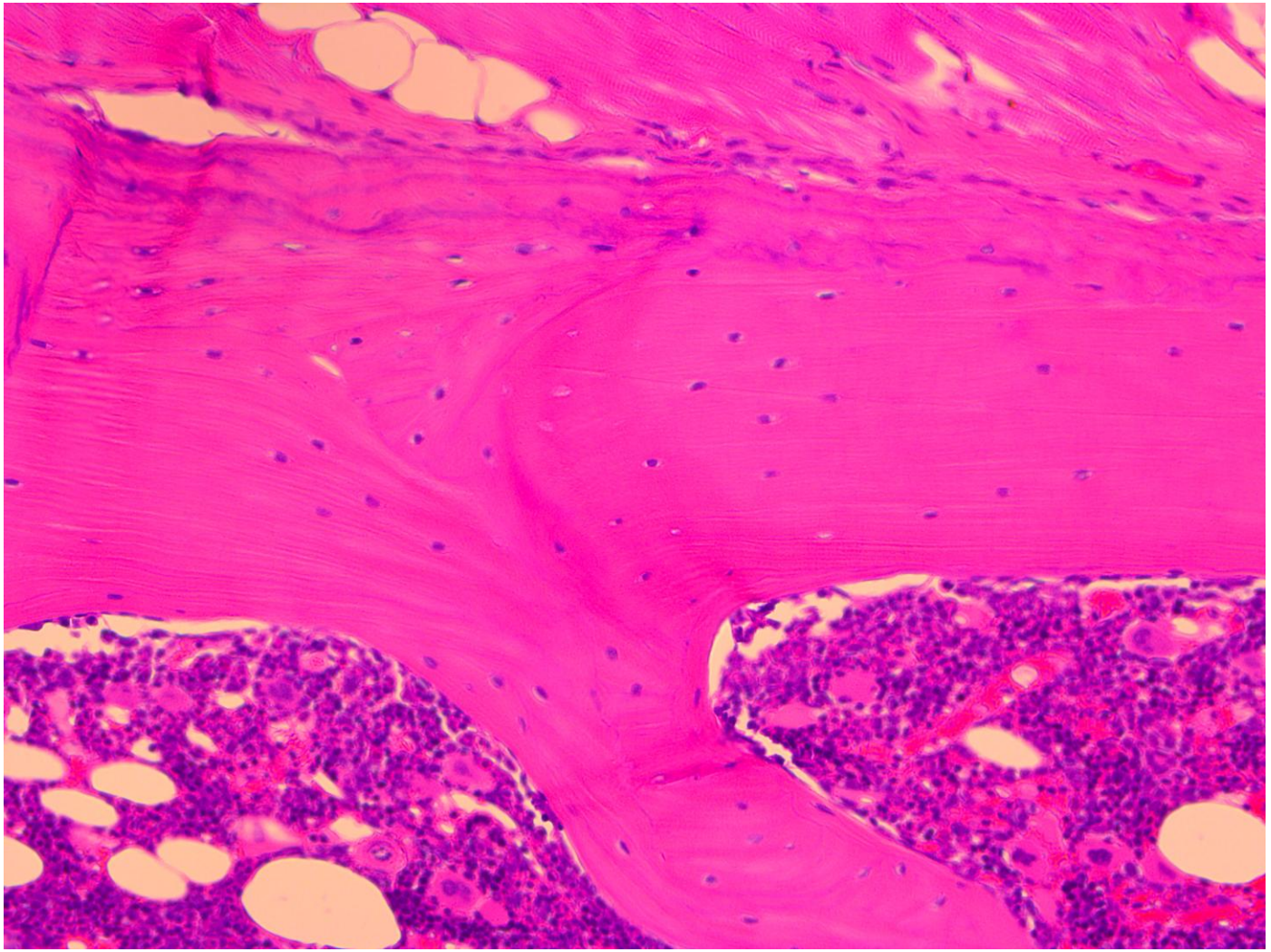
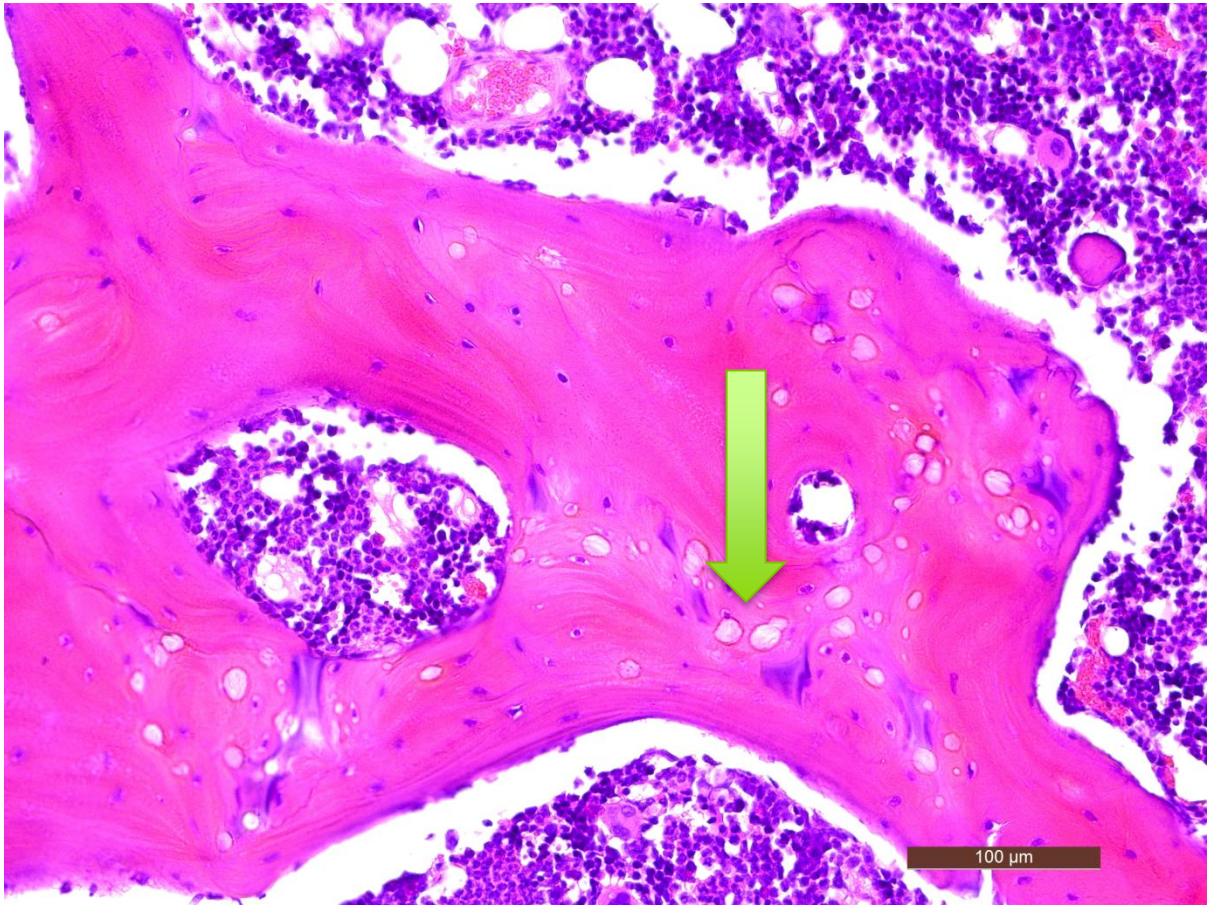
Case history

Bone change - artefact or real?

Rat sternum, control



Rat, sternum, globules



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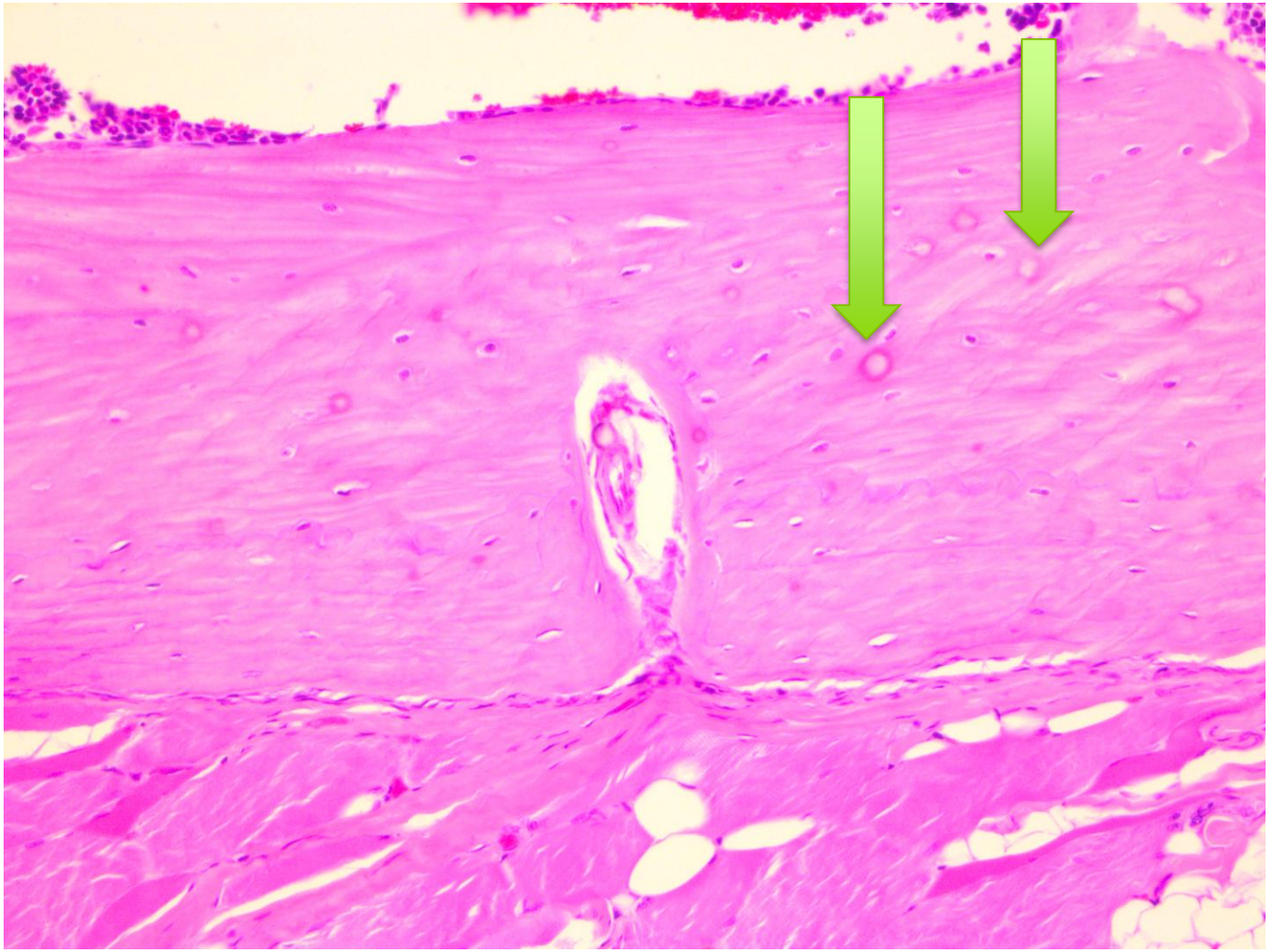
Rat, sternum, globules



Incidence table for bone (sternum)

+										
Group/sex	1M	2M	3M	4M	5M	1F	2F	3F	4F	5F
Level (ppm)	0	400	2000	4000	8000	0	400	2000	4000	8000
Fischer exact test, two tailed *p≤0.01**p≤0.05										
Globules, Bone										
Minimal	0	0	0	0	1	0	0	0	2	2
Slight	0	0	0	1	3	0	0	0	0	2
Total	0	0	0	1	4	0	0	0	2	4
Number of tissues examined	6	6	5	6	6	6	6	6	6	6

Differential diagnoses

- Fixation/processing artefact?
- Test item-related change?
- Any other options?

Vote now!

What other information would you need to decide?

- In-life findings
- Macroscopic findings
- Clinical chemistry
- Information about test item
- Findings in other species or other rat studies
- Investigative work

In-life data correlations – 13 week rat study

- Reduction in body weight, both sexes
- Increased plasma phosphorus, both sexes
- Increased urinary volume and protein in females, with decreased specific gravity
- Increased thyroid/parathyroid weights, both sexes

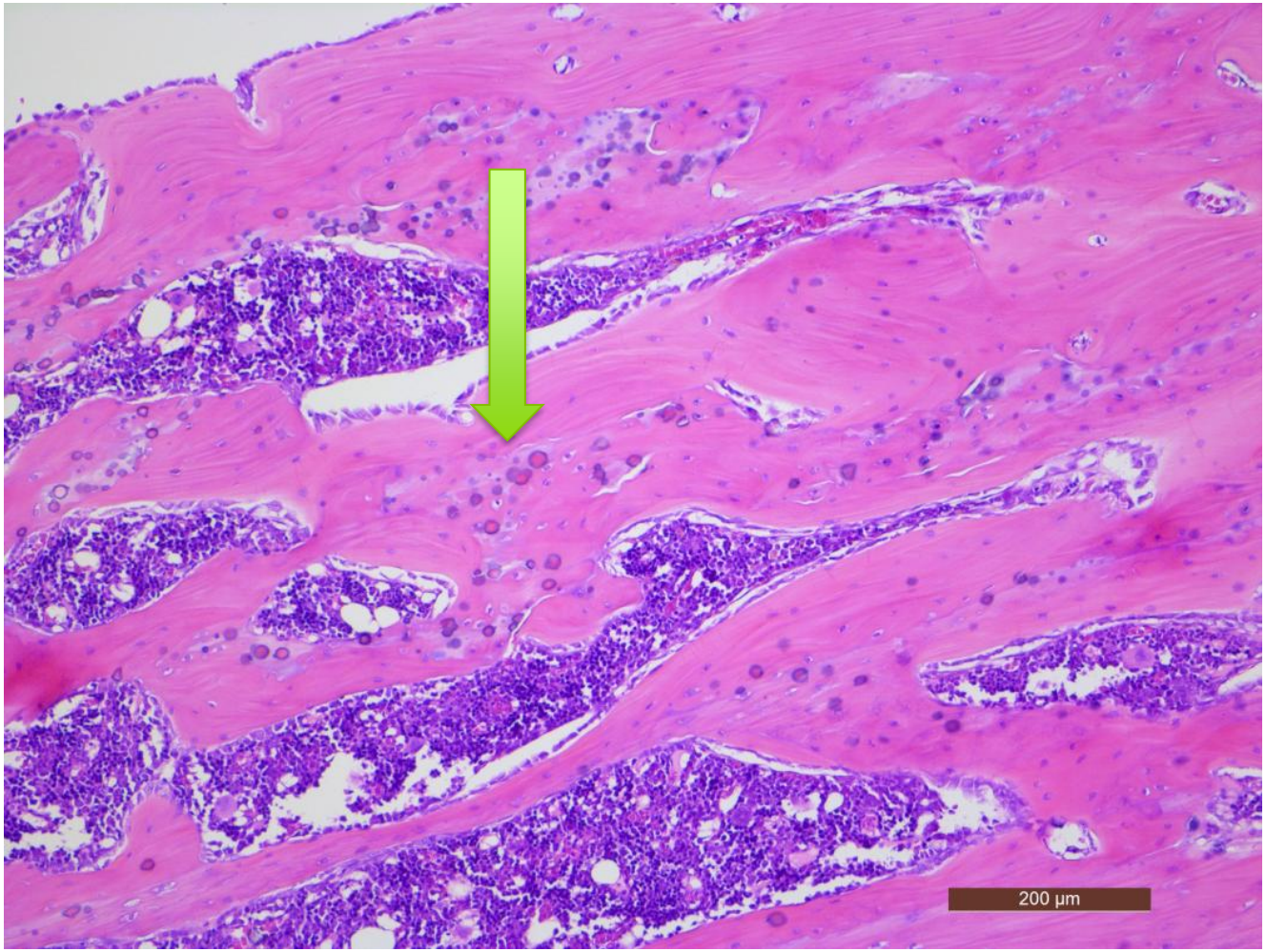
Macroscopic and microscopic pathology

- Bone abnormal colour (pallor)
- Teeth – abnormal colour (pallor) and/or broken

Histopathology

- Bone (sternum, femur) globules
- Teeth – basophilic pigment/globules in enamel and /or dentin, ameloblast dysplasia
- Kidneys – tubular degeneration/dilation, granular casts

Rat femur, 52 week study



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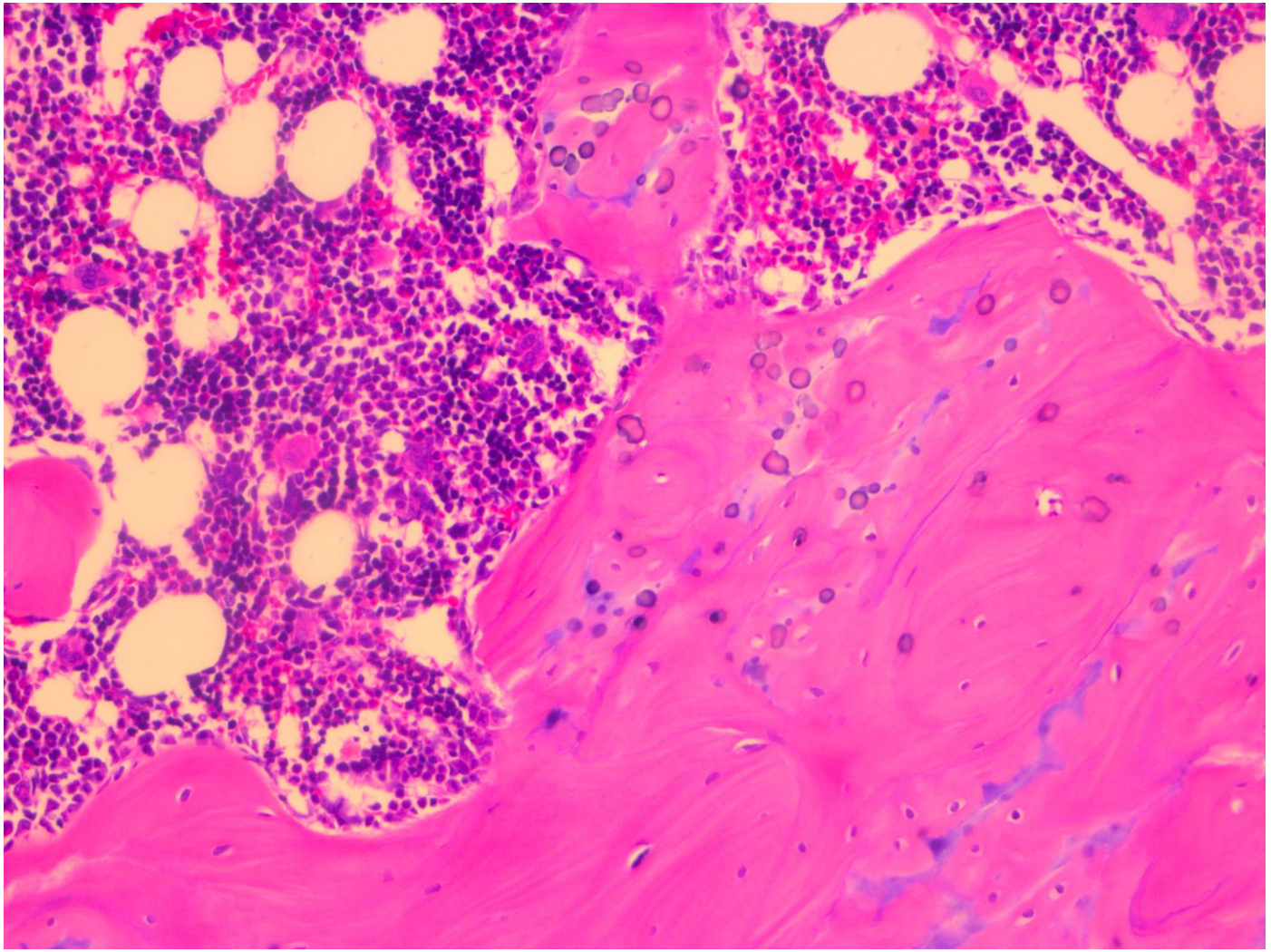
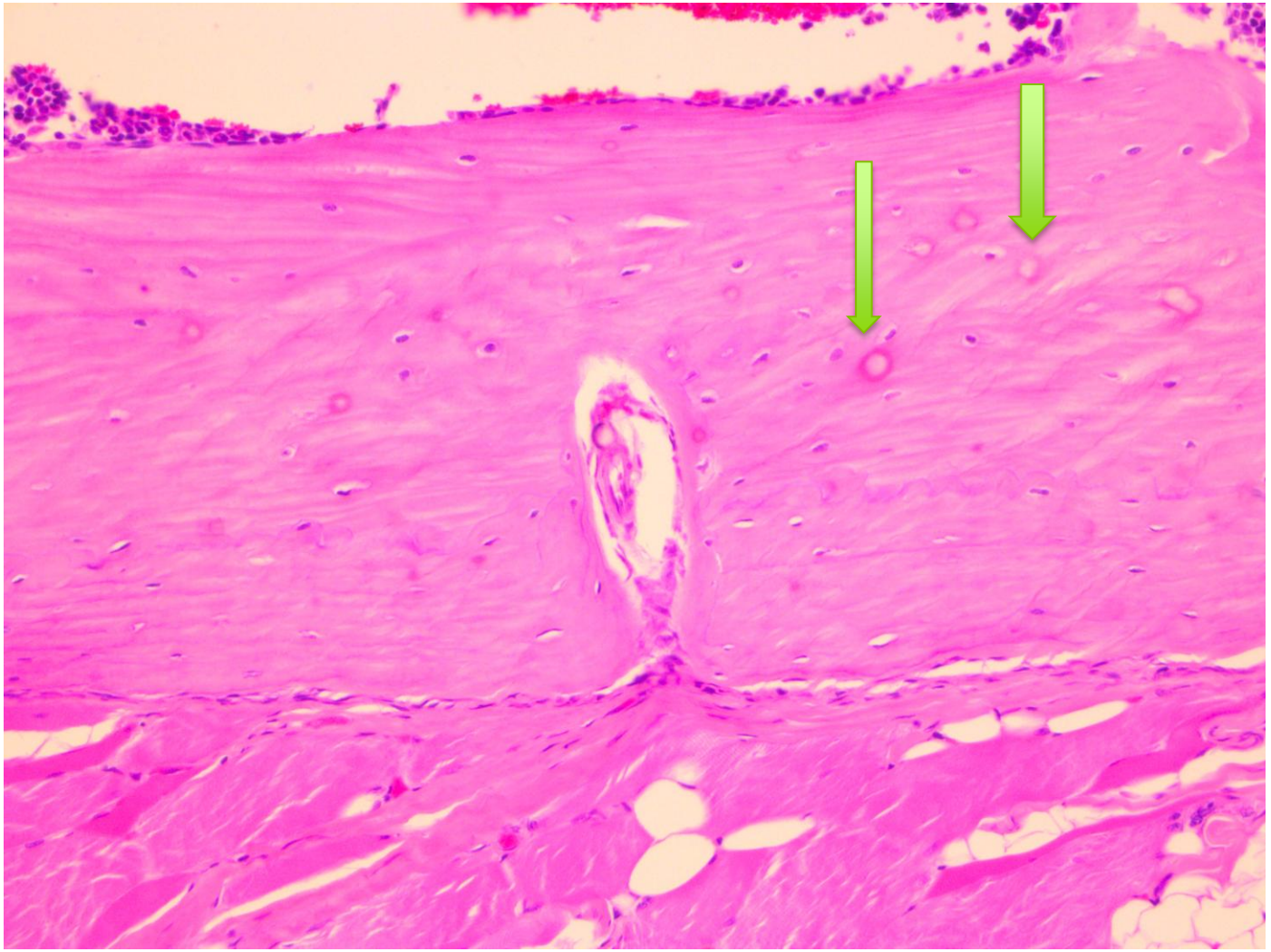
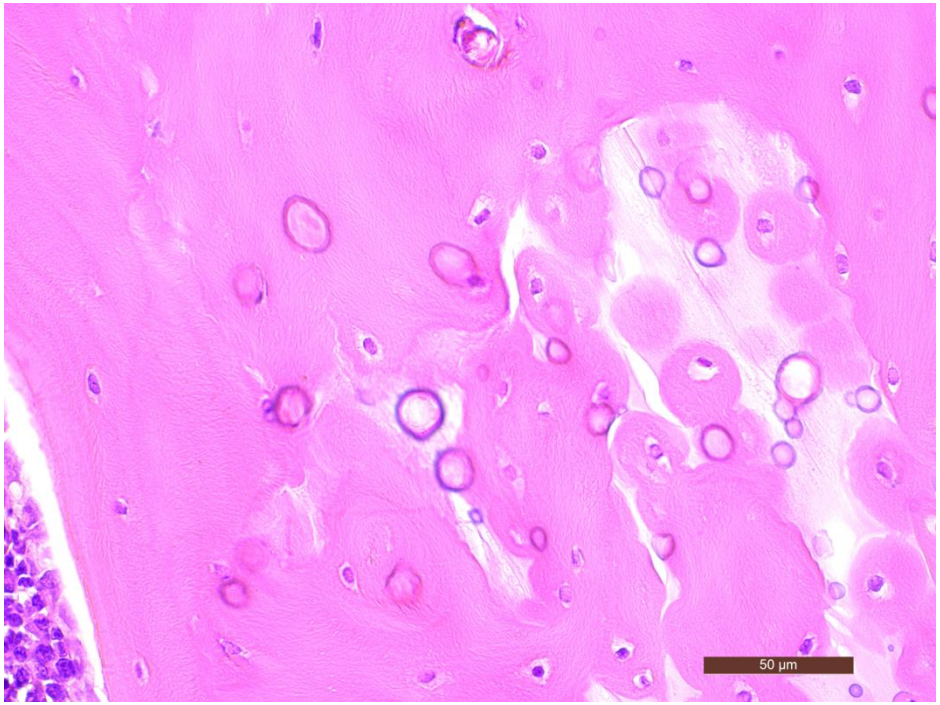


Rat, sternum, eosinophilic globules



Rat, femur, globules



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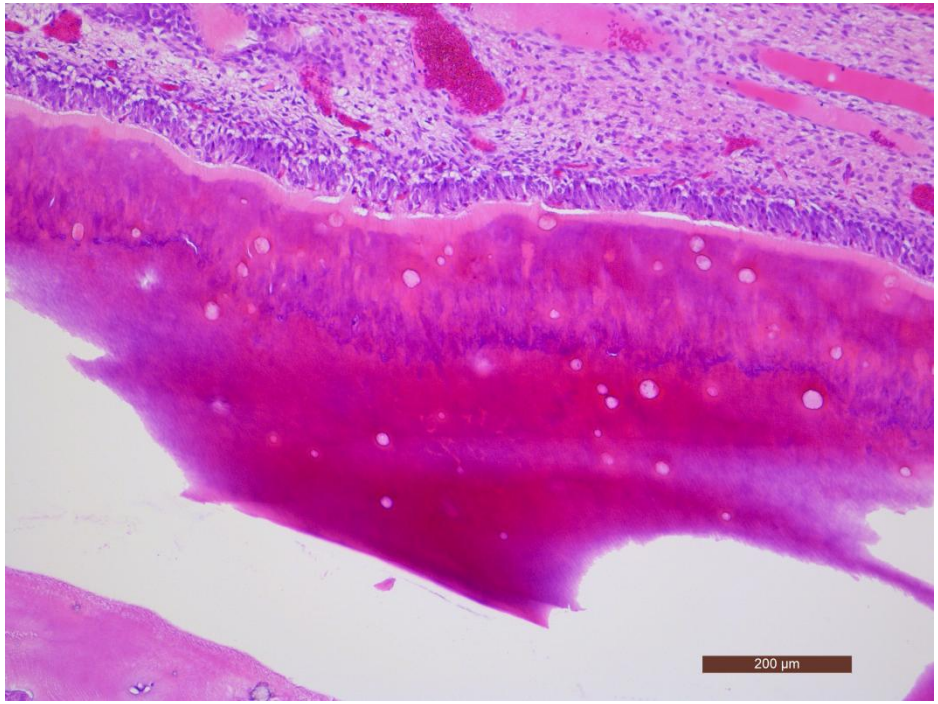

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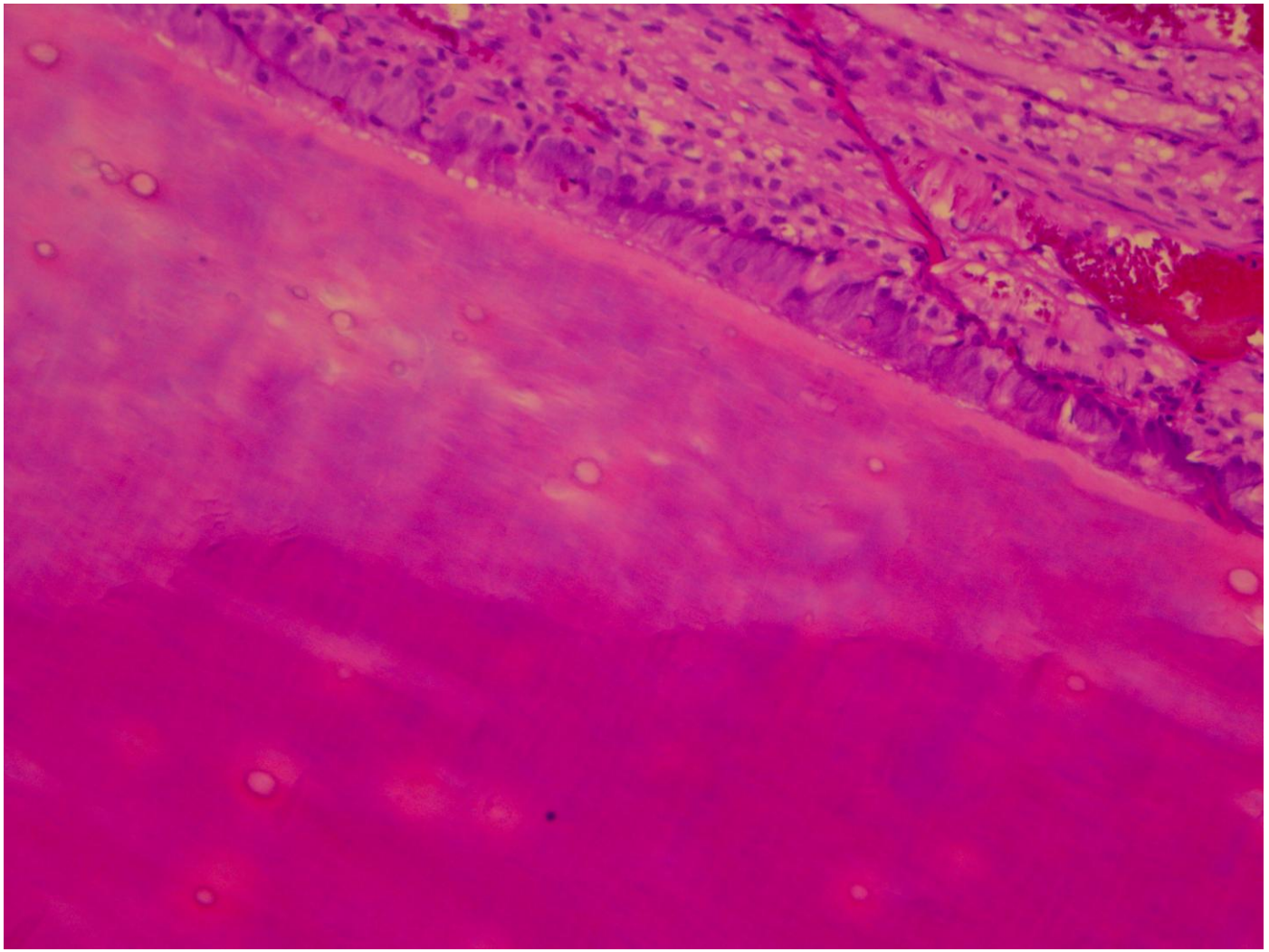
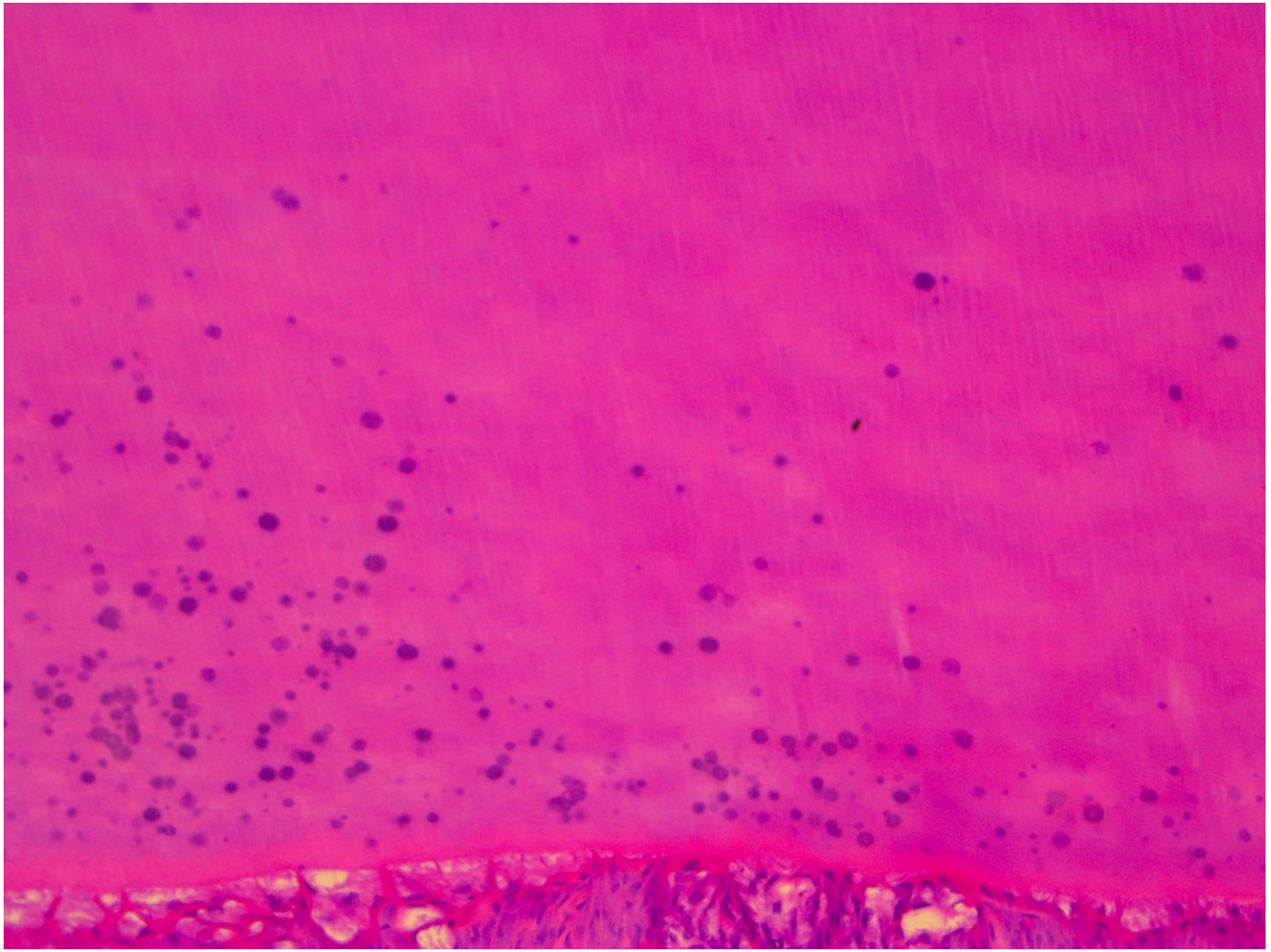
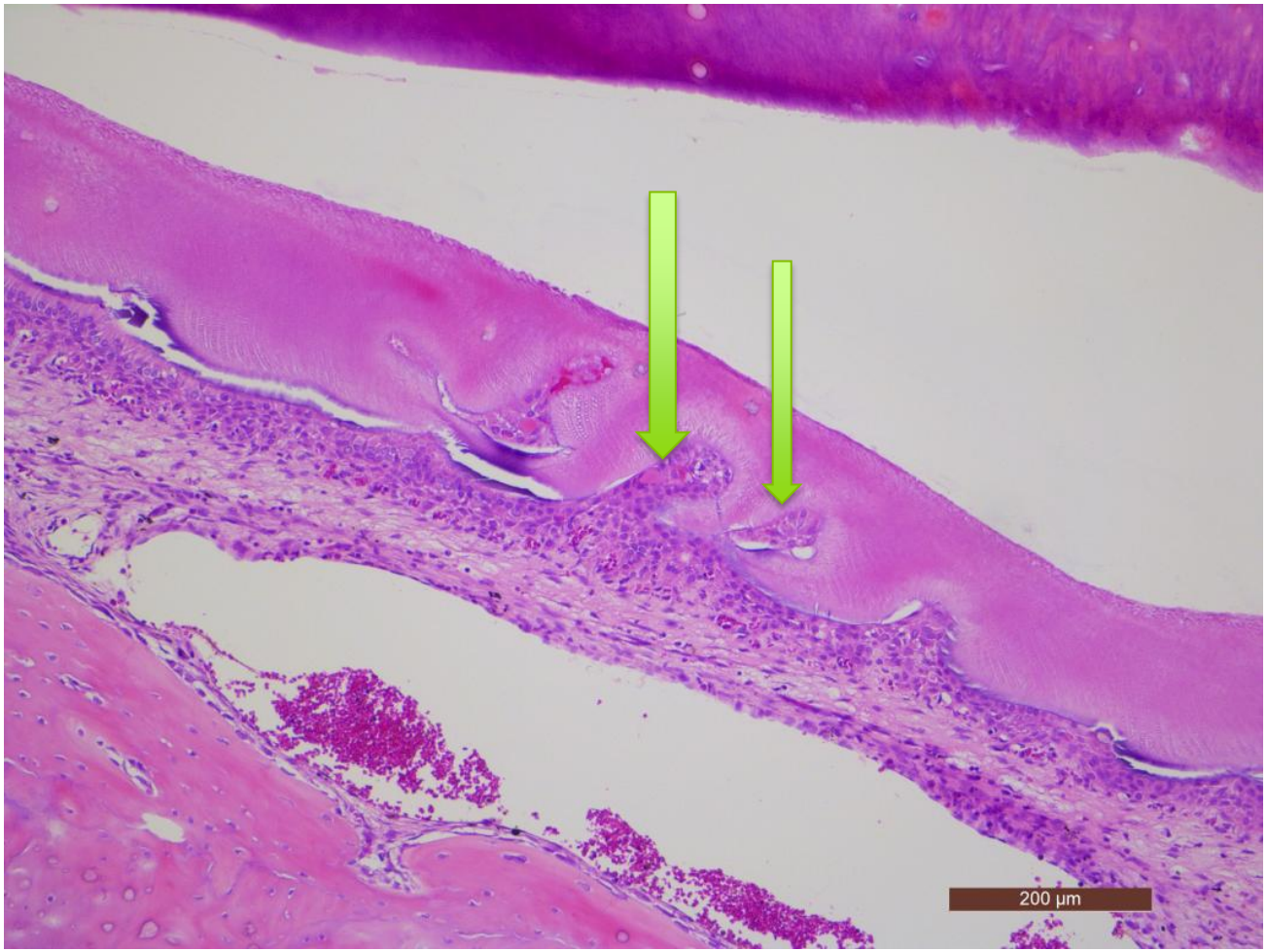
Rat, dentin, globules





Rat, ameloblast dysplasia



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Vote again

THANK YOU