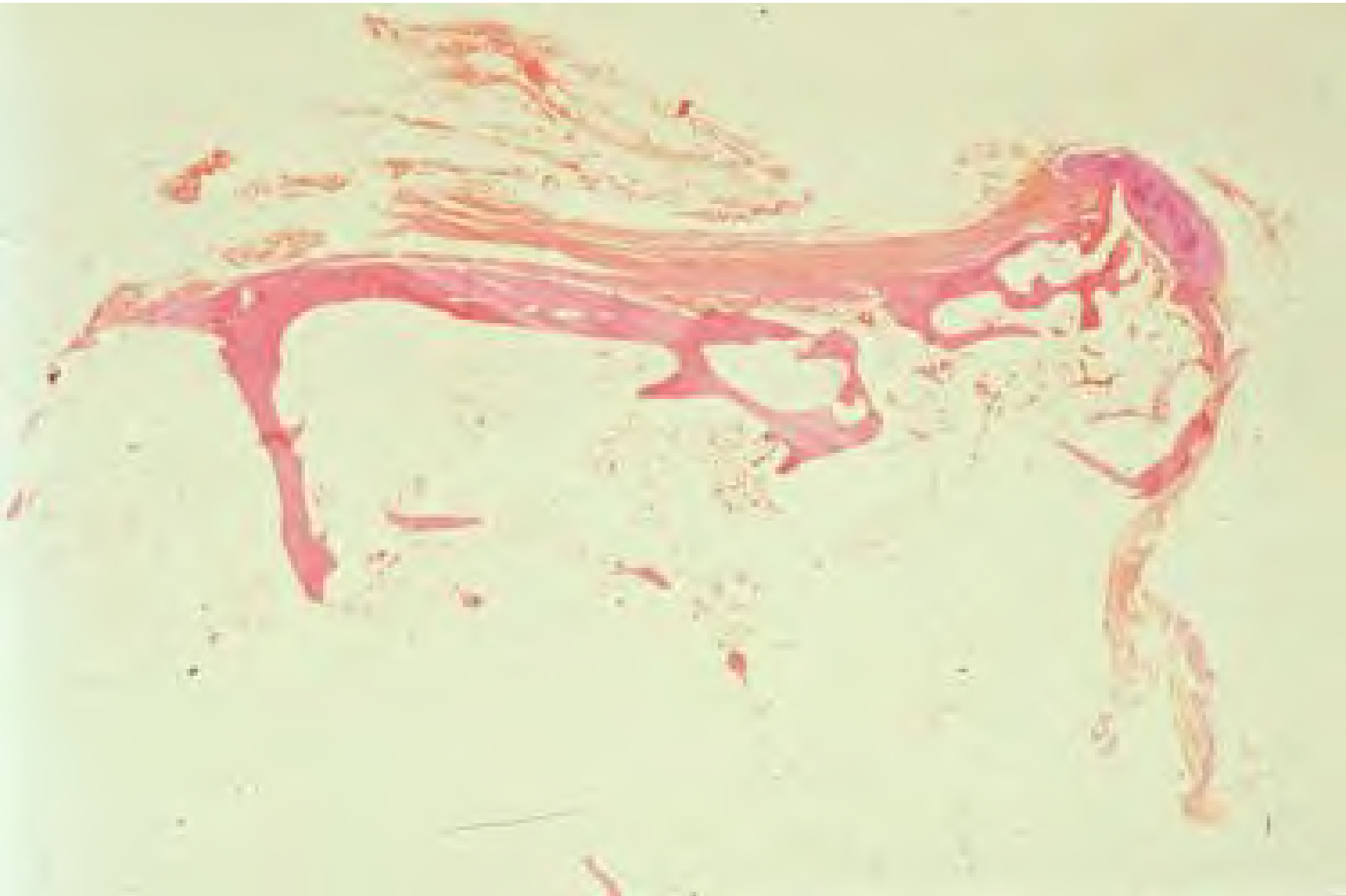


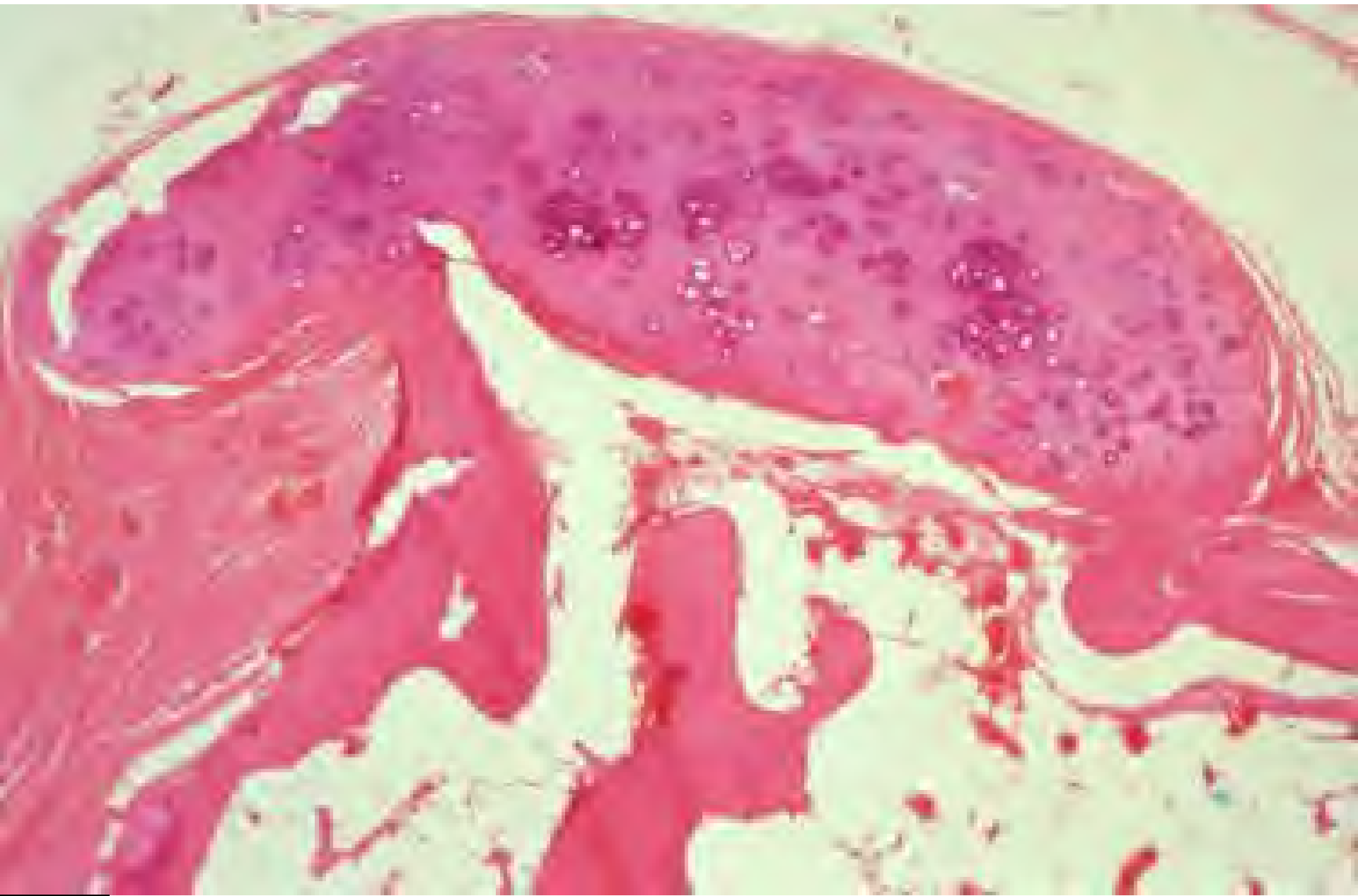
Osteochondroma



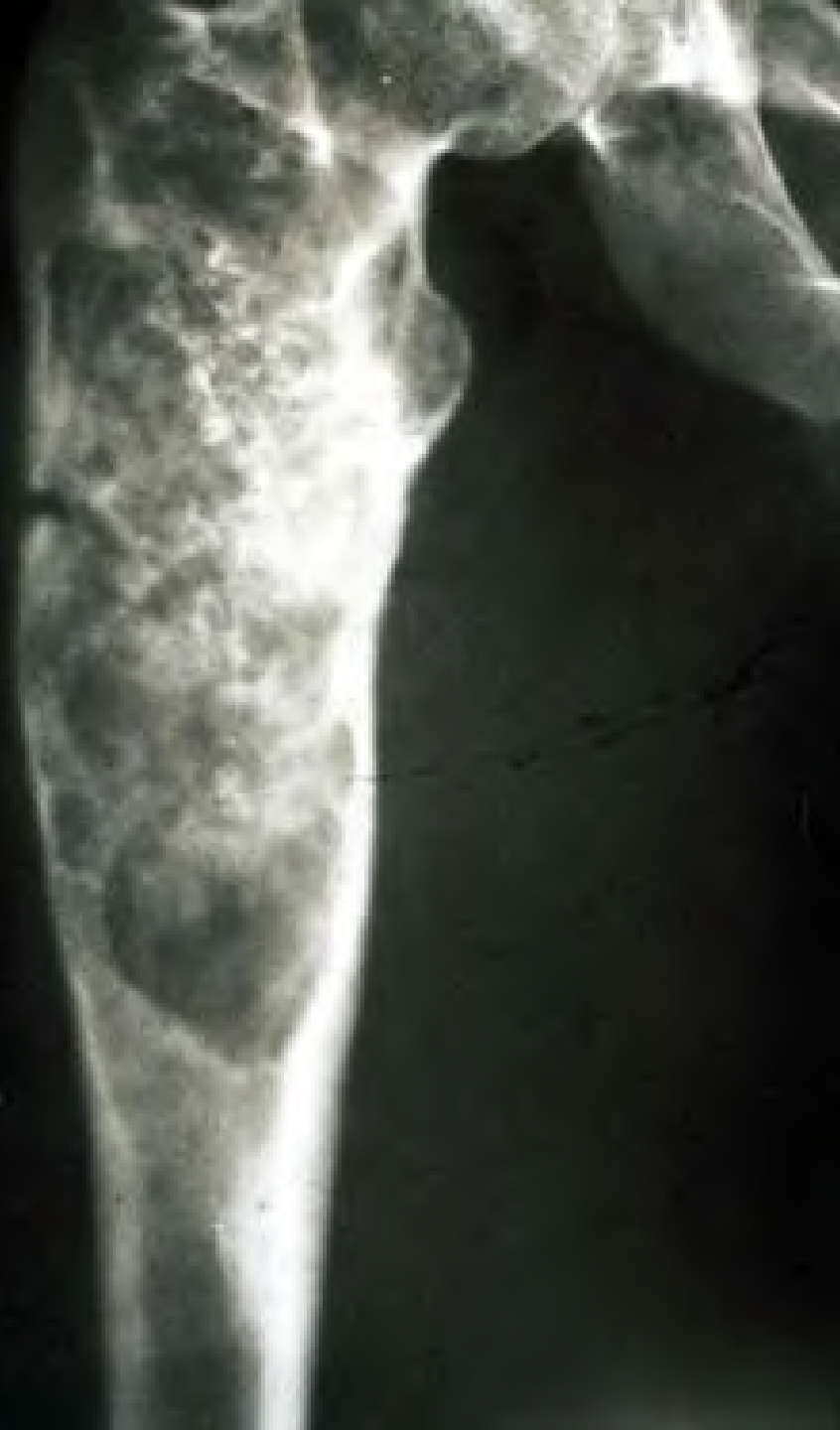




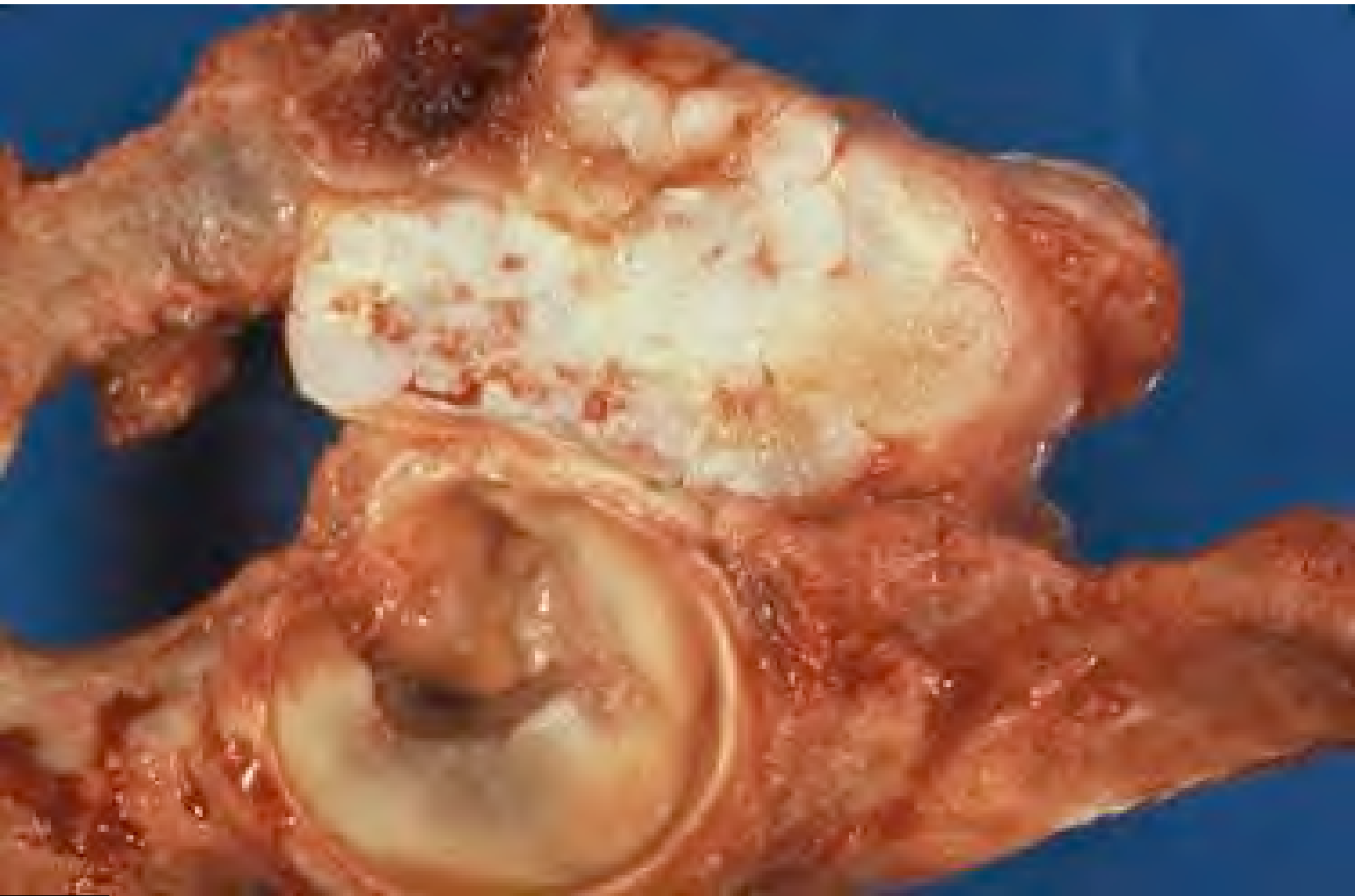




Chondrosarcoma

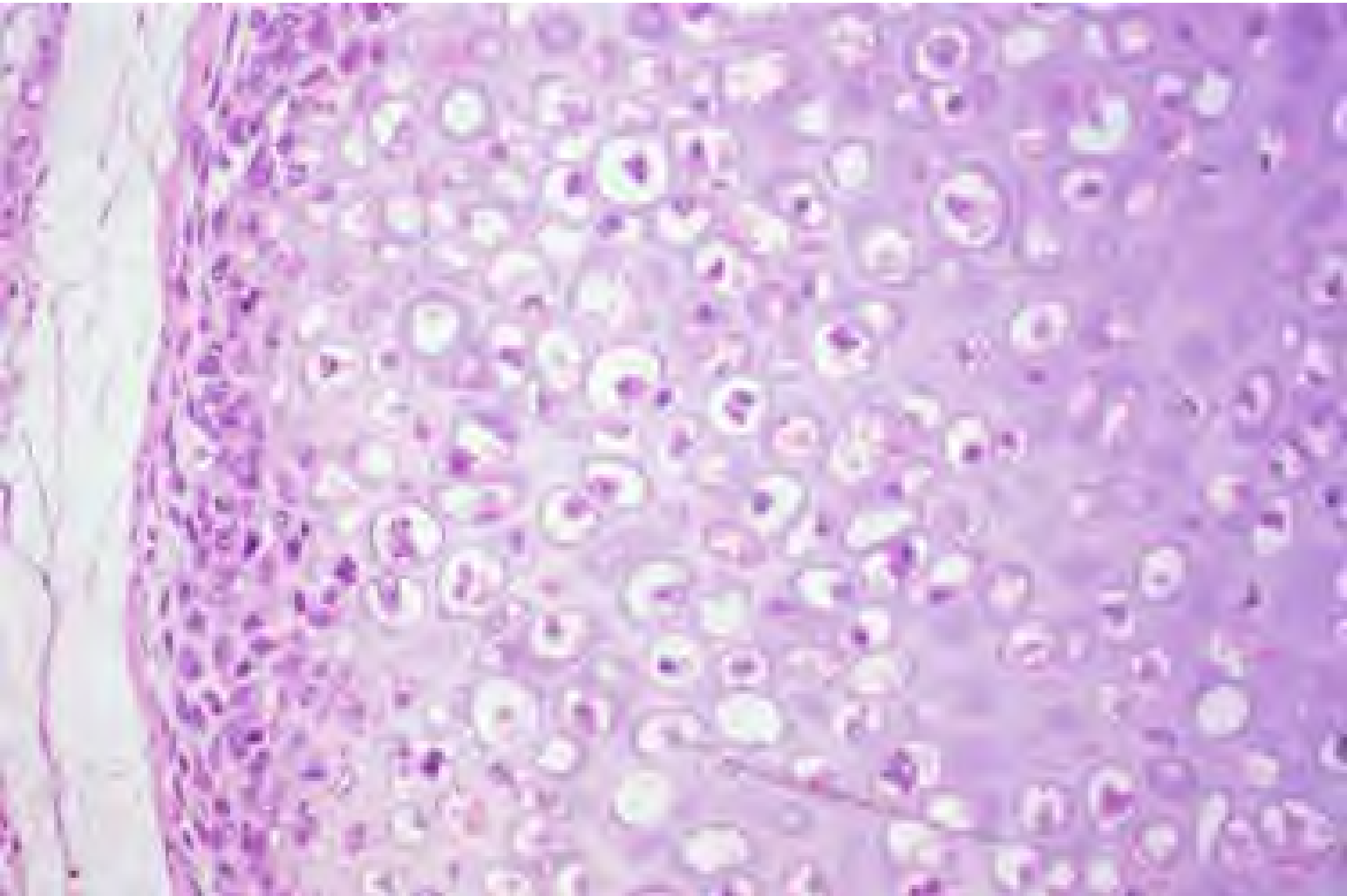


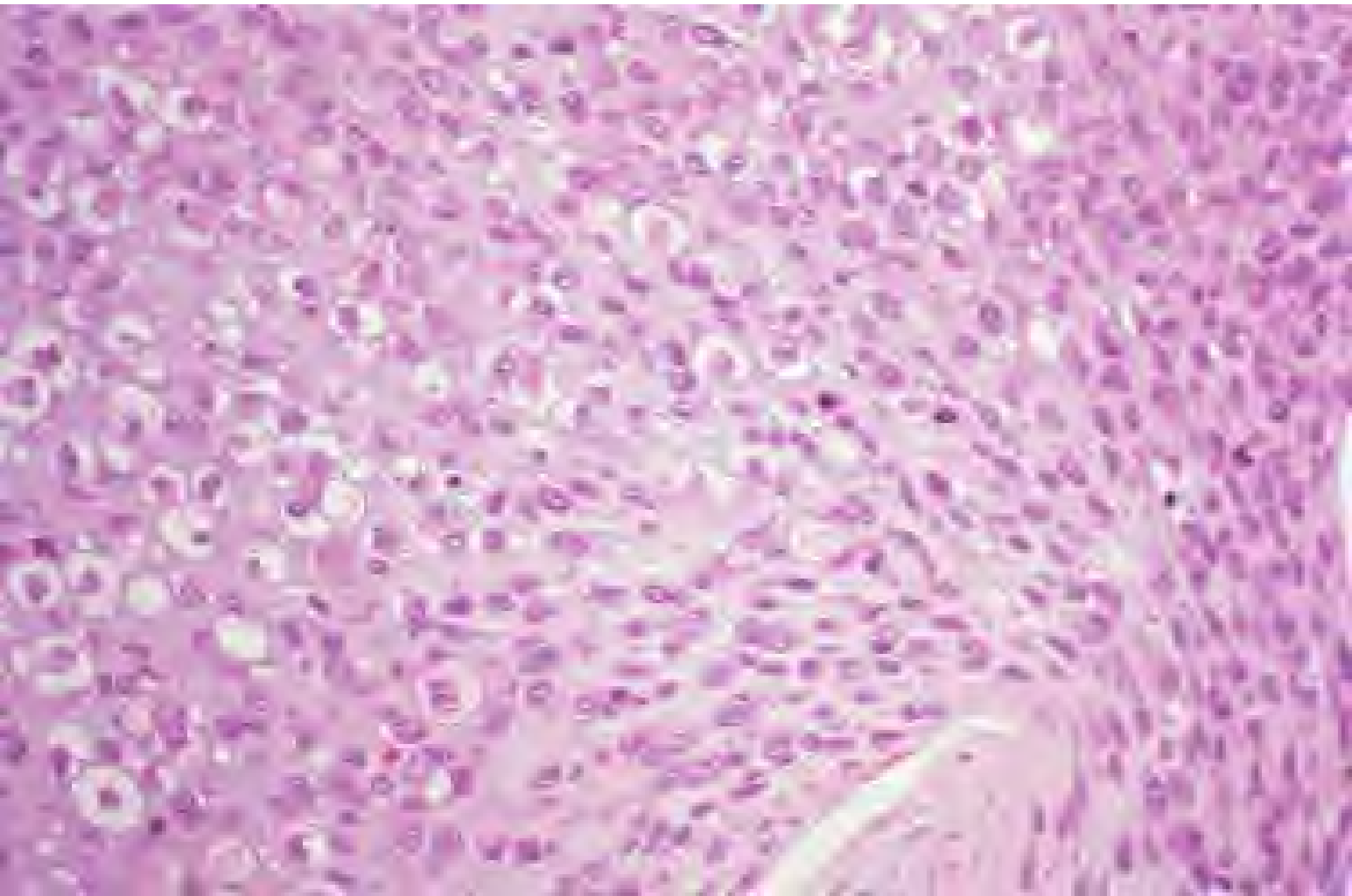








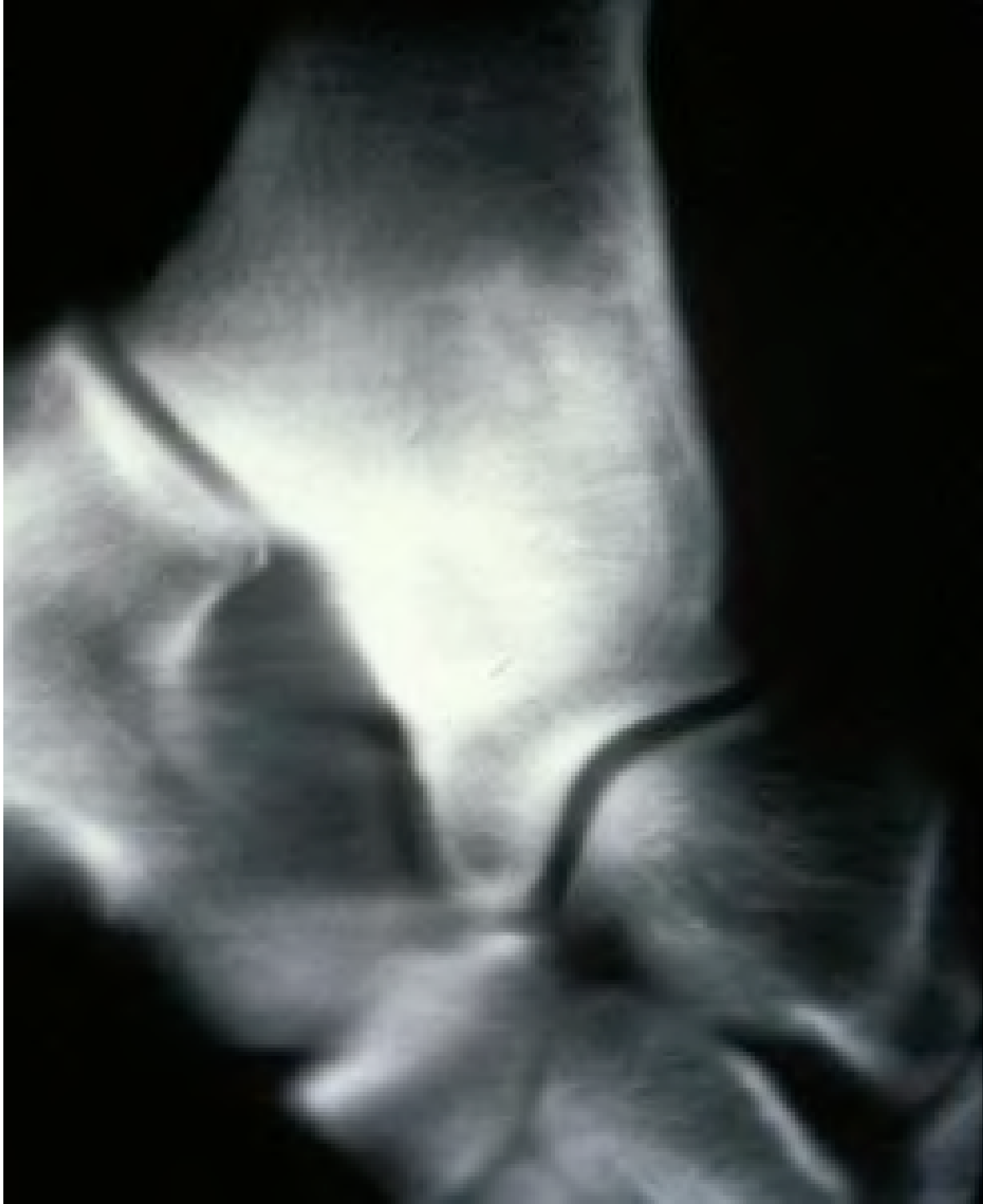


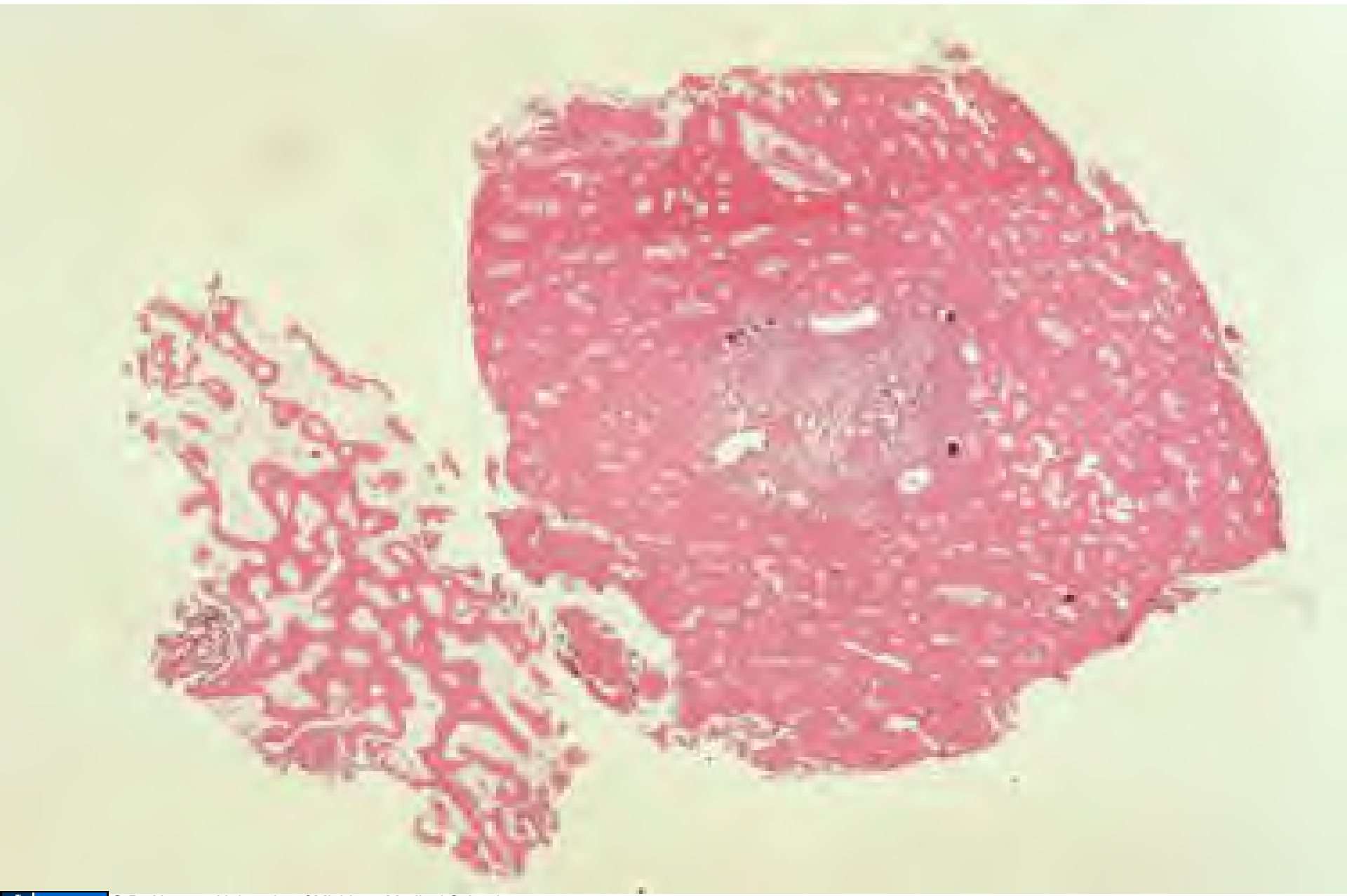


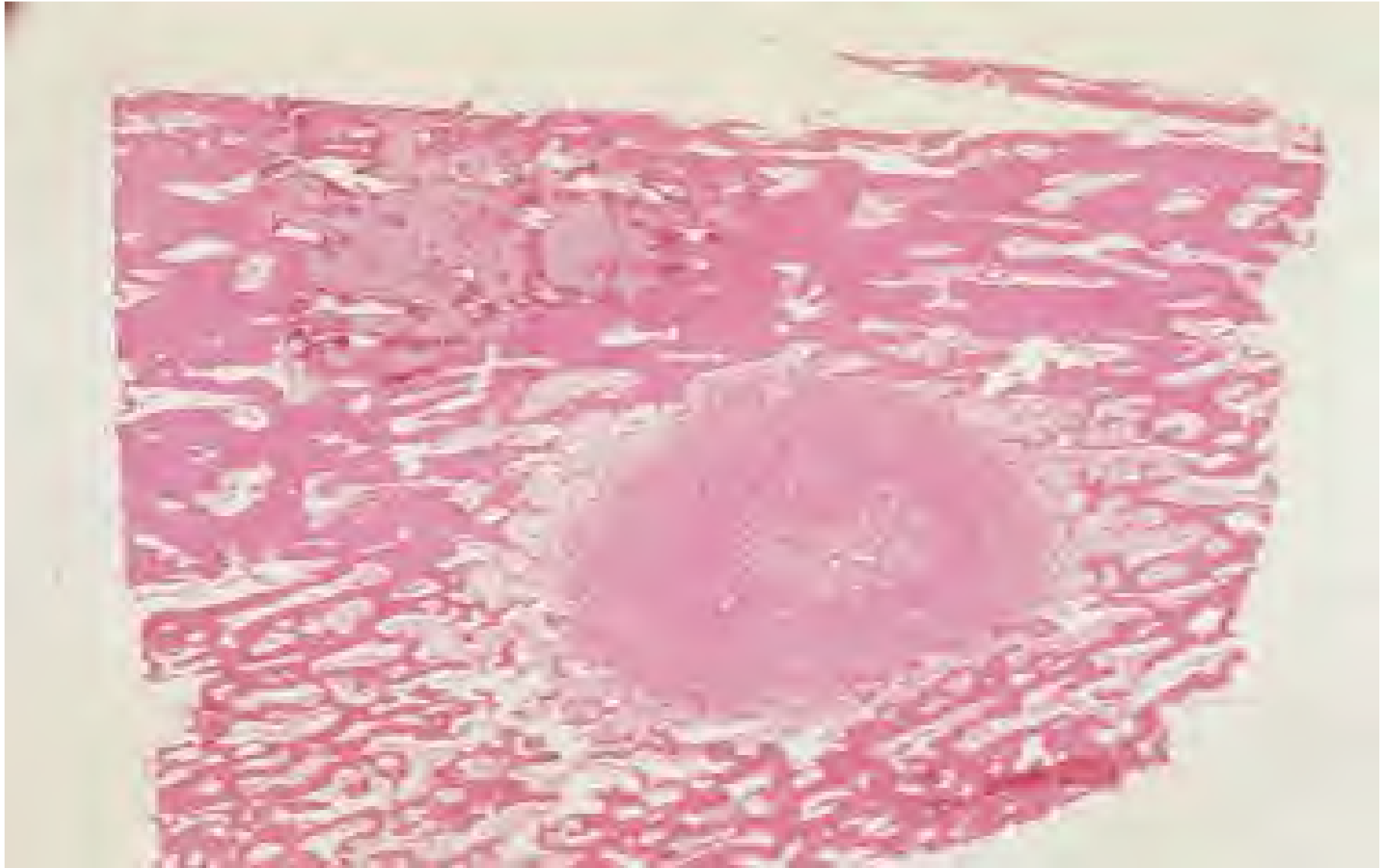
Osteoid osteoma

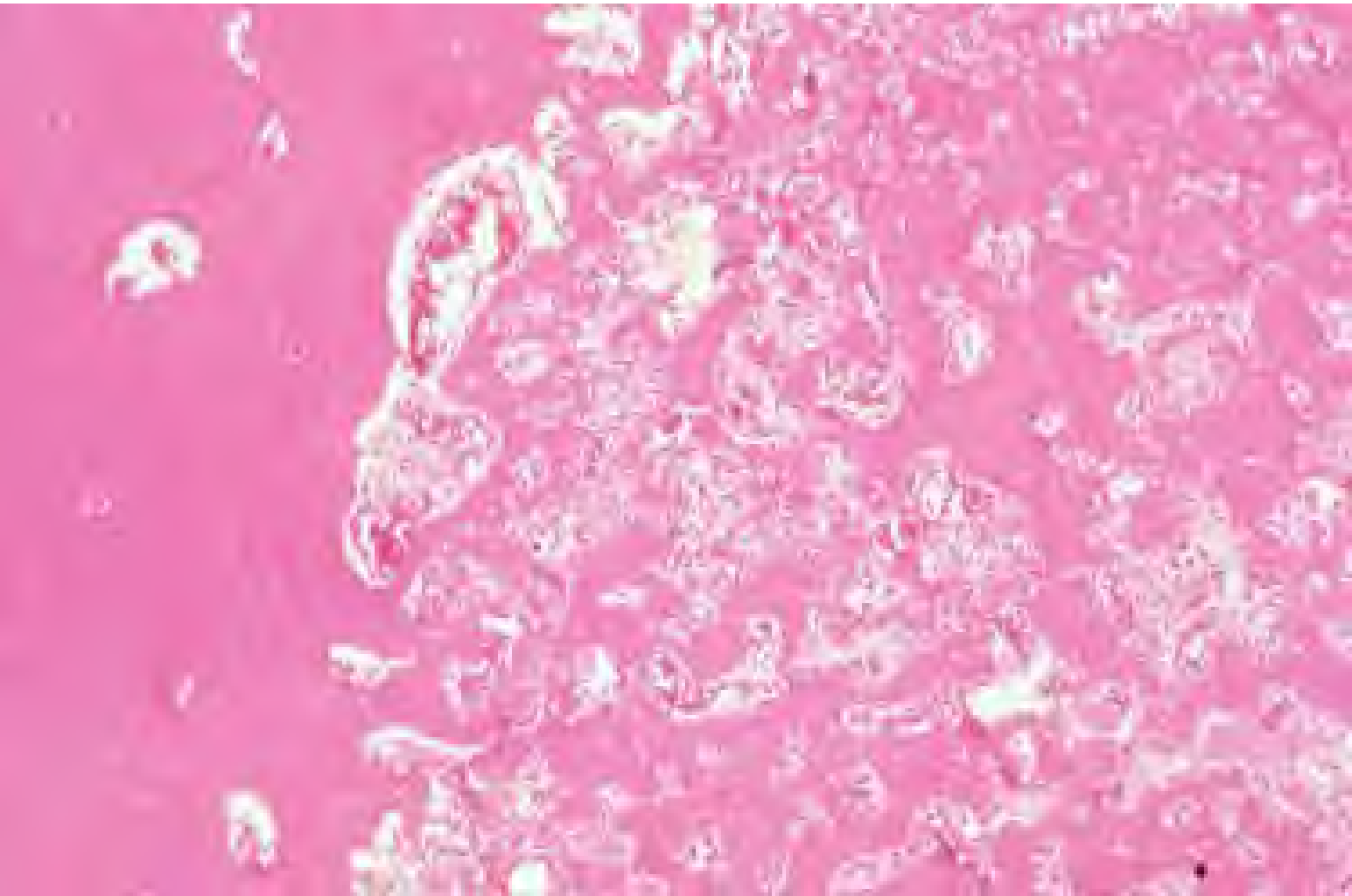
Osteoid Osteoma

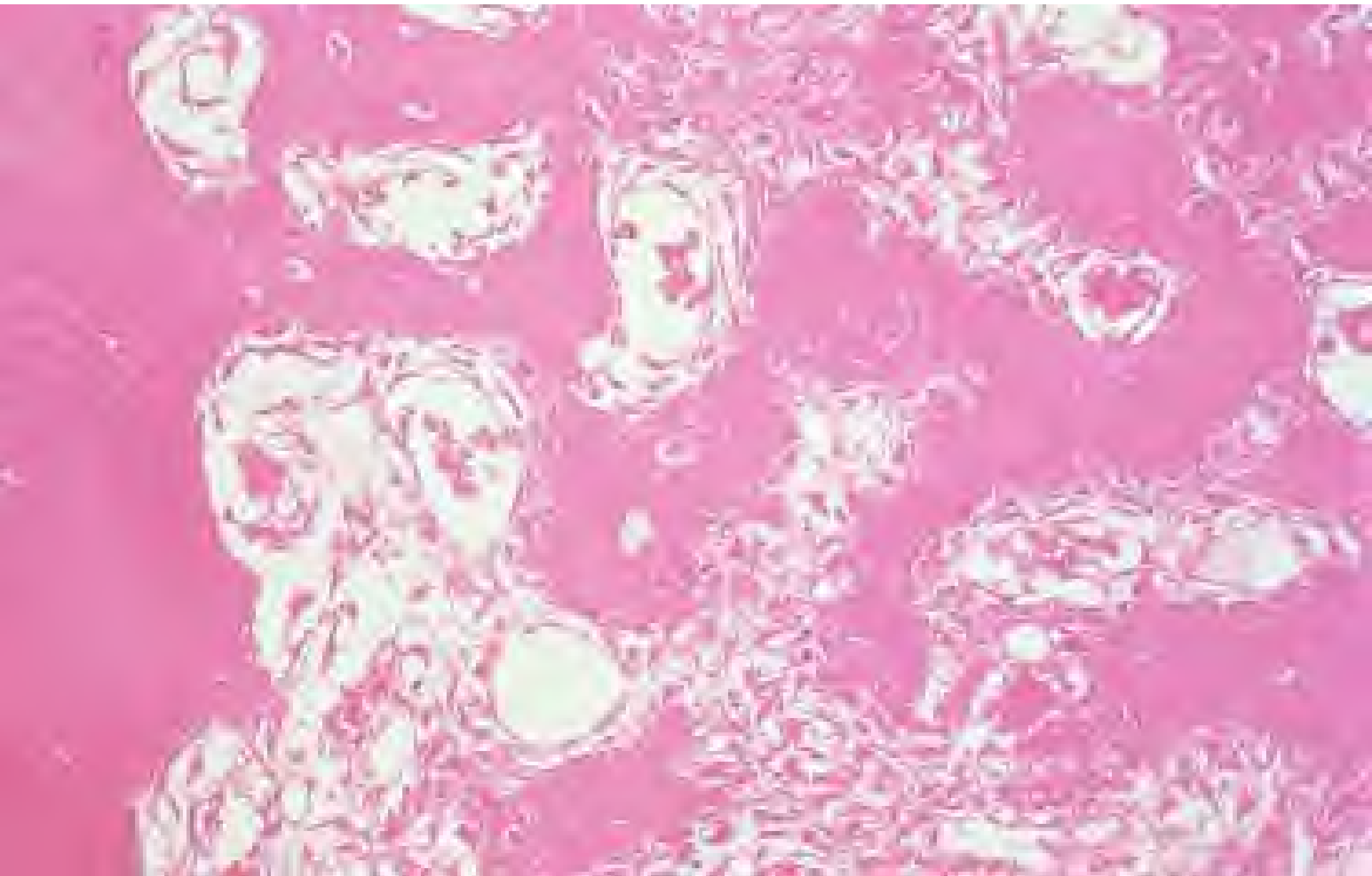


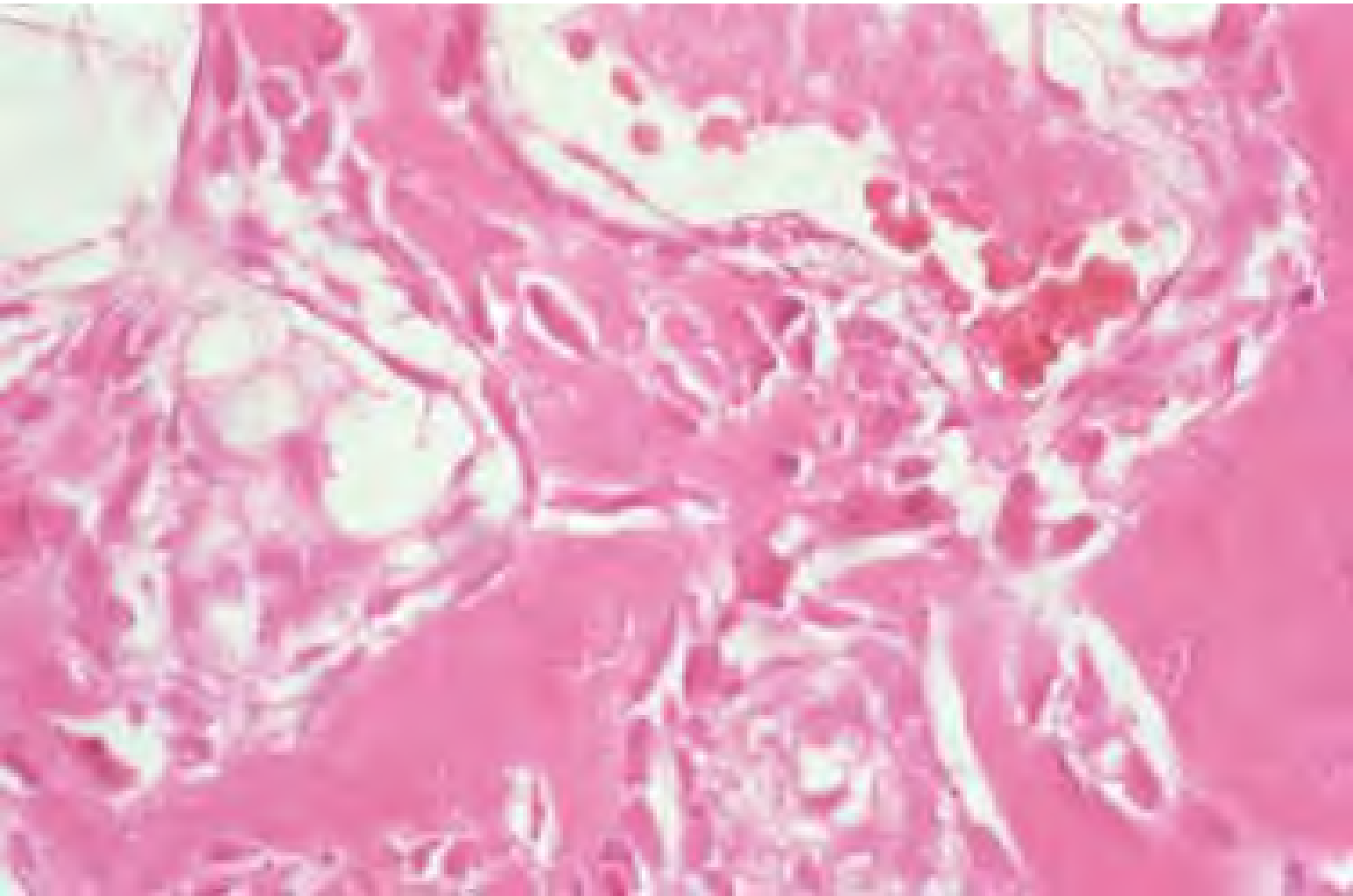






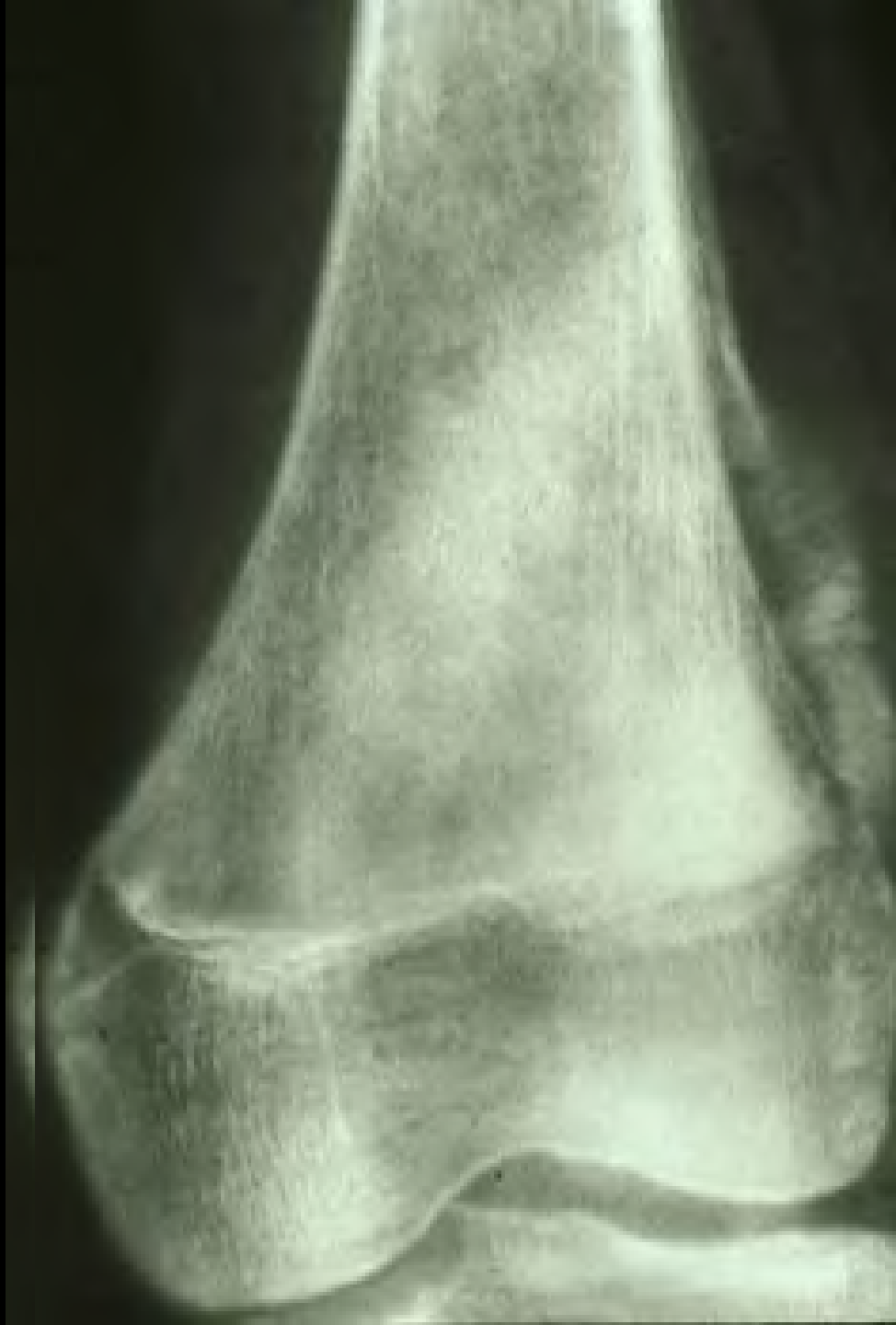




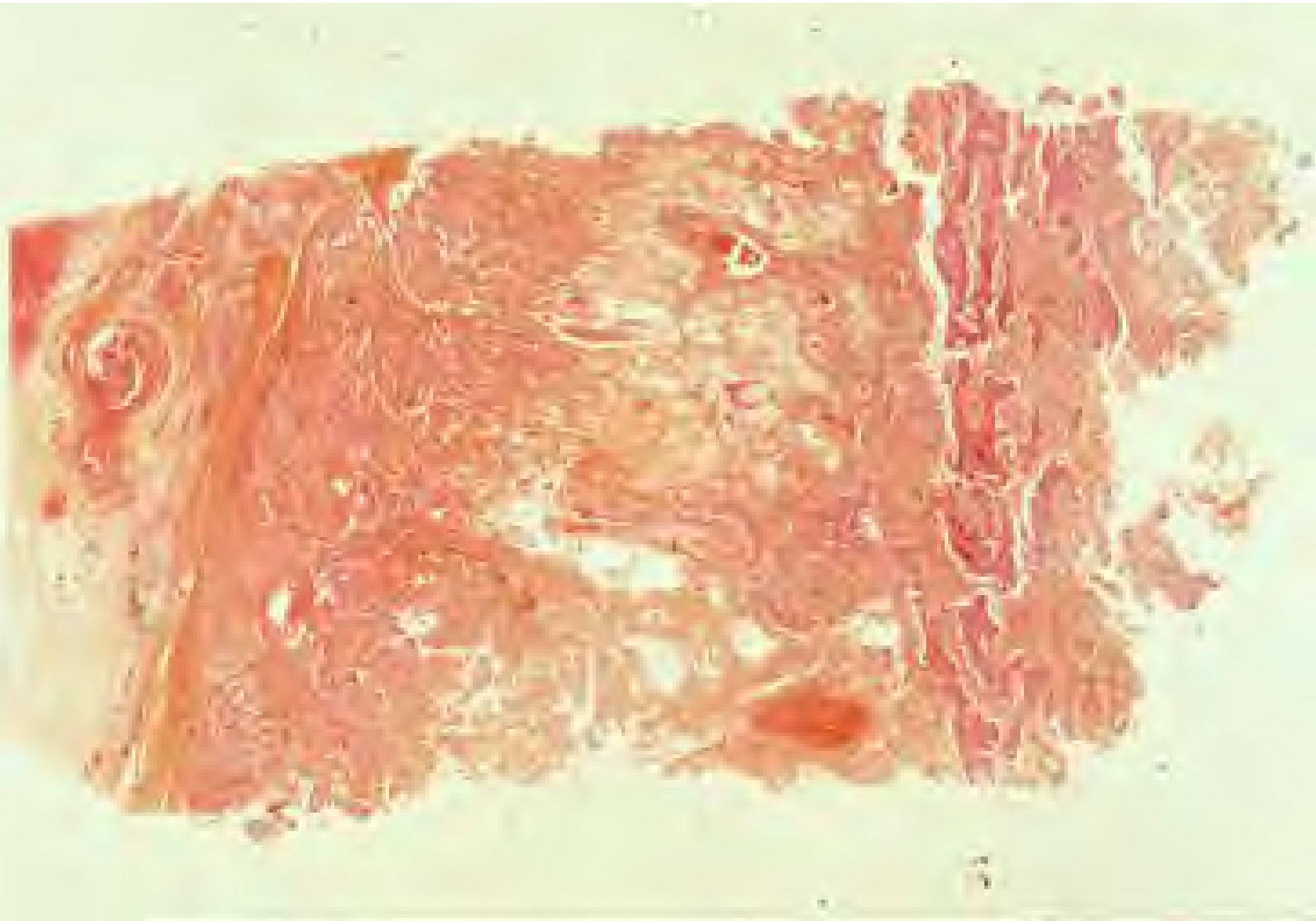


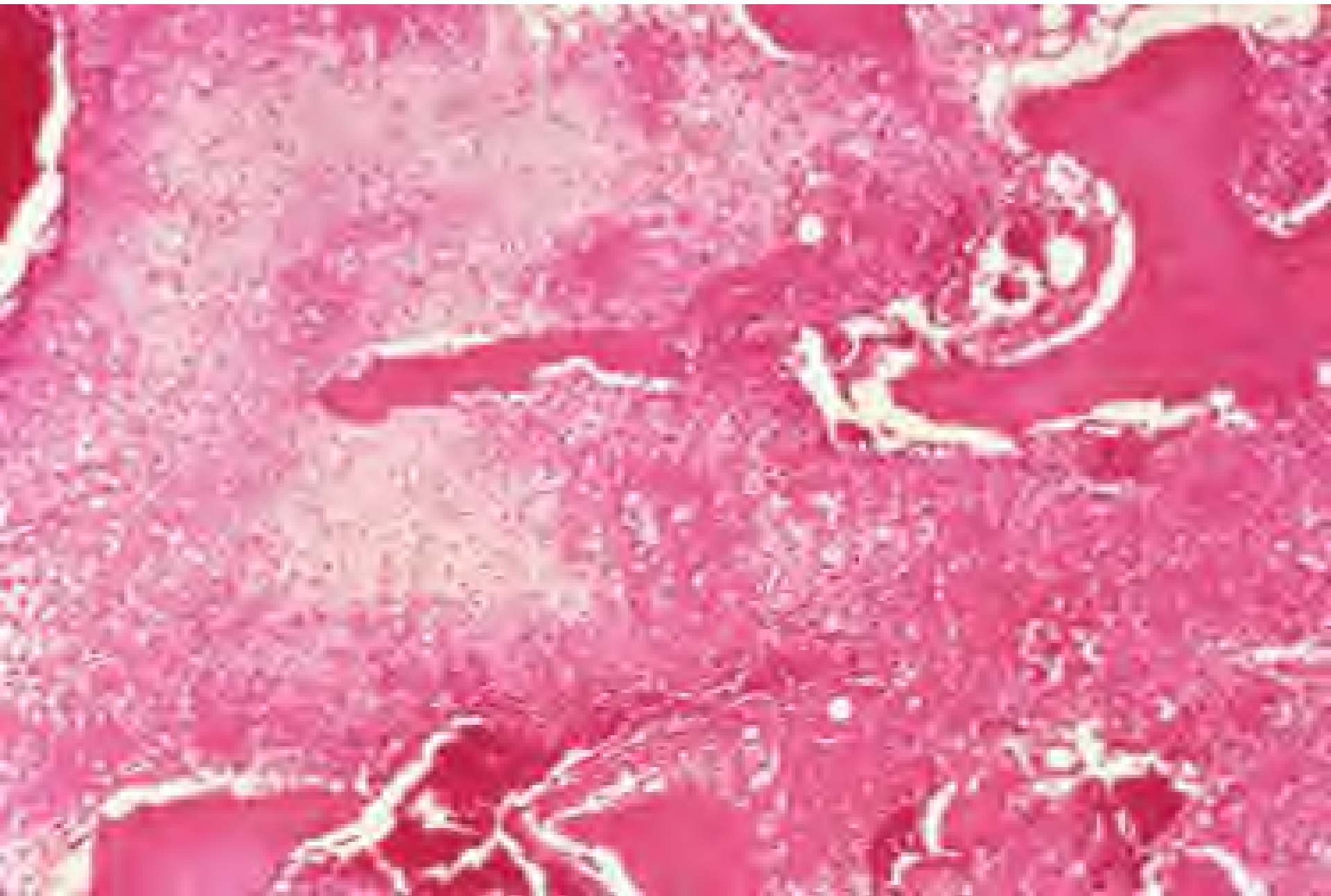
Osteogenic sarcoma

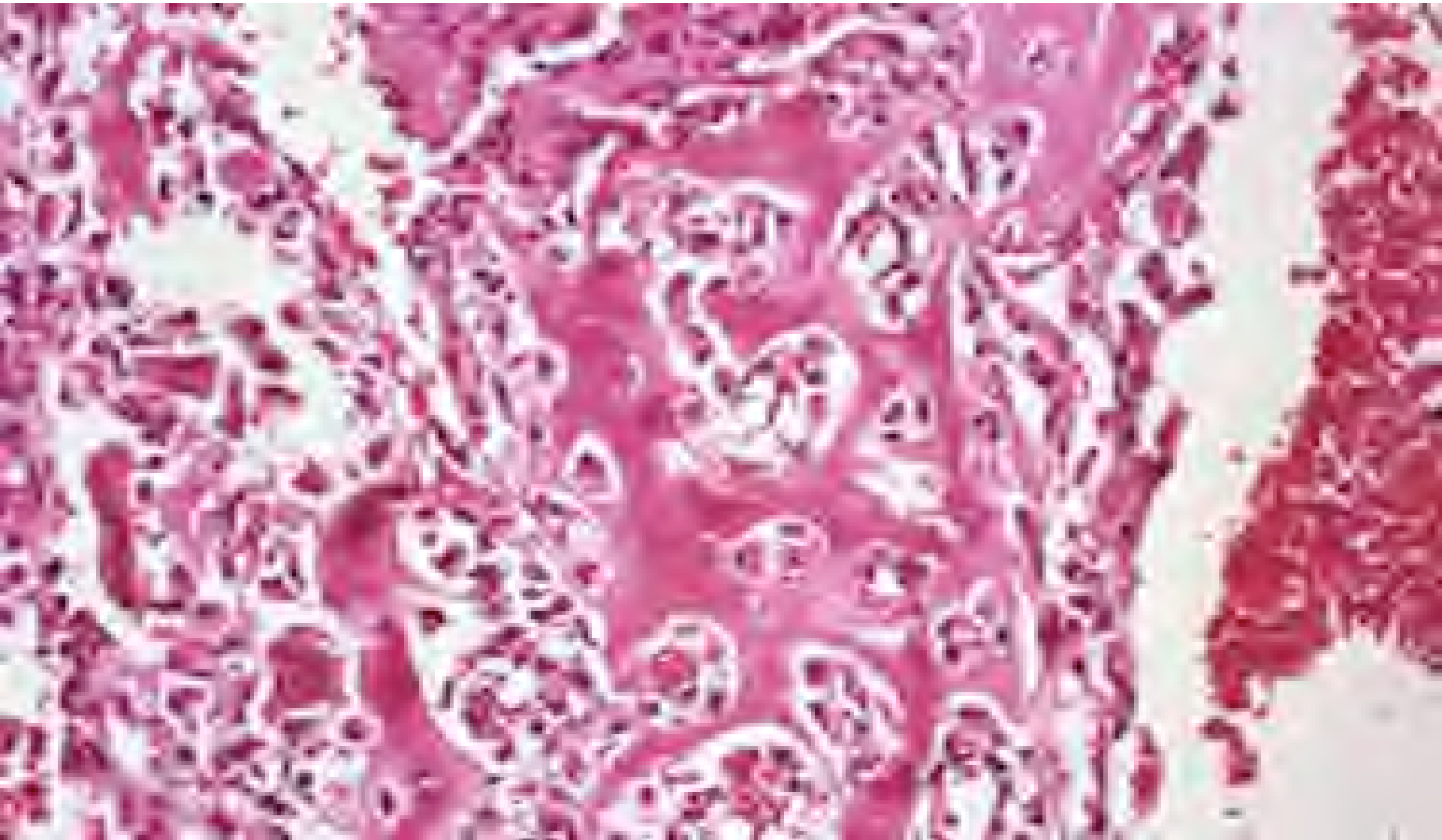


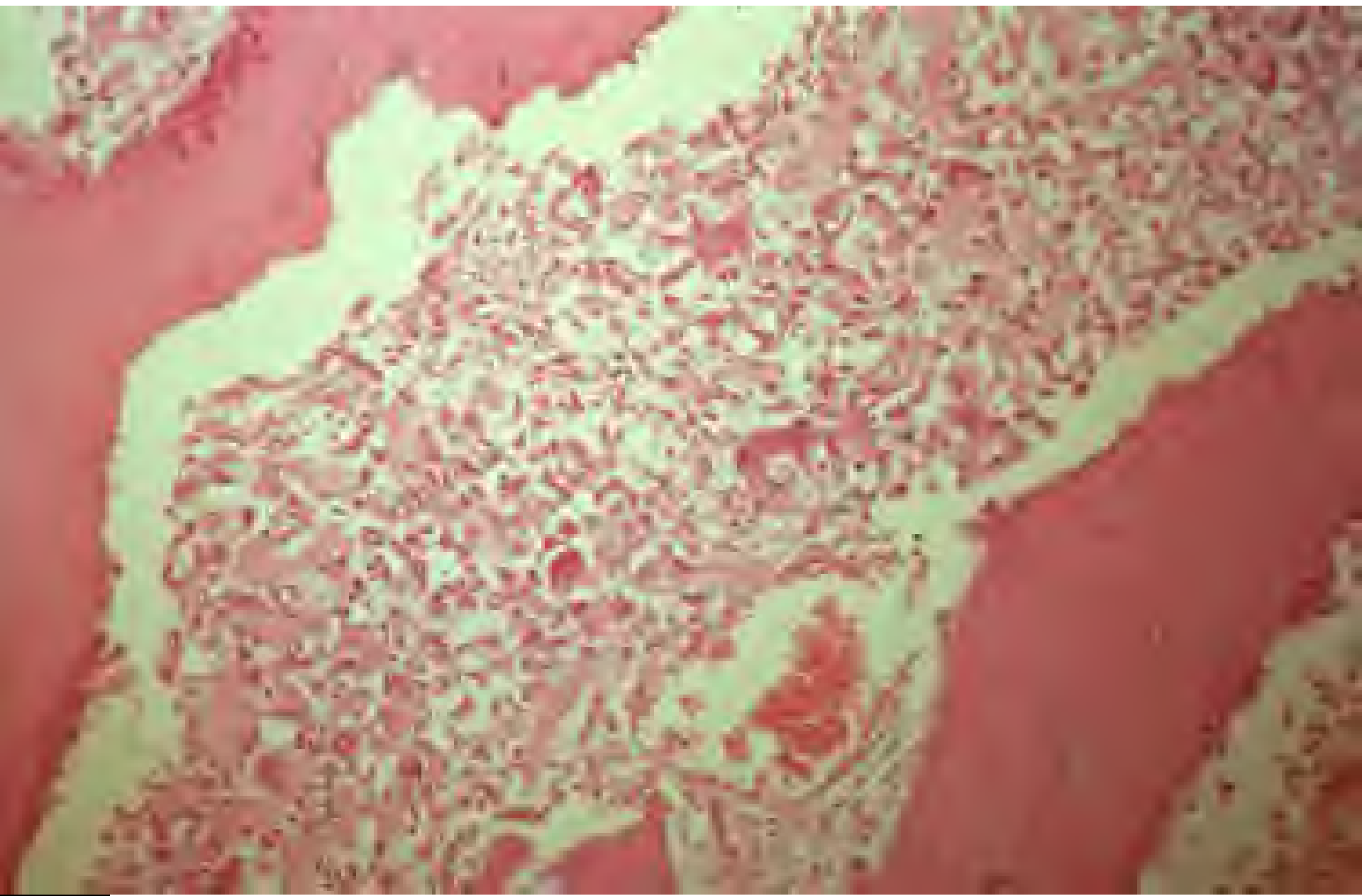












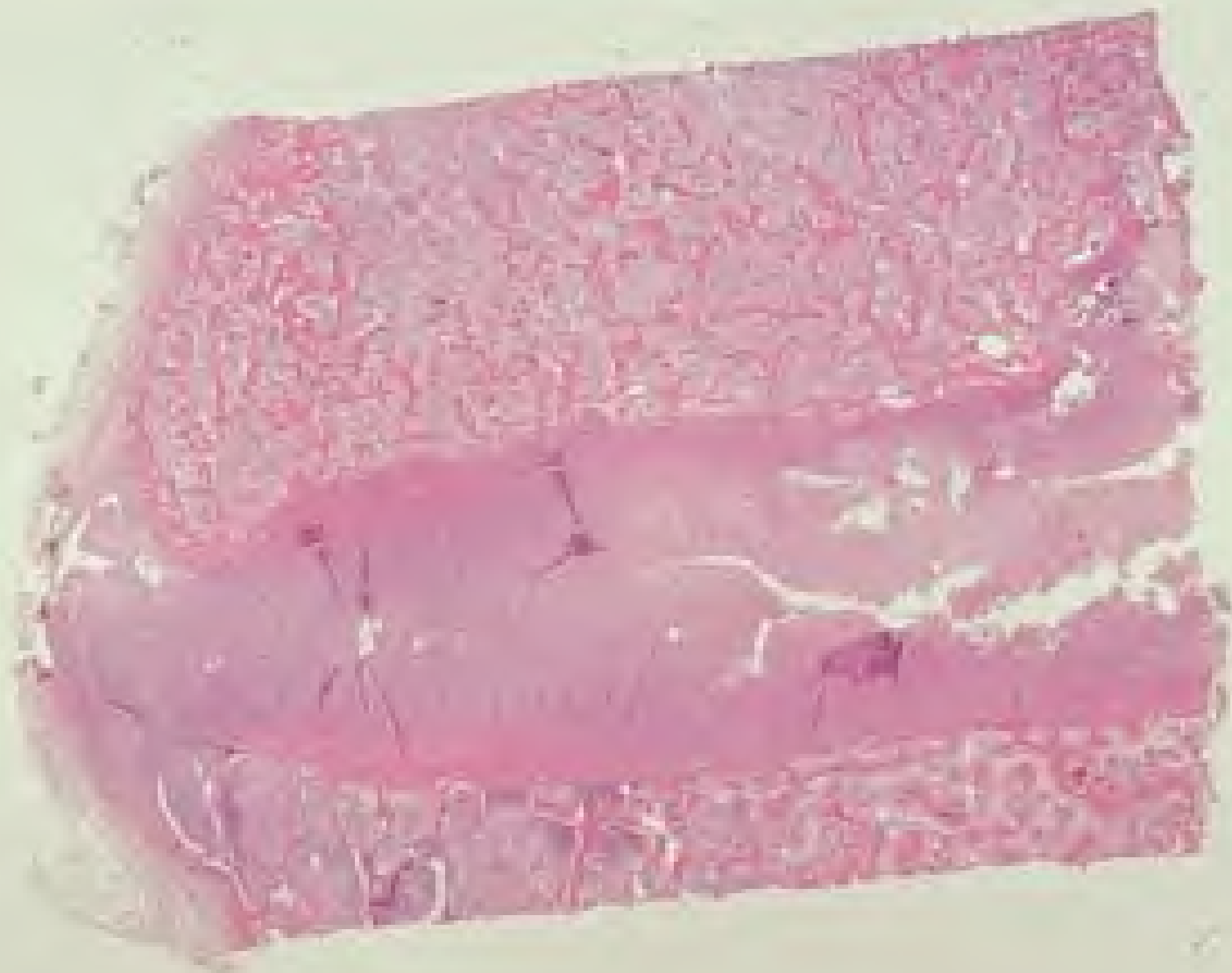


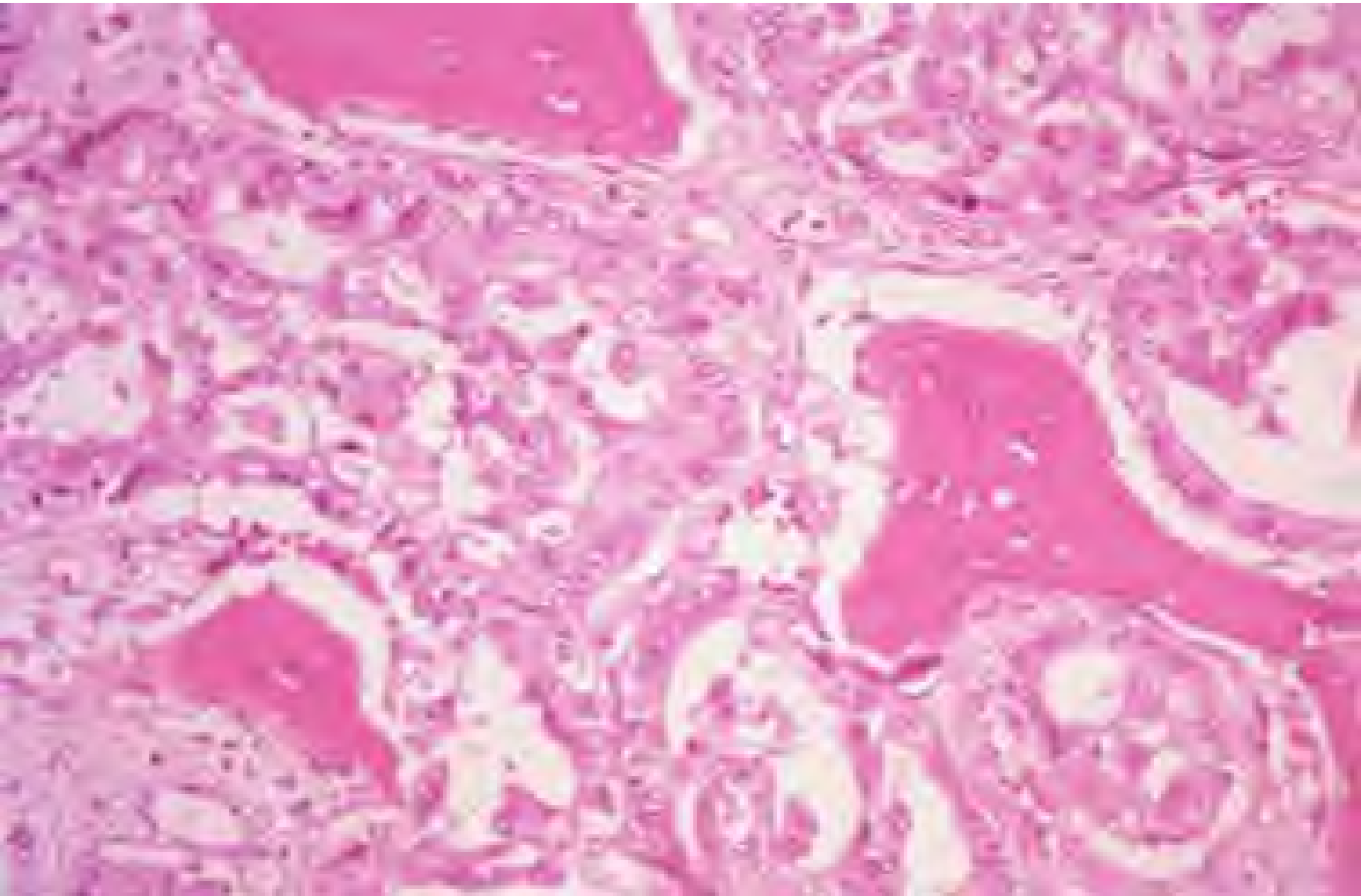
Metastatic adenocarcinoma

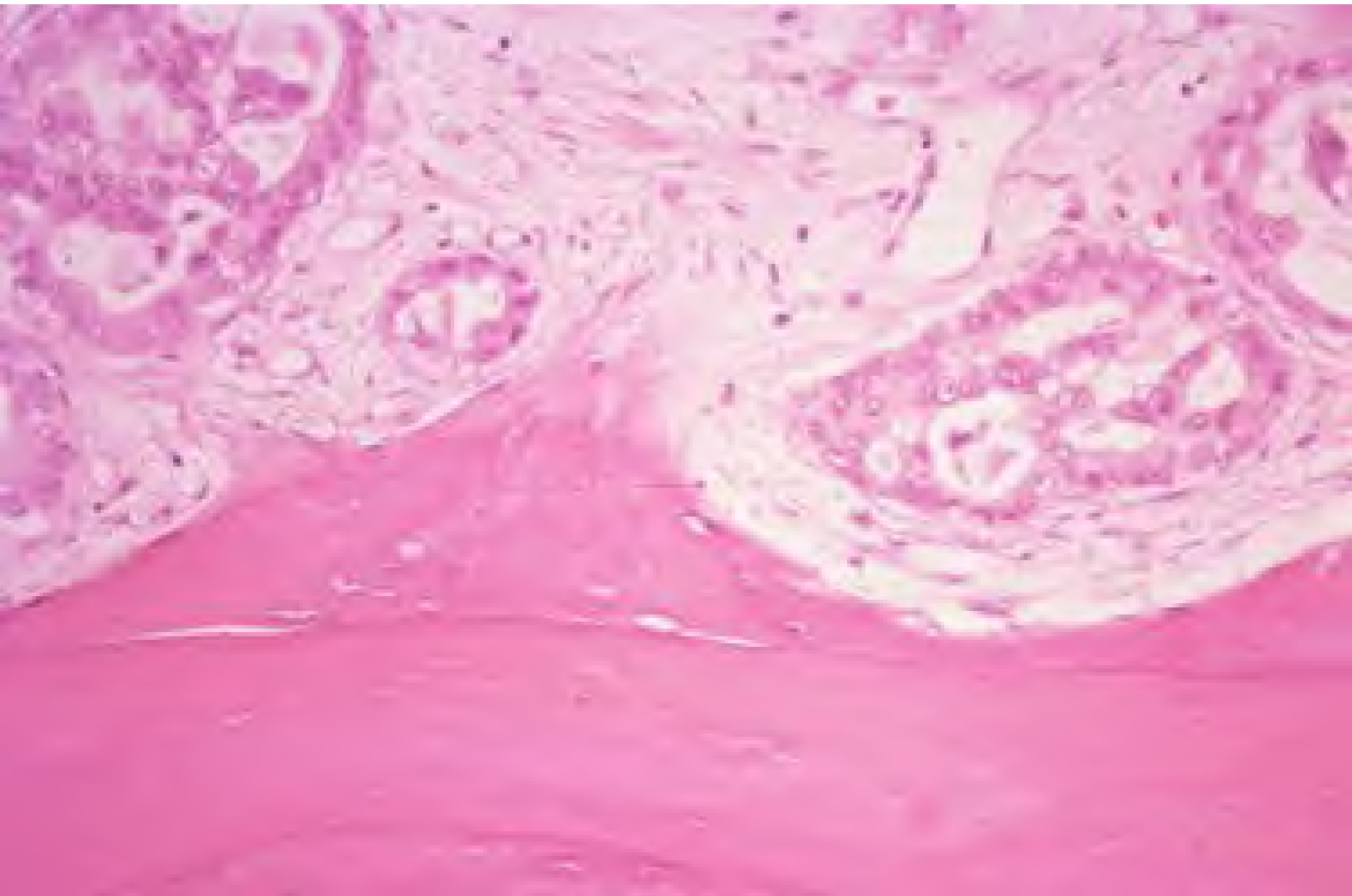


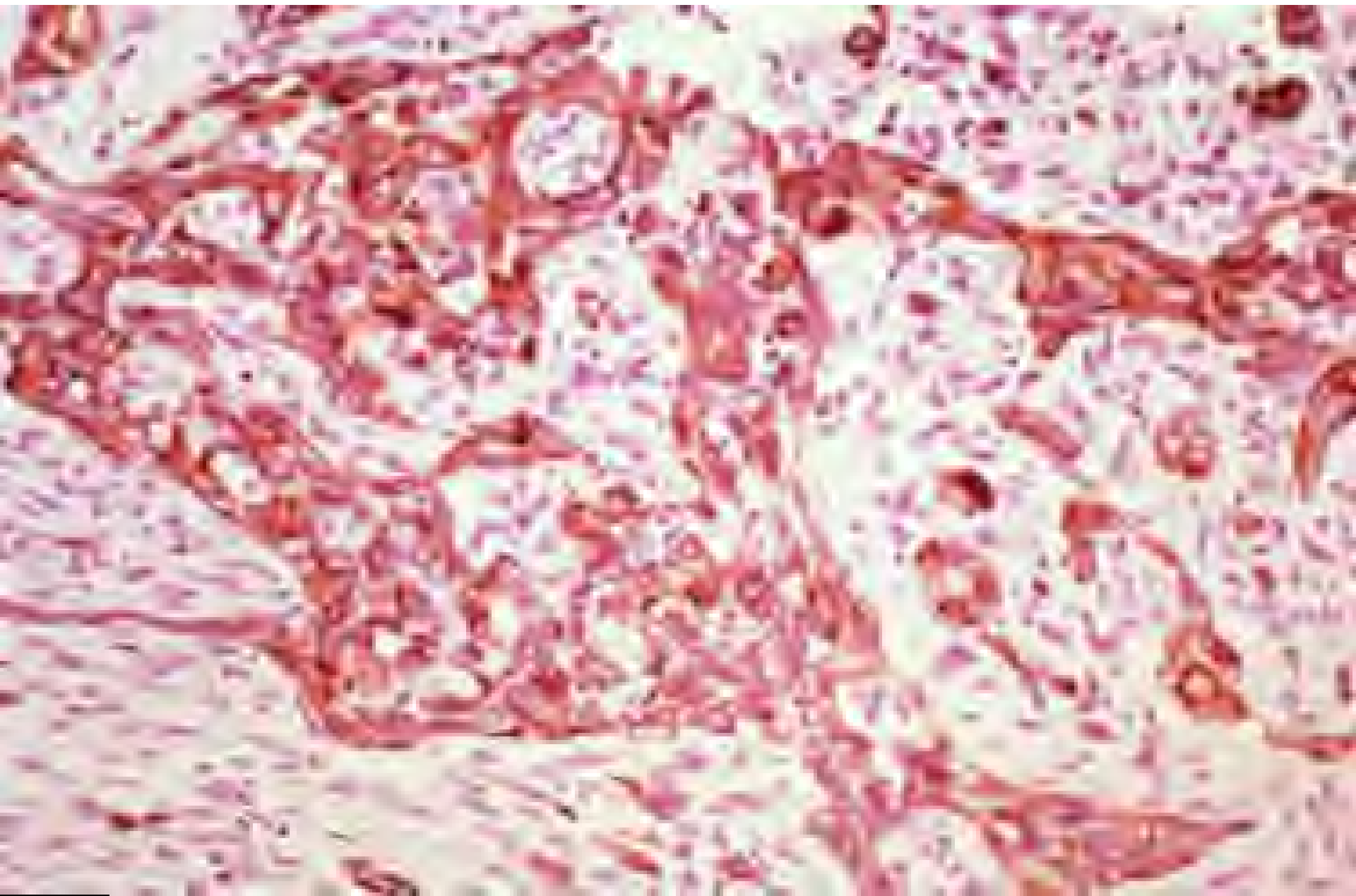






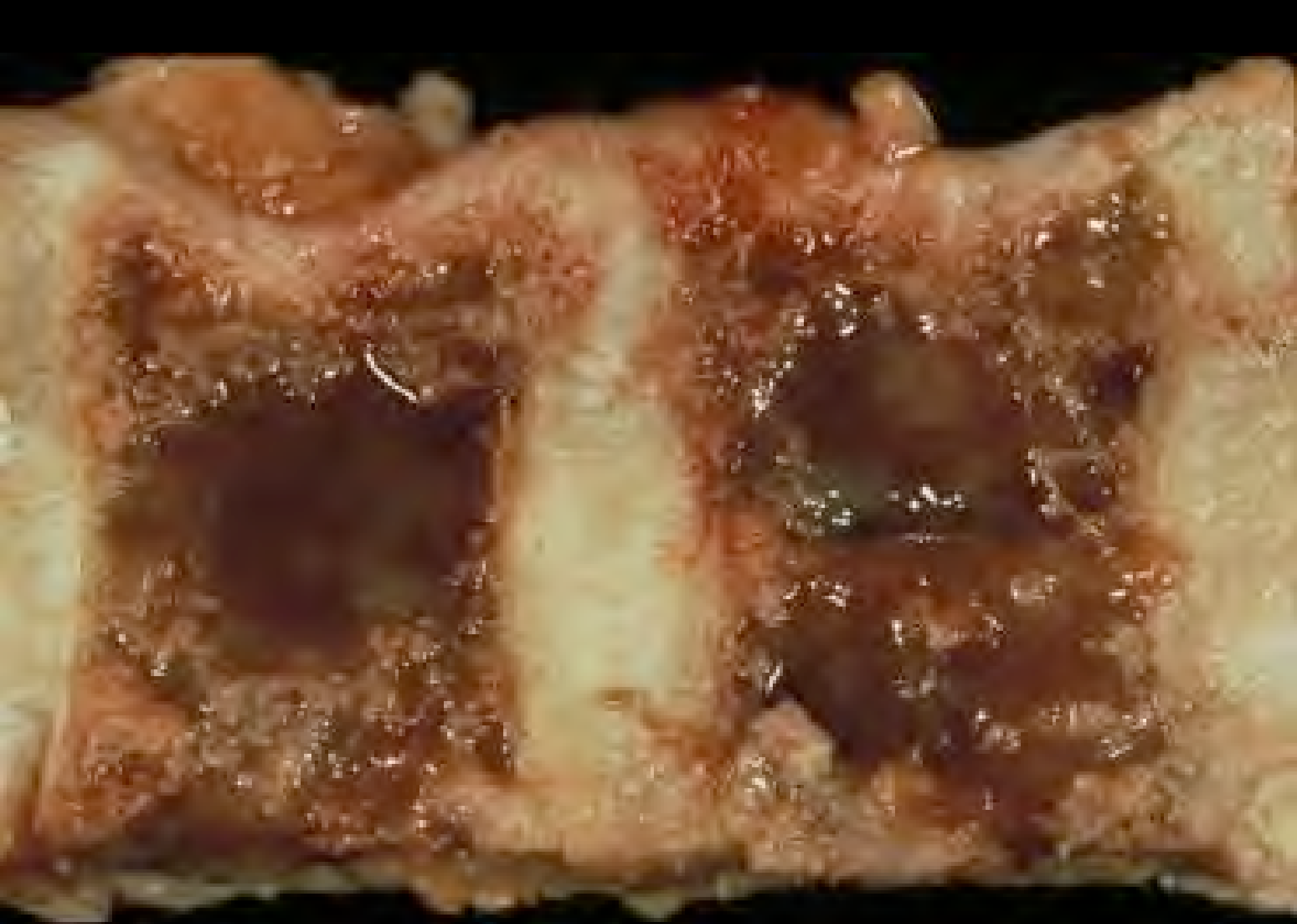






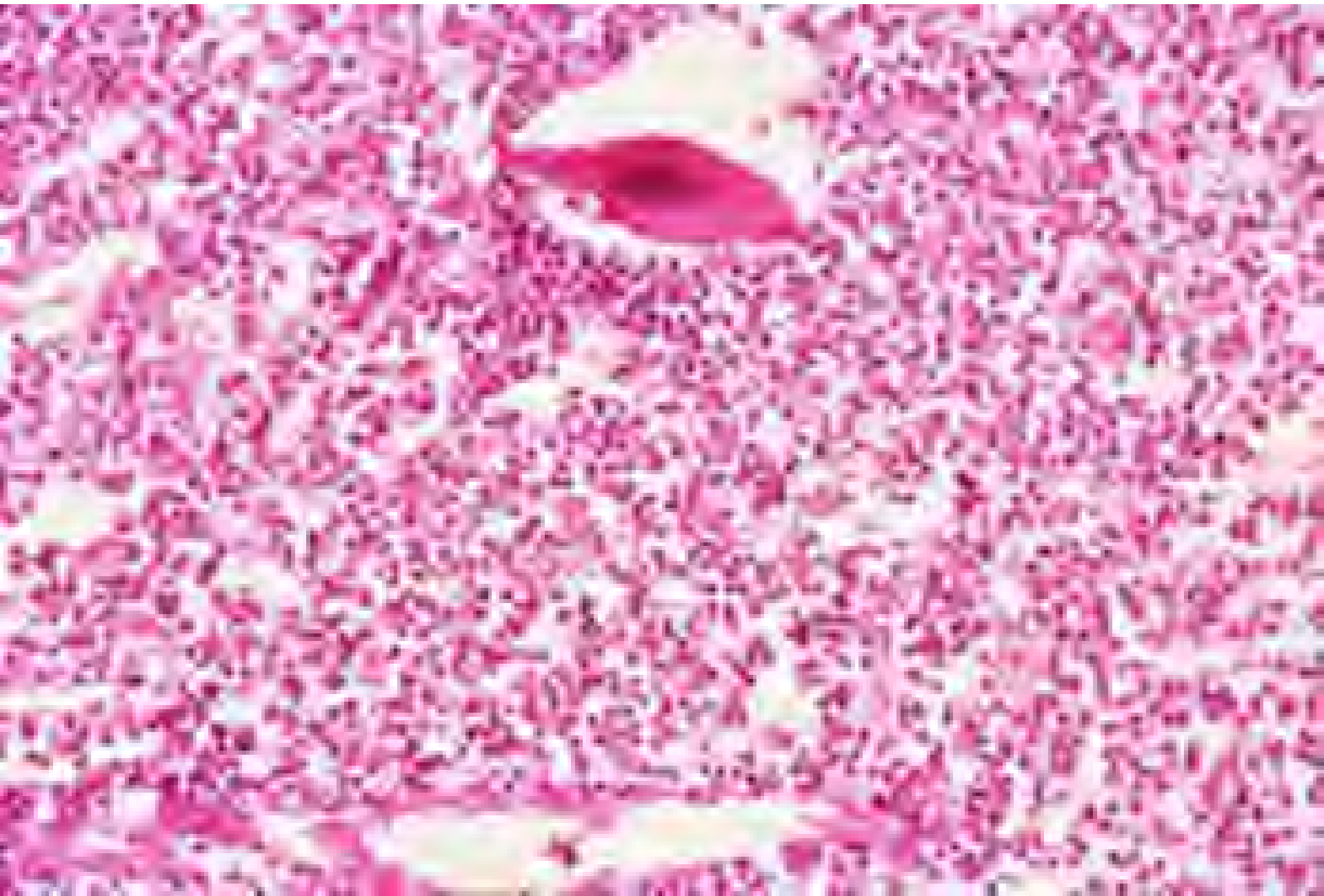
Multiple myeloma

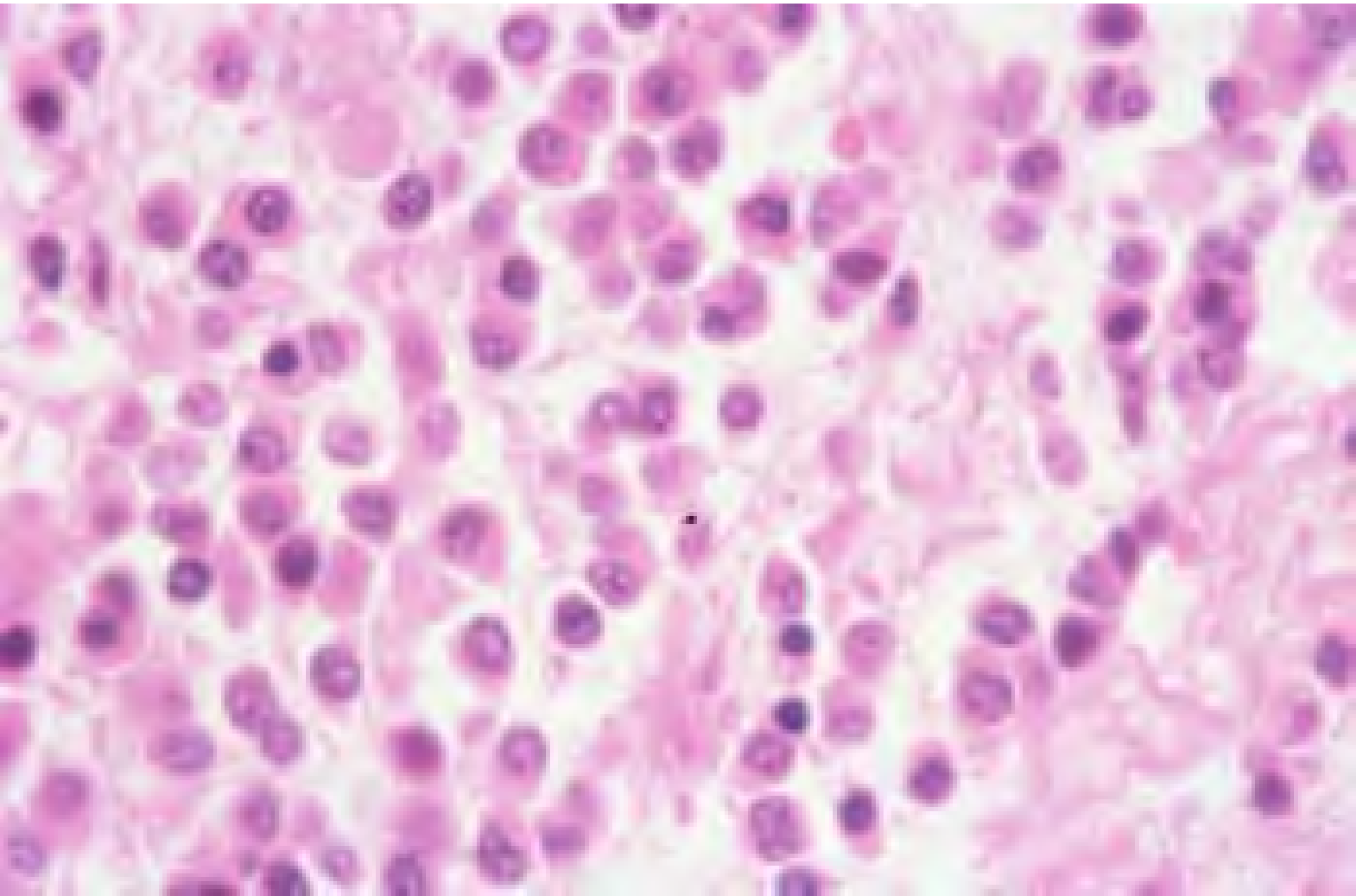








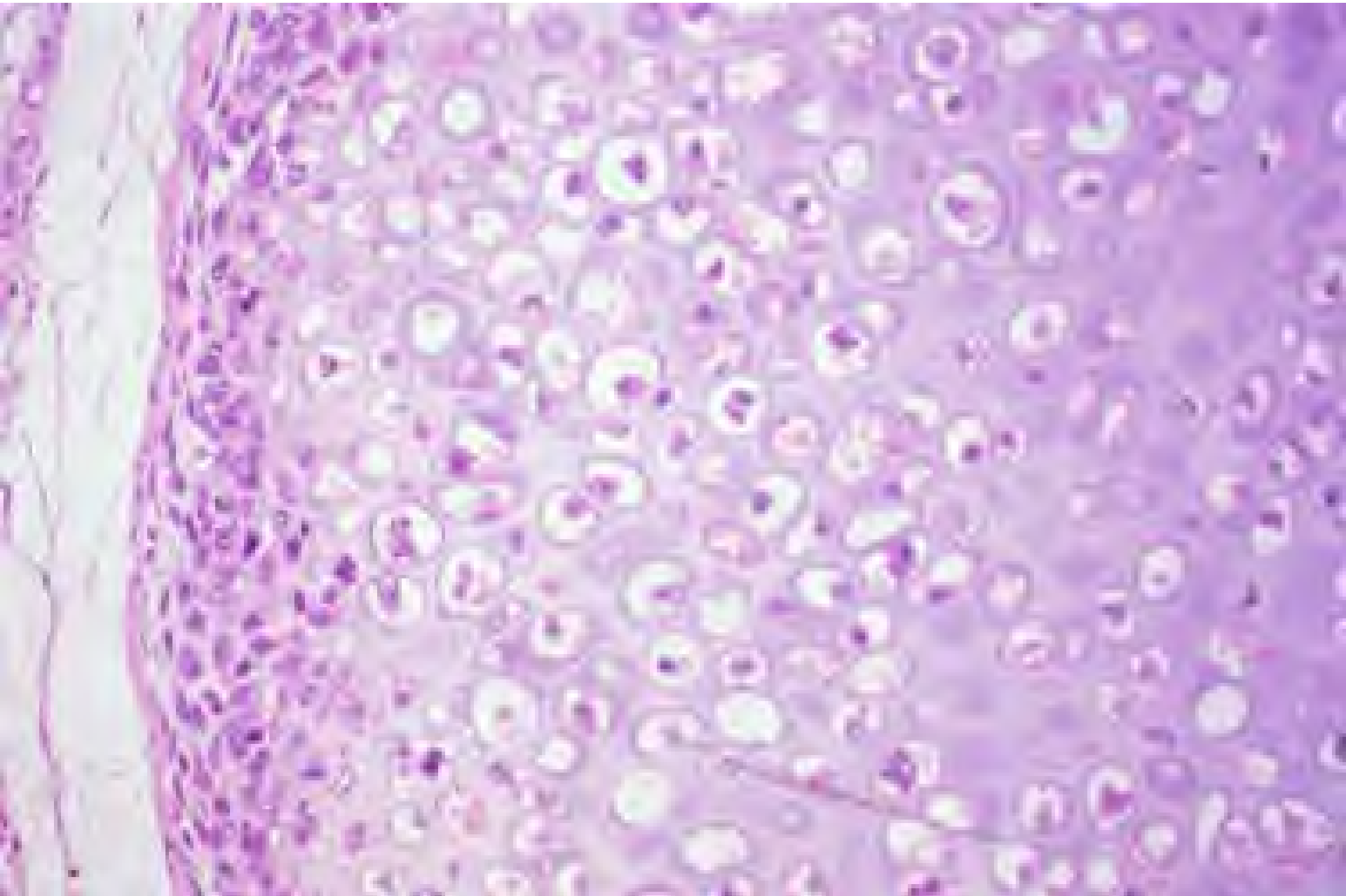


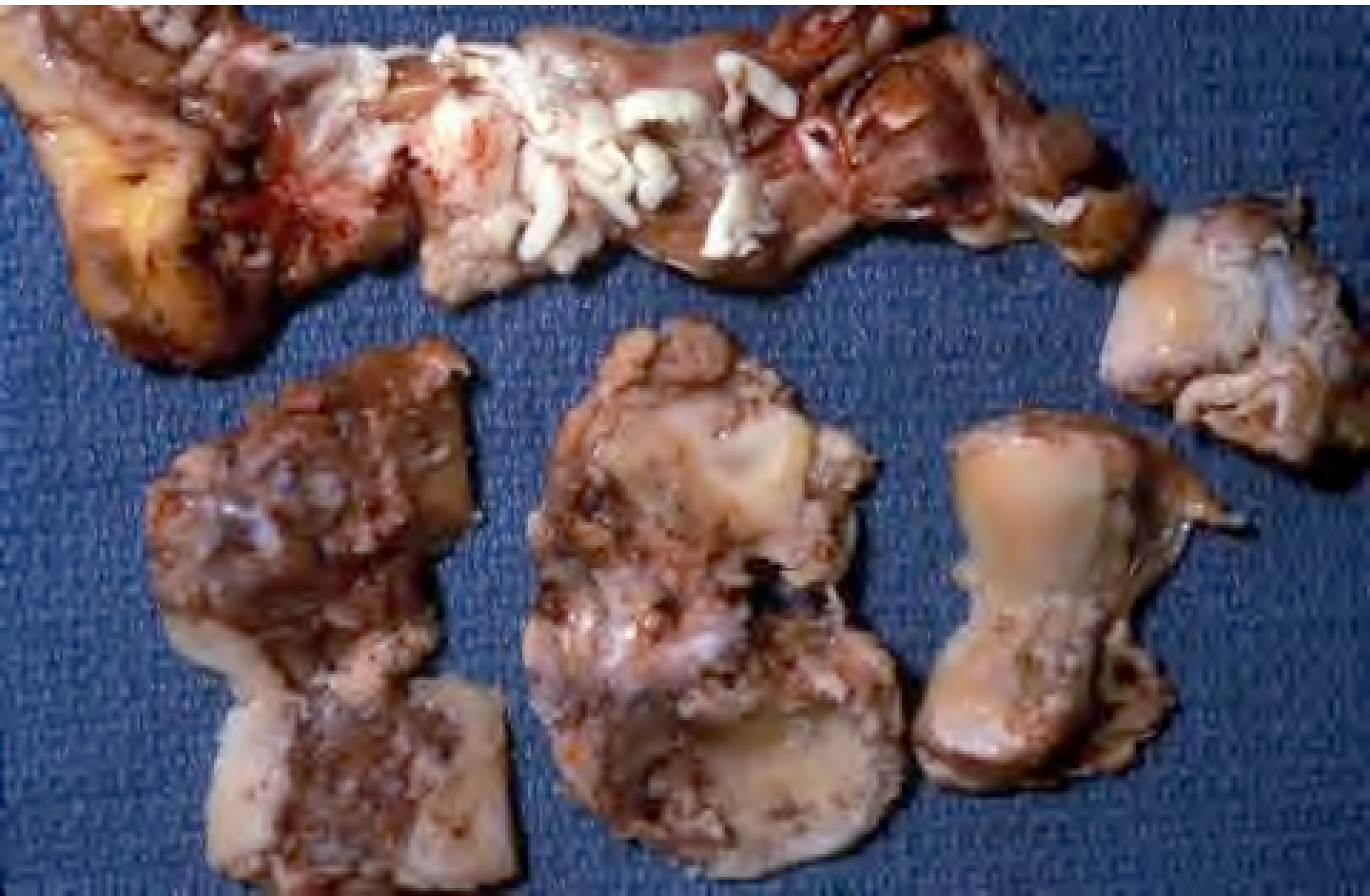


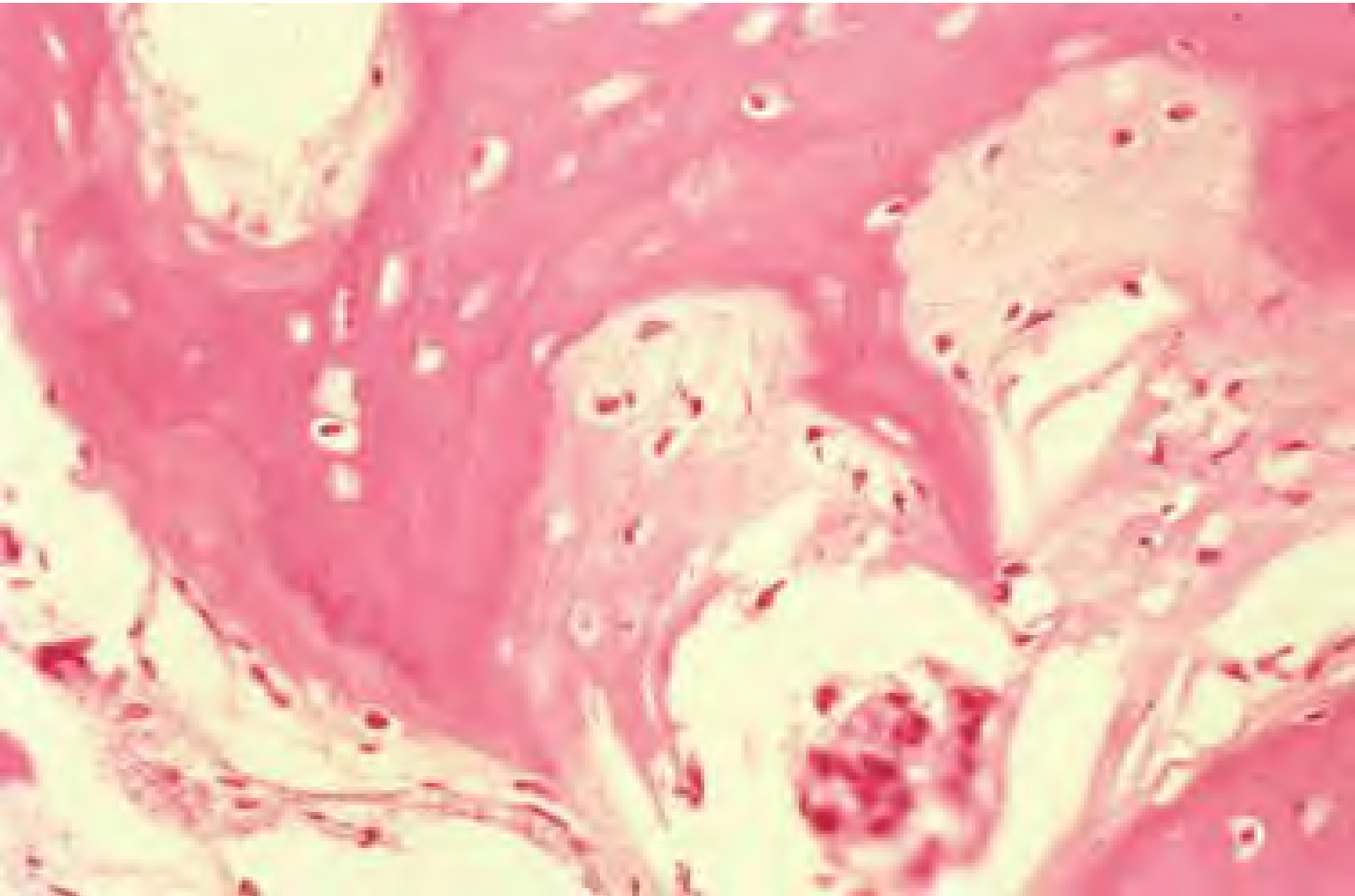
M-2 Musculoskeletal Lab -1

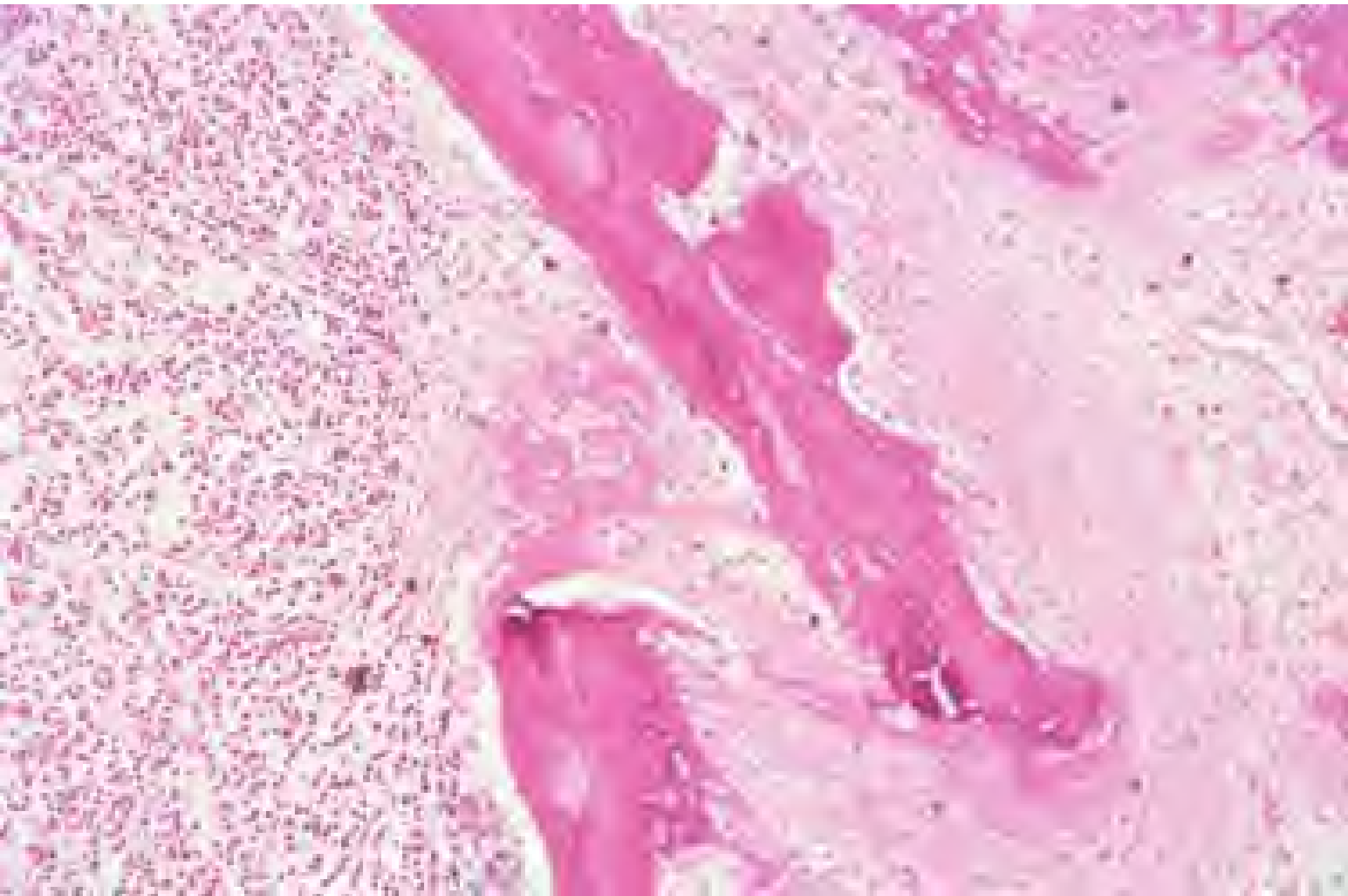


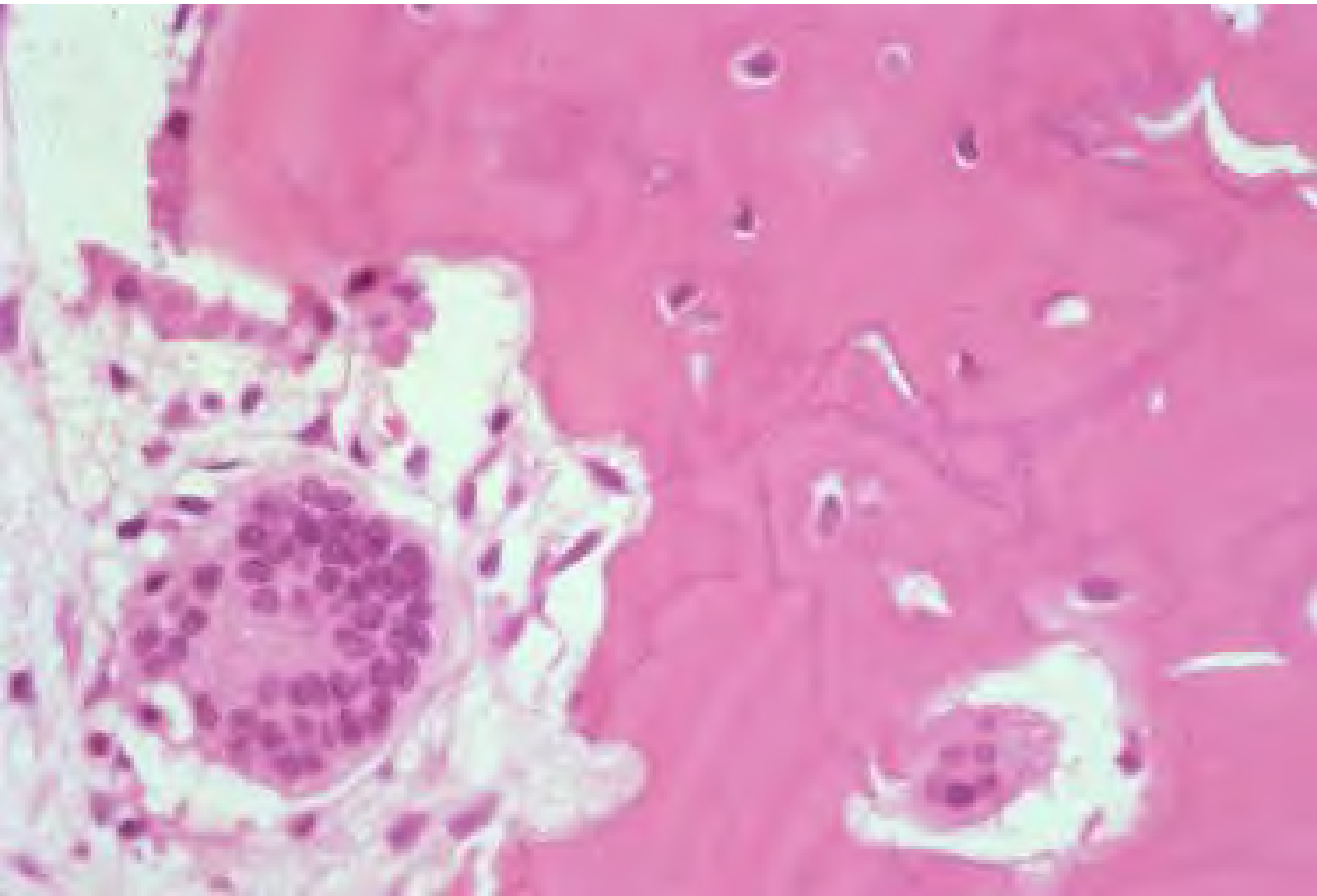
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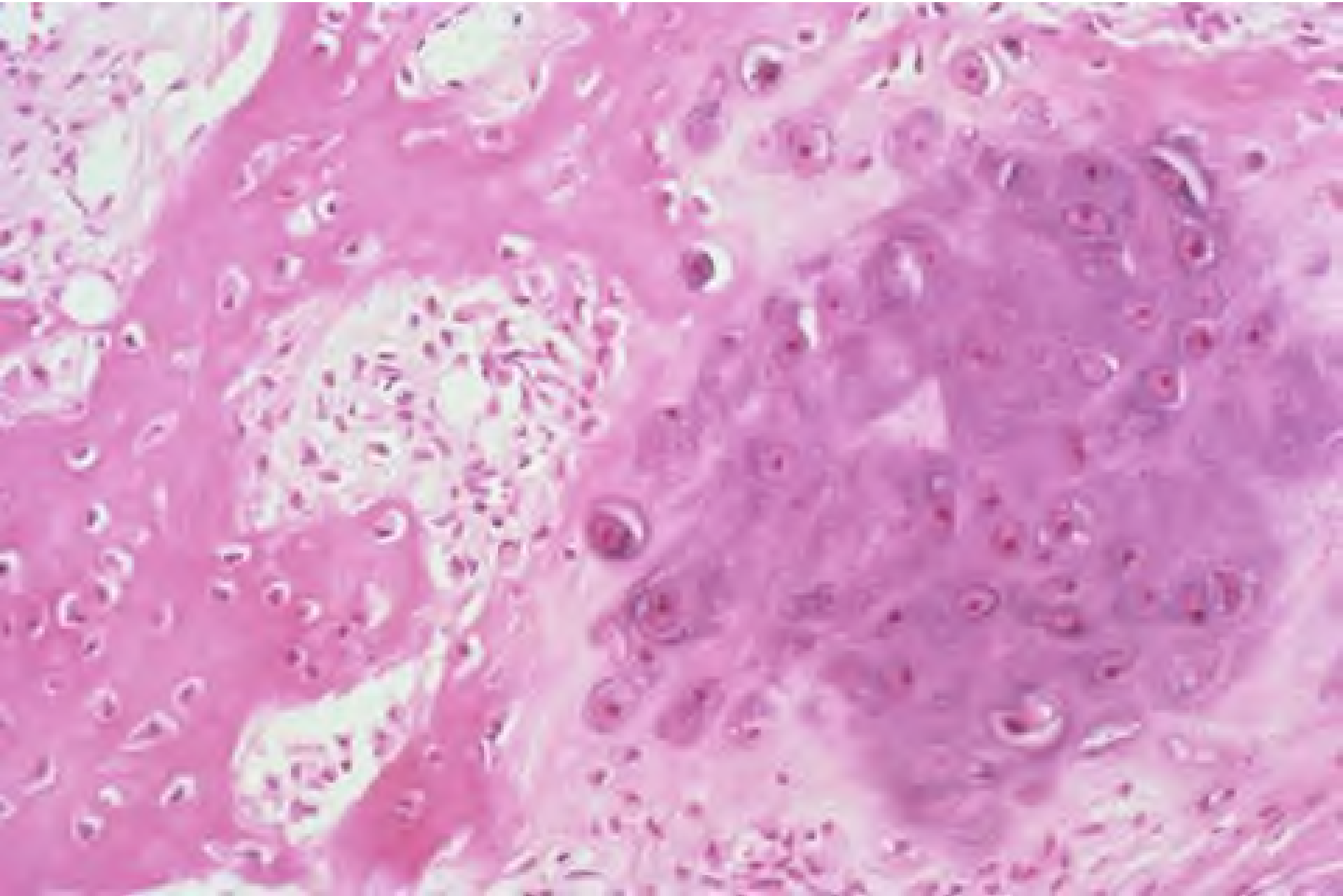


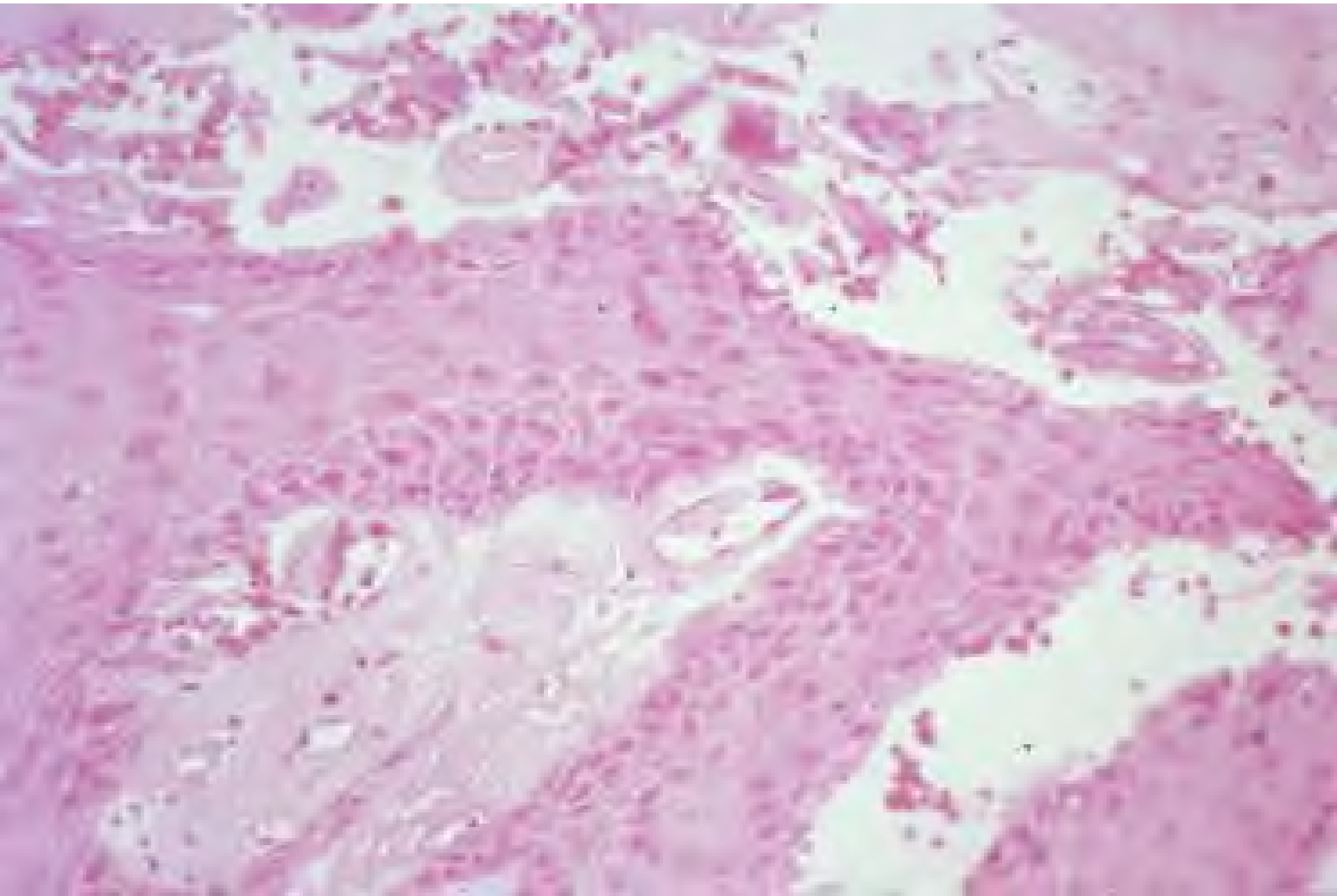


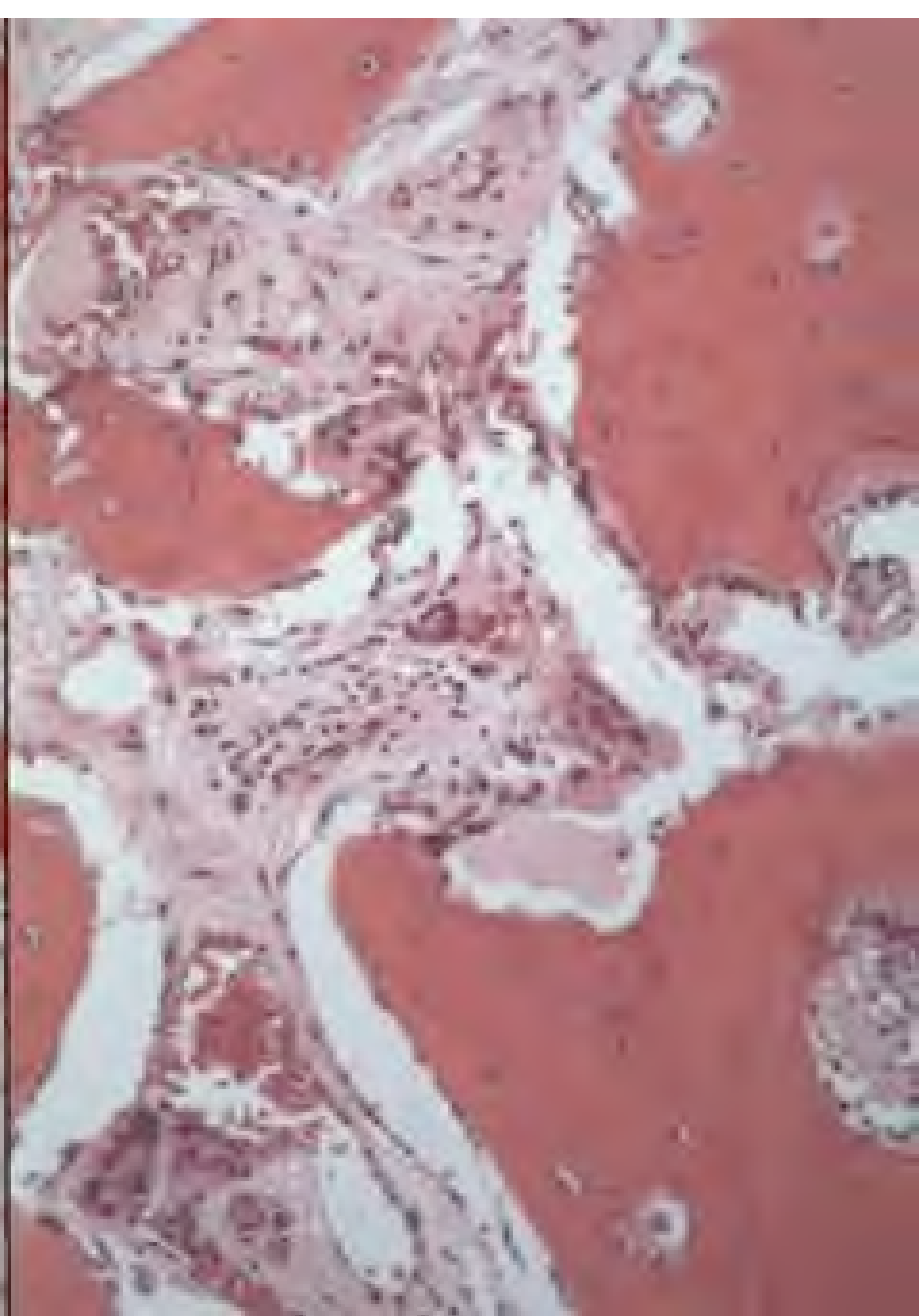


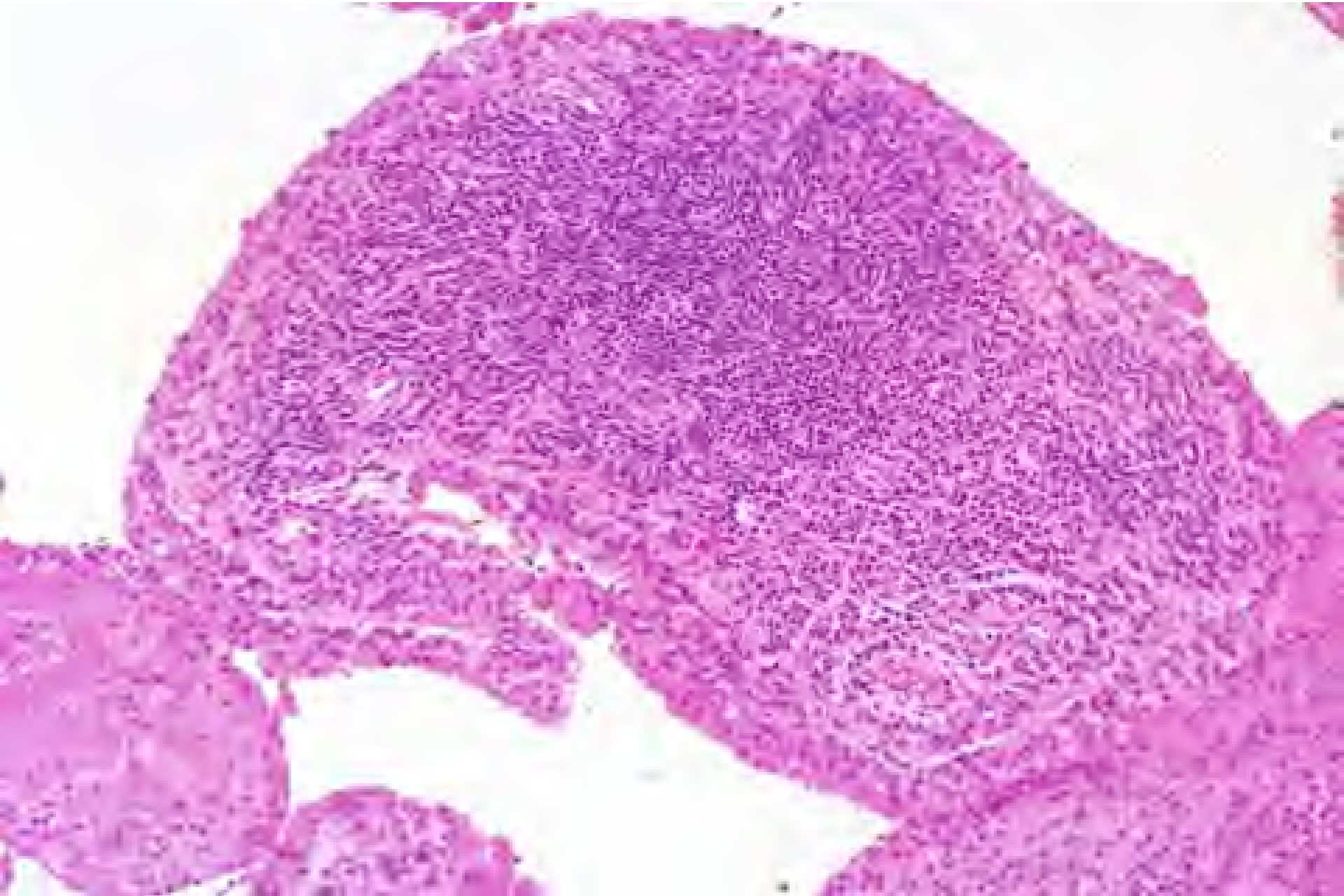




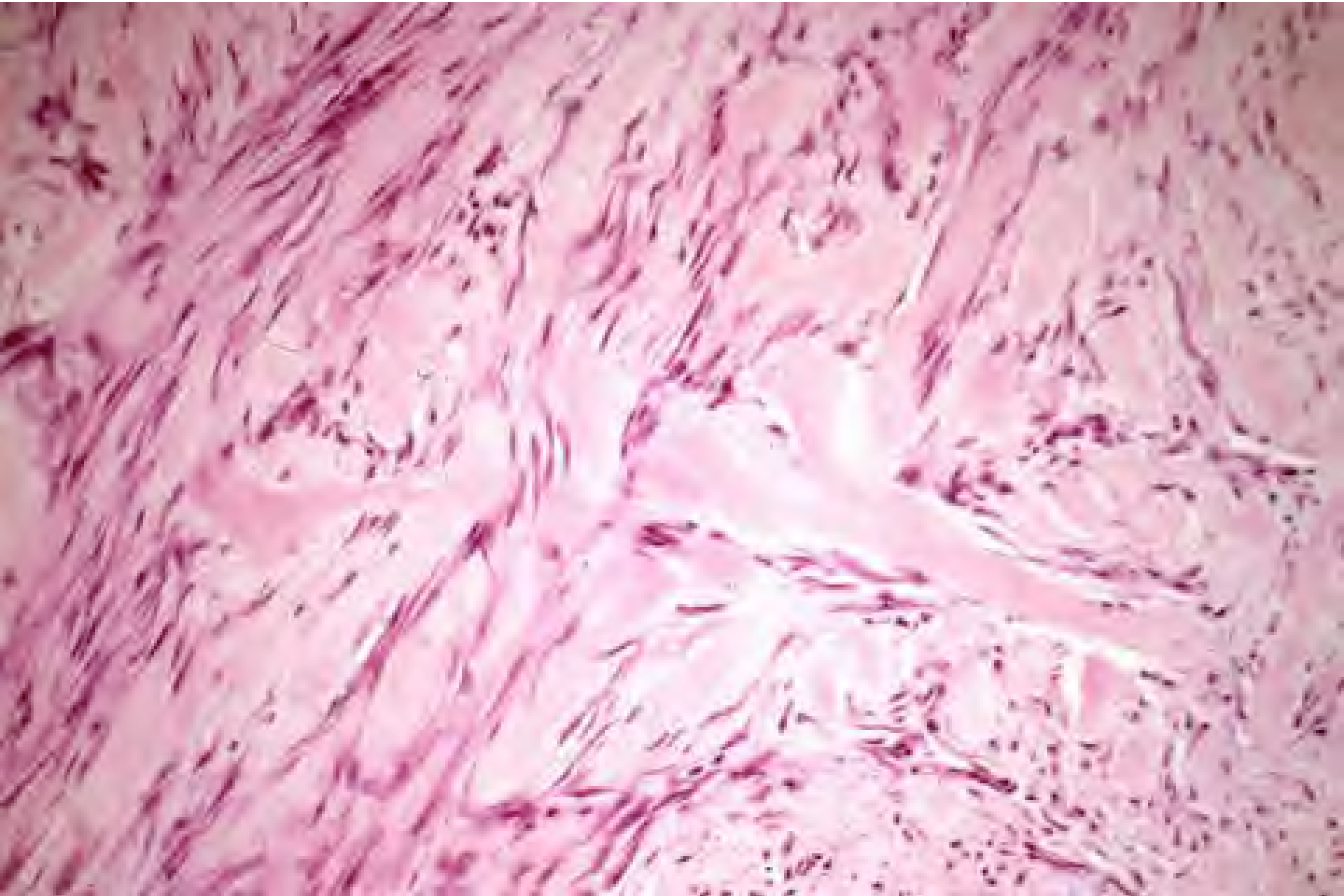


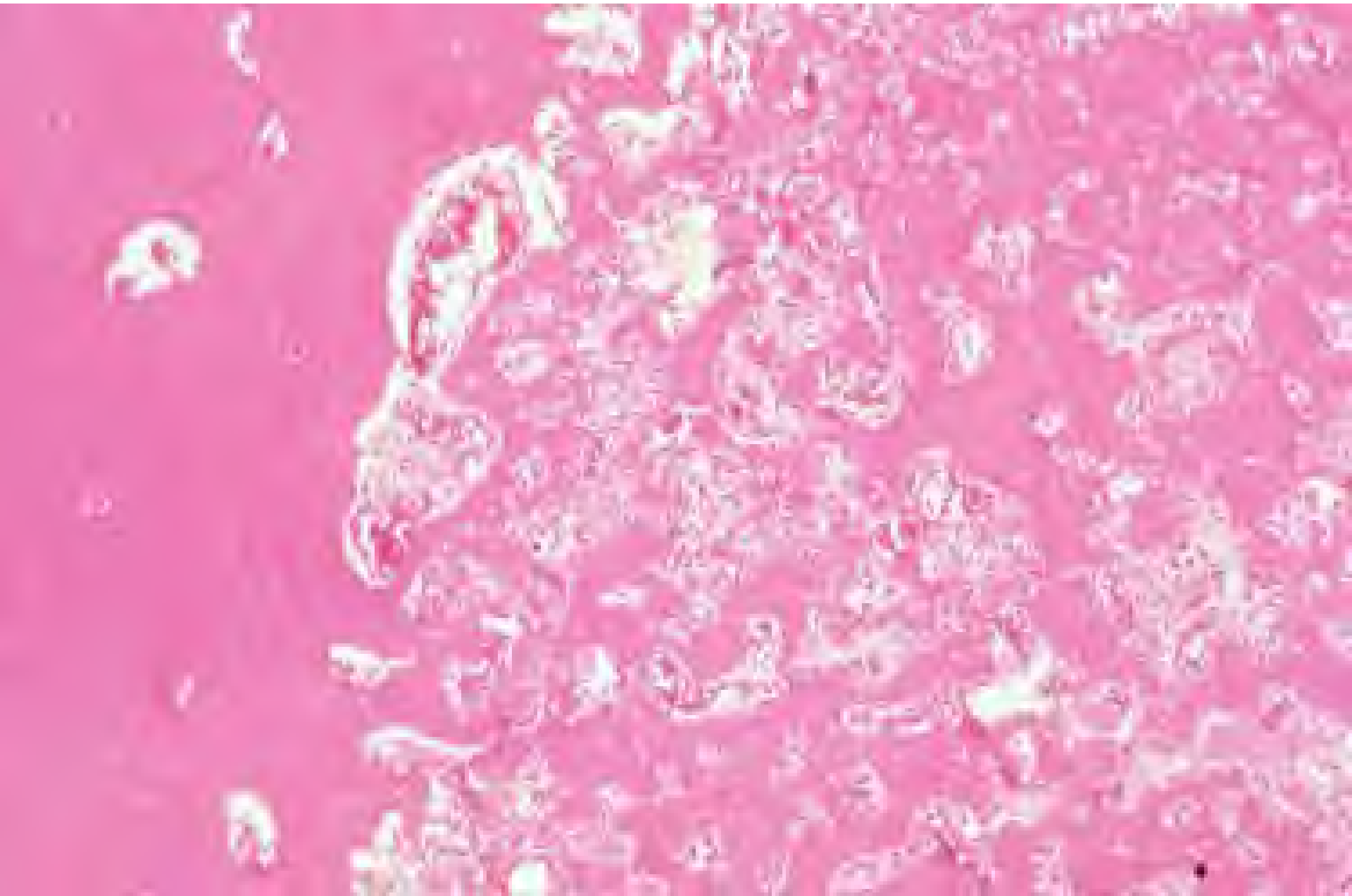


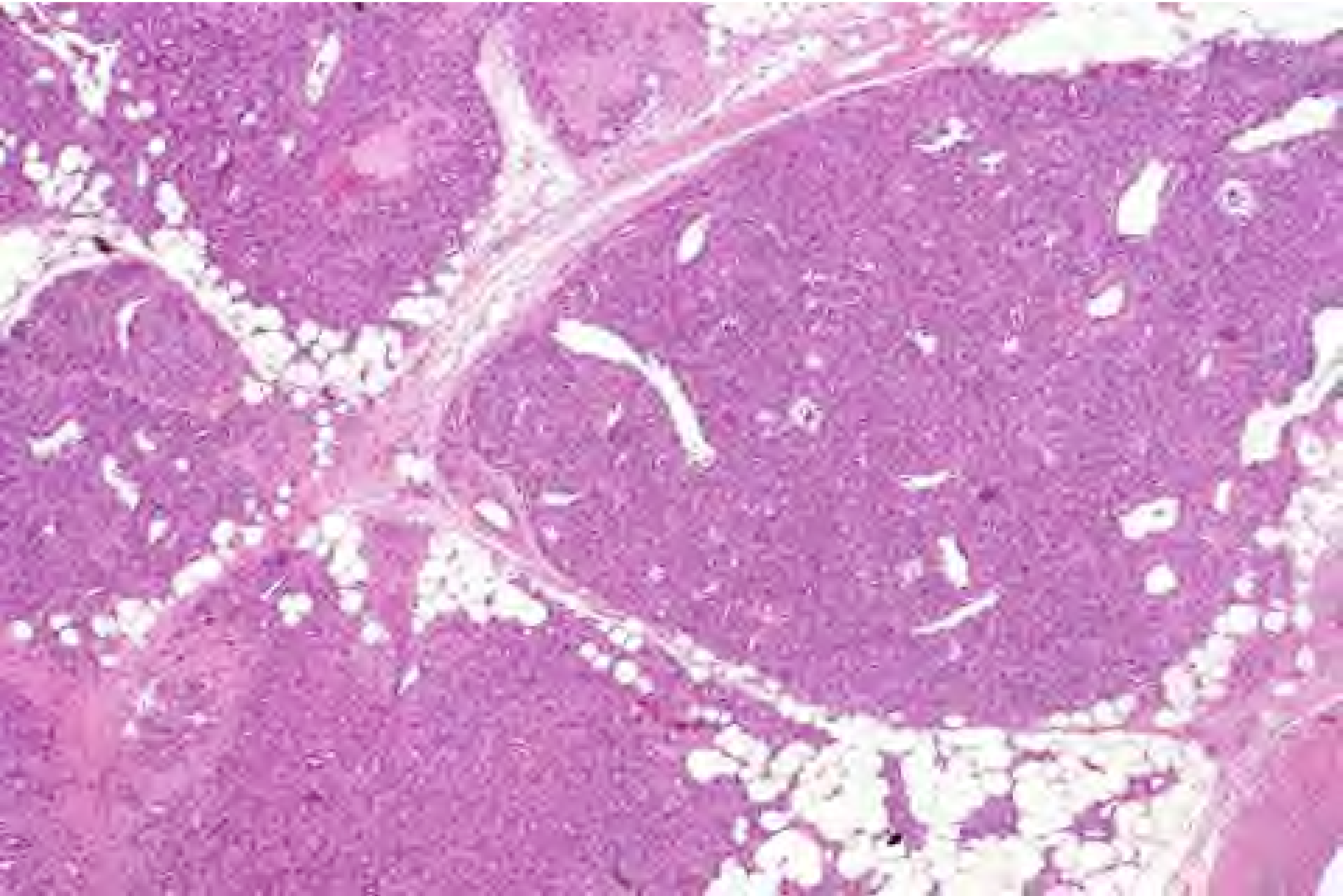


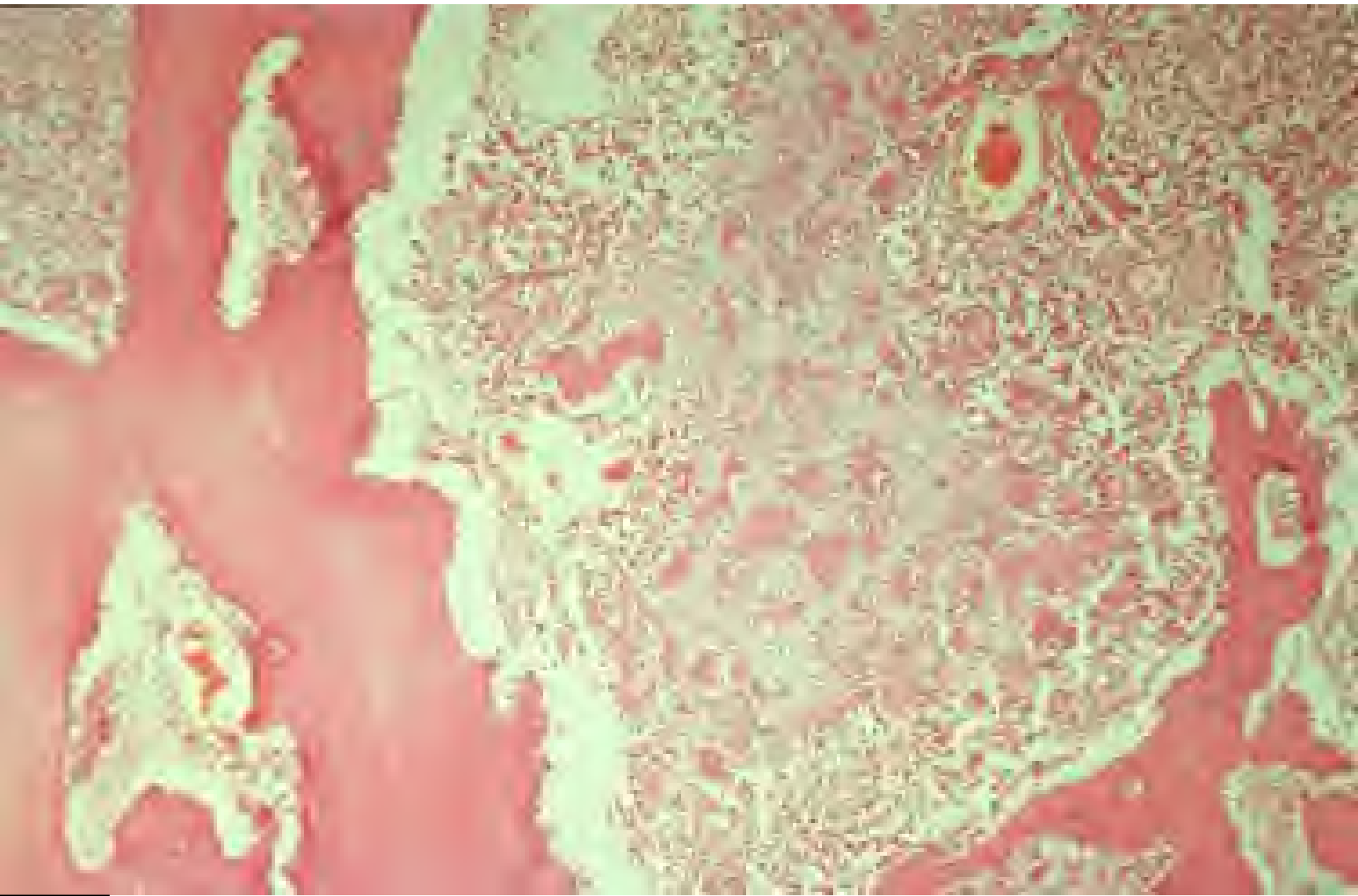








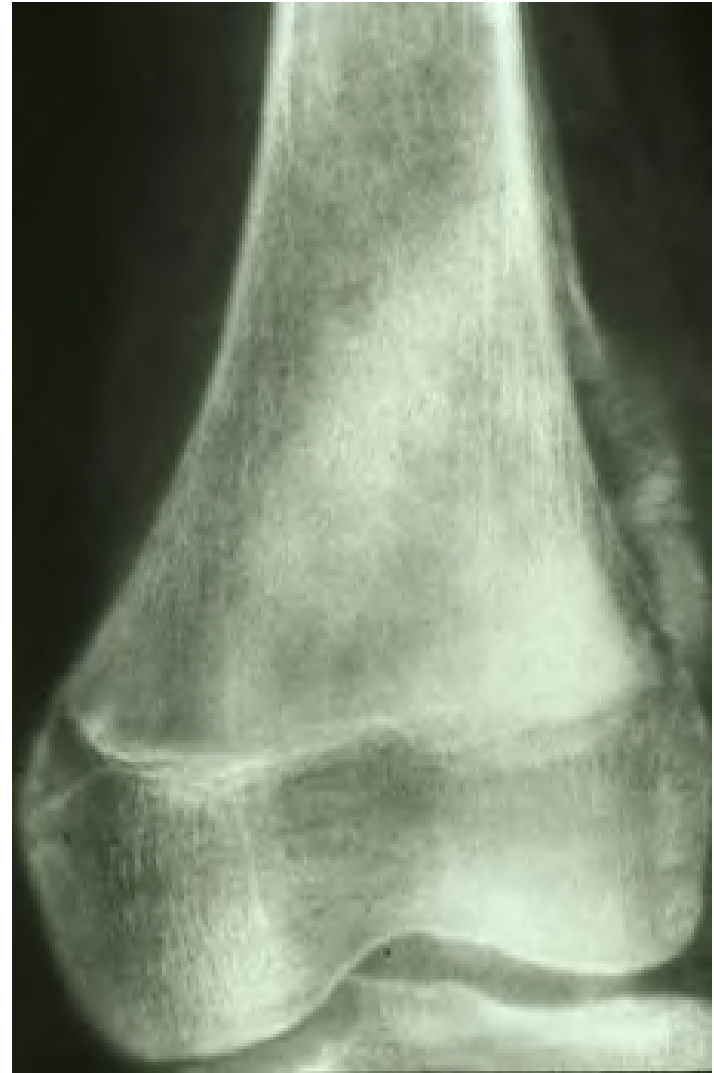








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