NIHR | Great Ormond Street Hospital Biomedical Research Centre

Human fetal Micro CT – how to report

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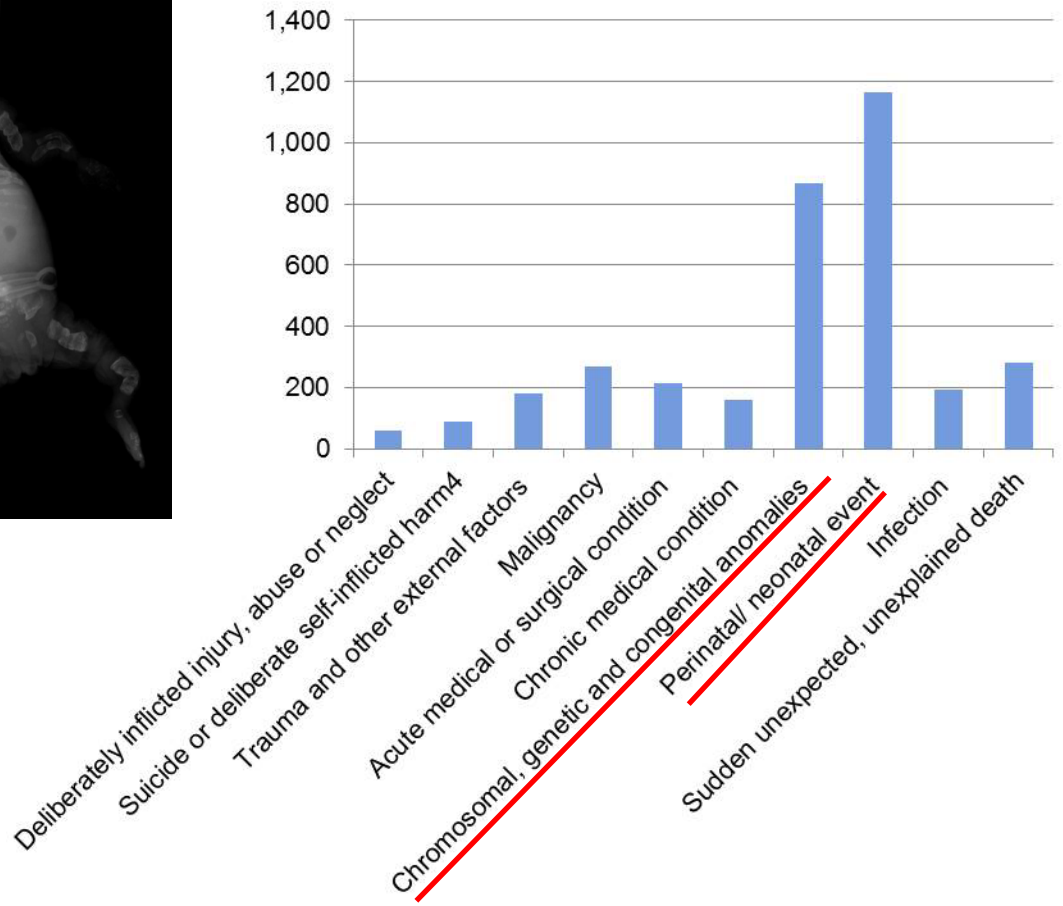
INSTITUTE OF CHILD HEALTH

Human fetal Micro CT

- How to report
- Assess the quality of imaging:
  - Preparation, image quality, artefact, maceration
- Template reporting
  - Systematic evaluation brain, body, limbs etc.
  - Imaging diagnosis
- Clinical context
  - Gestation, delivery, condition, other imaging (XR)
- Likely overall diagnosis

Common causes death?



How do I know what to report?

- How do I know what to expect on PM imaging ?

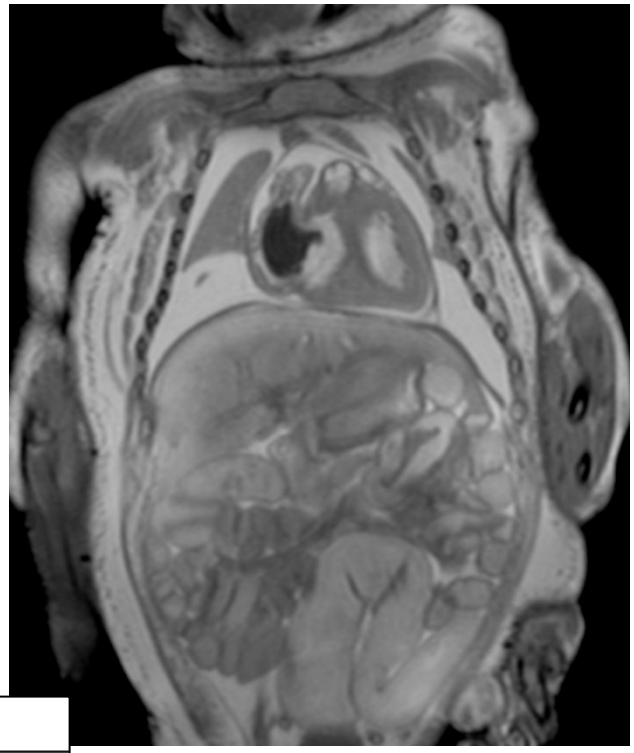
- Familiarity with post mortem change
- (time since death?)

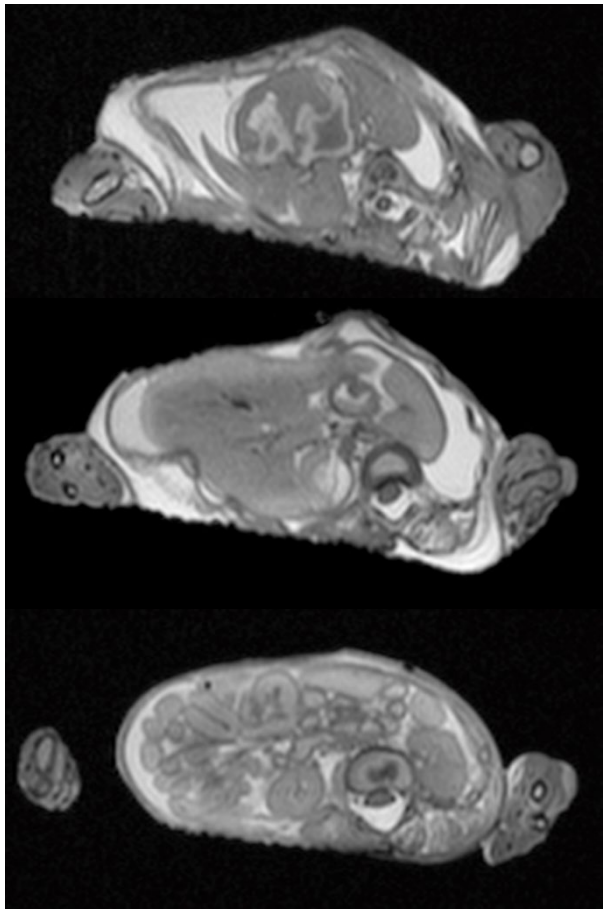
Understanding PM change

- Several artefacts

- Pericardial effn
- Pericardial air
- Pleural effusion
- Subcut oedema
- Ascites

- Slumping





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MINISYMPOSIUM

Normal perinatal and paediatric postmortem magnetic resonance imaging appearances

Owen J. Arthurs · Joy L. Barber · Andrew M. Taylor · Neil J. Sebire

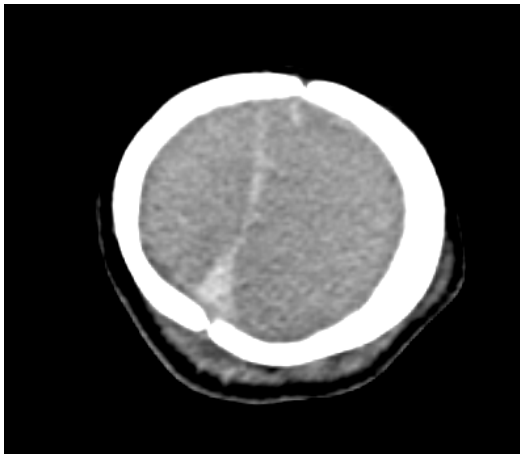
How do I know what to report?

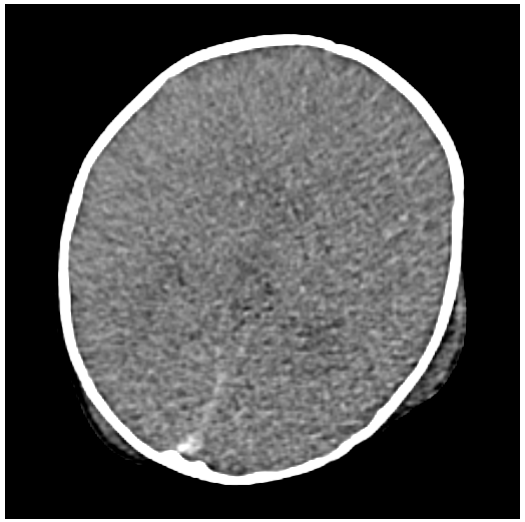
- How do I know what to expect ?

- Familiarity with post mortem change
- (time since death?)

- 4 Key Questions
- Is it physiological / normal ?
- Is it iatrogenic?
- Is it artefactual ?

- ... or pathological ?





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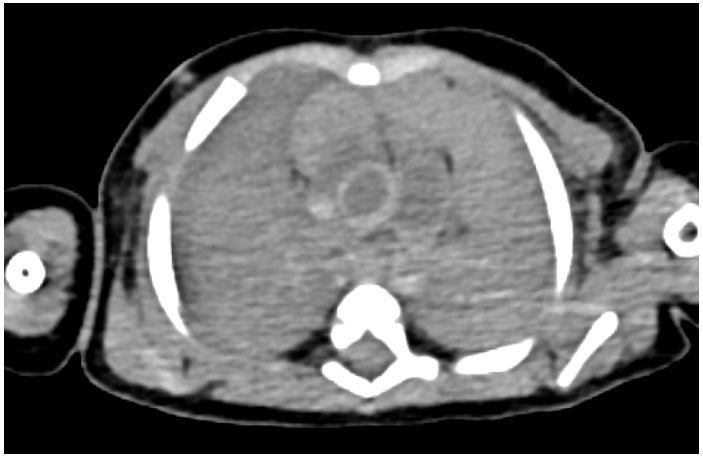

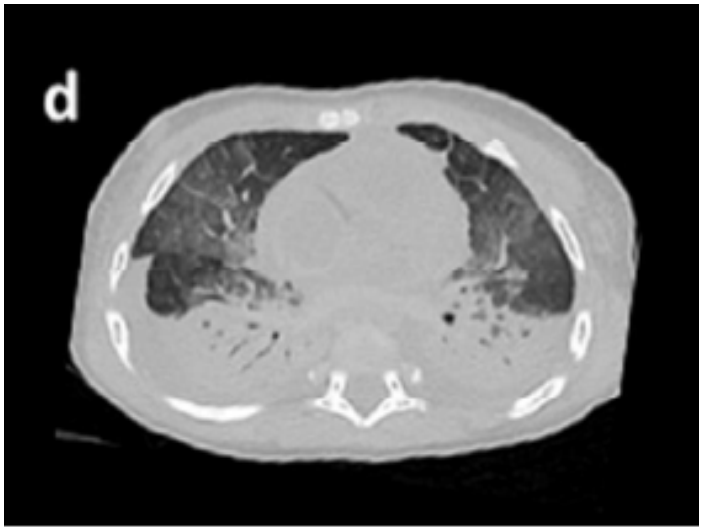

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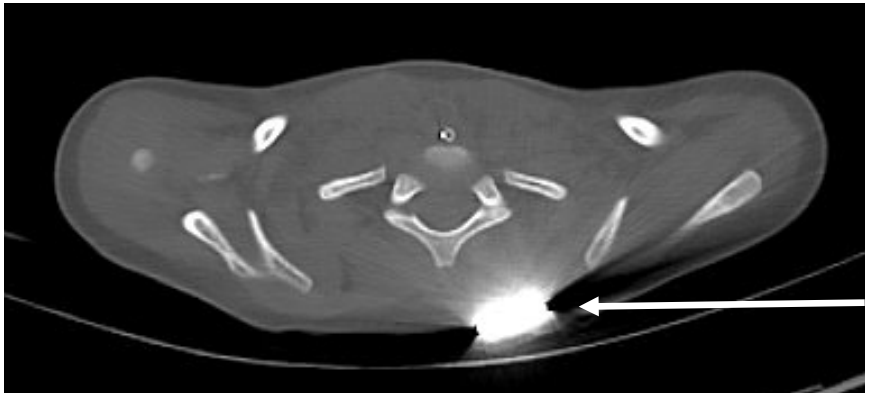
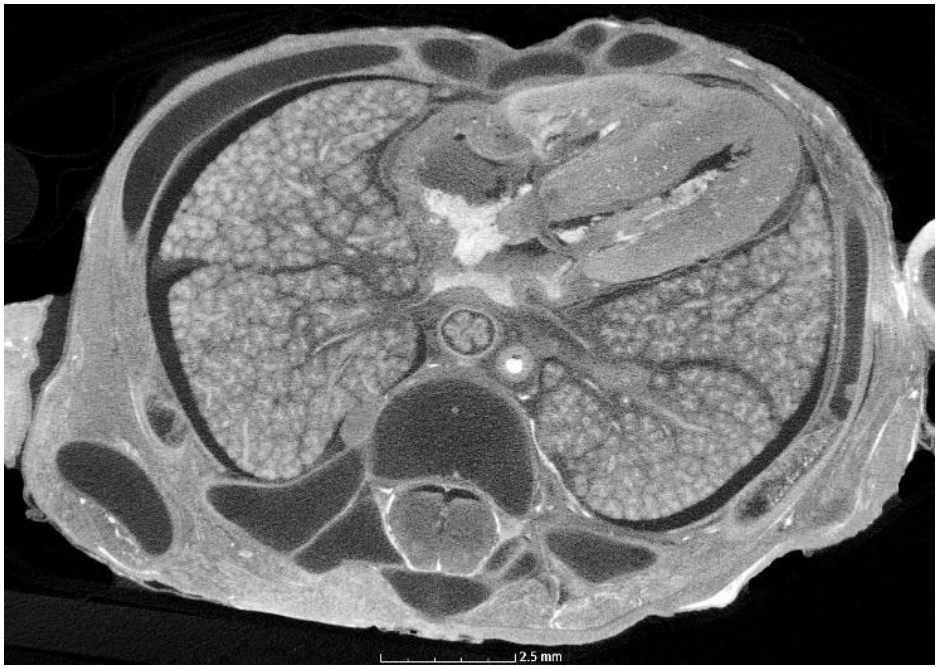
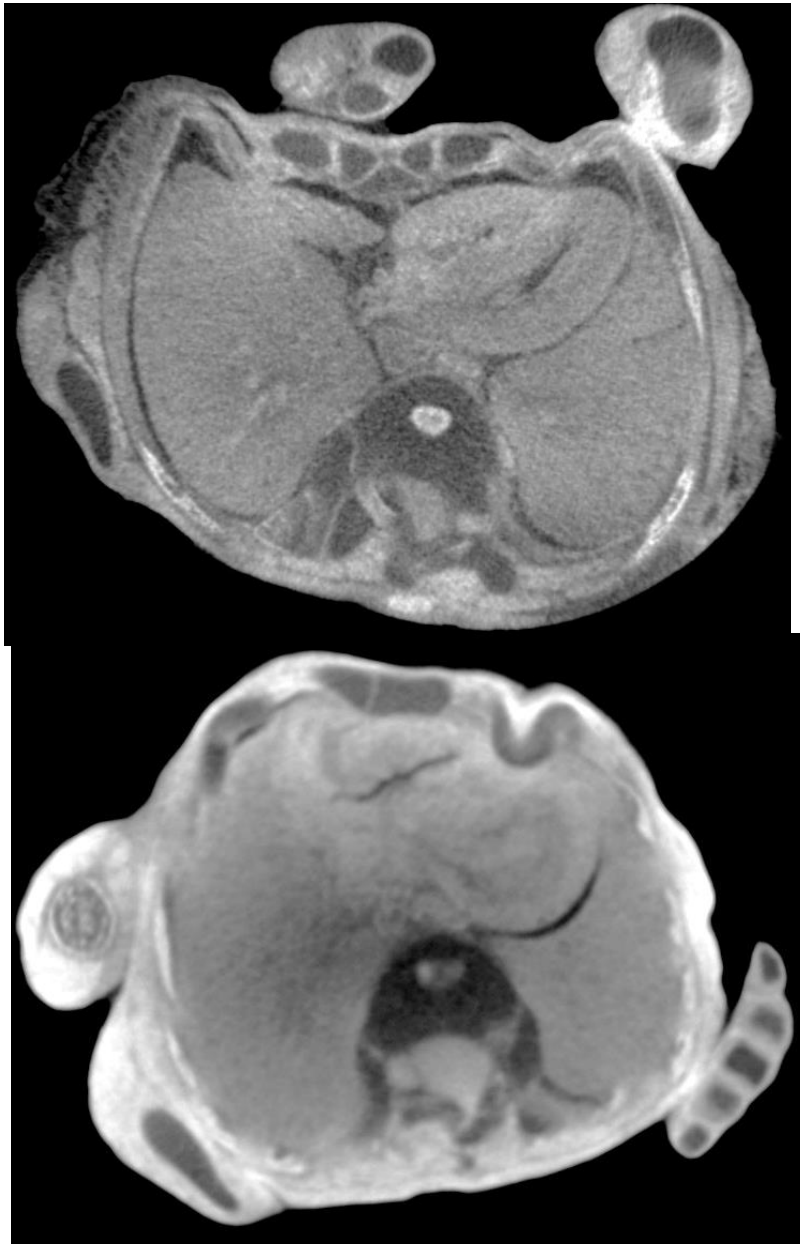


Micro CT

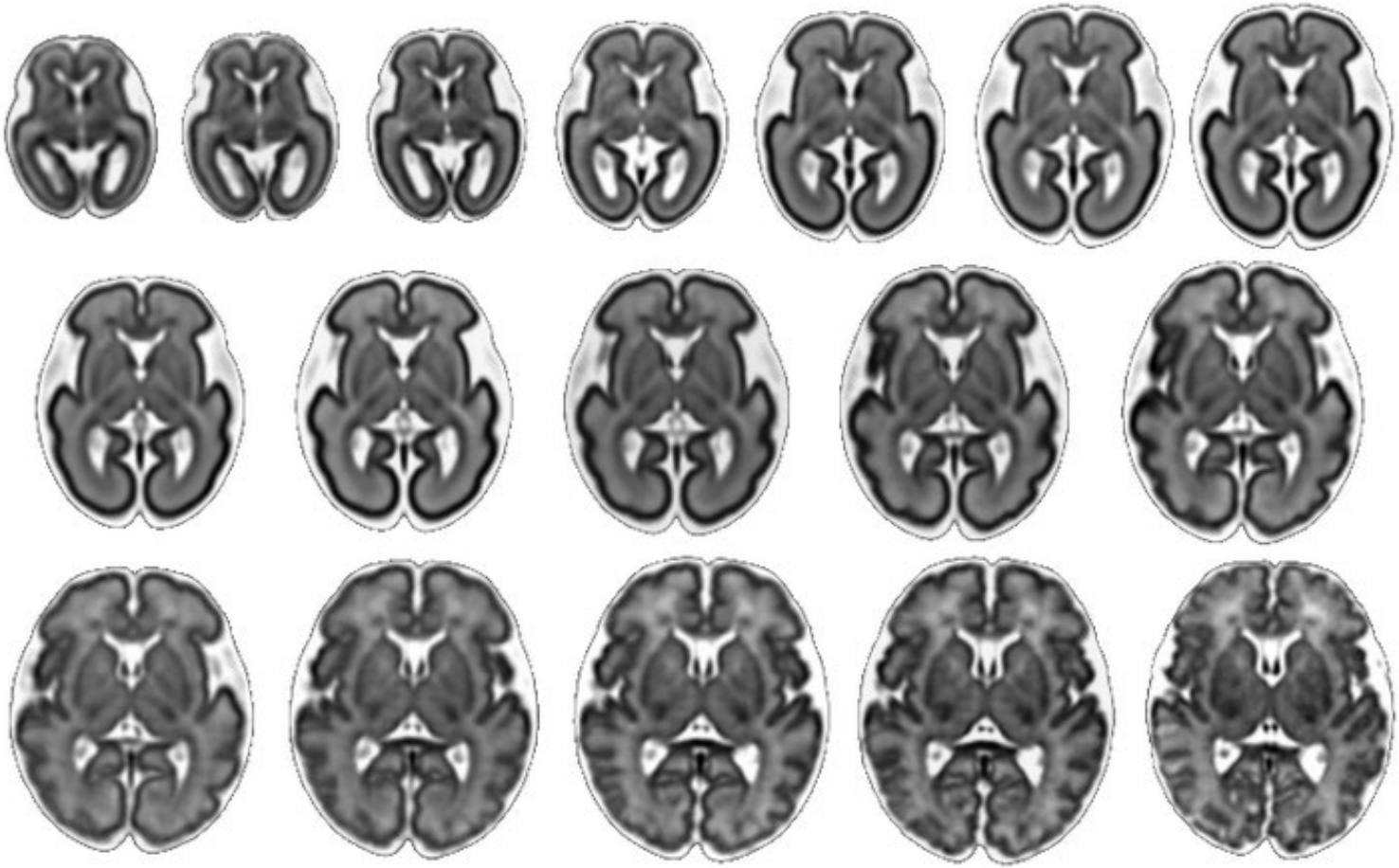
- "Physiological" - maceration

- Maceration





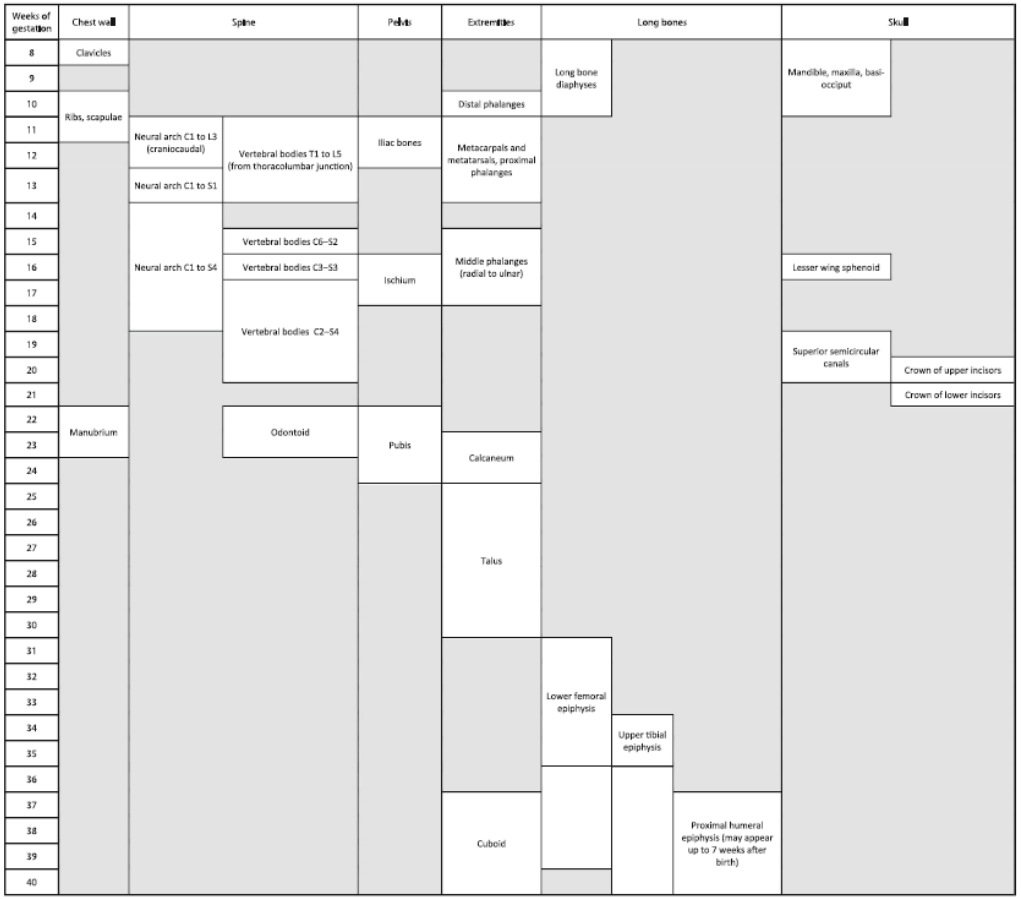
Normal development



Fetal Brain Atlas weeks 21 through 37

Normal development

- Bones



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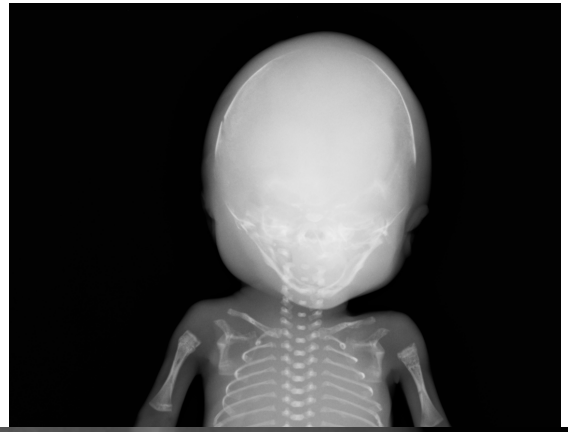
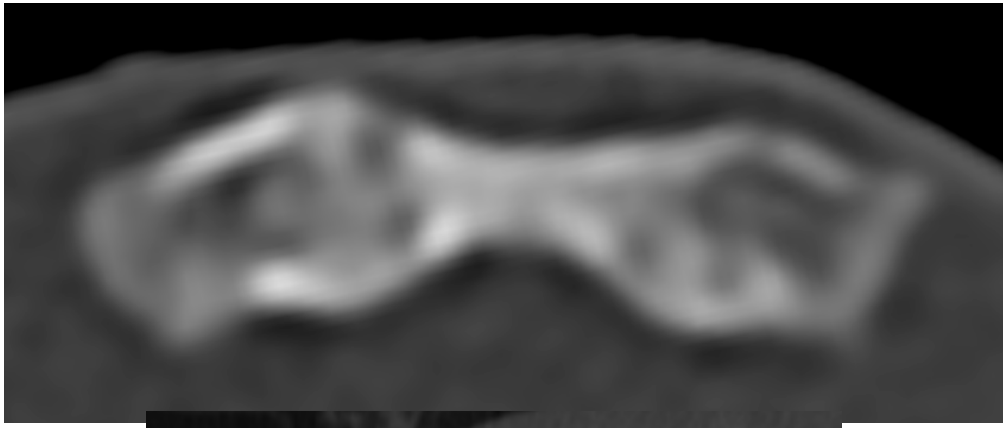
PICTORIAL ESSAY

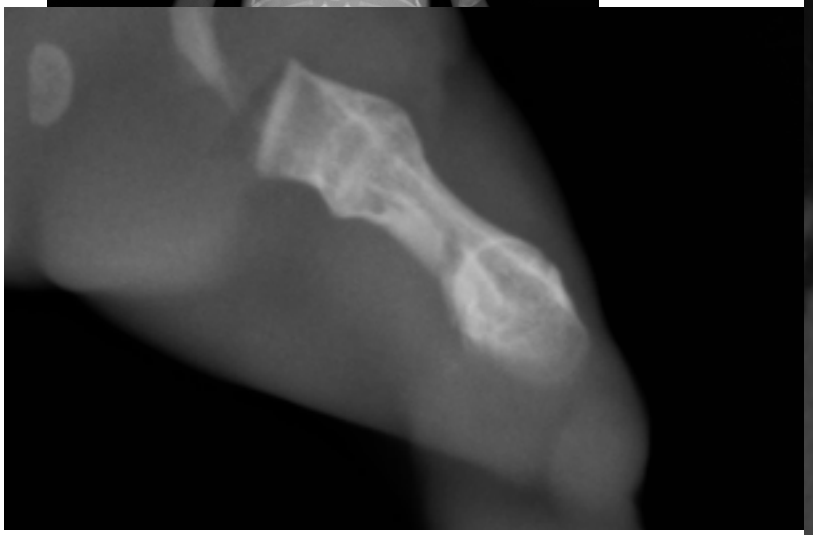
Foetal radiography for suspected skeletal dysplasia: technique, normal appearances, diagnostic approach

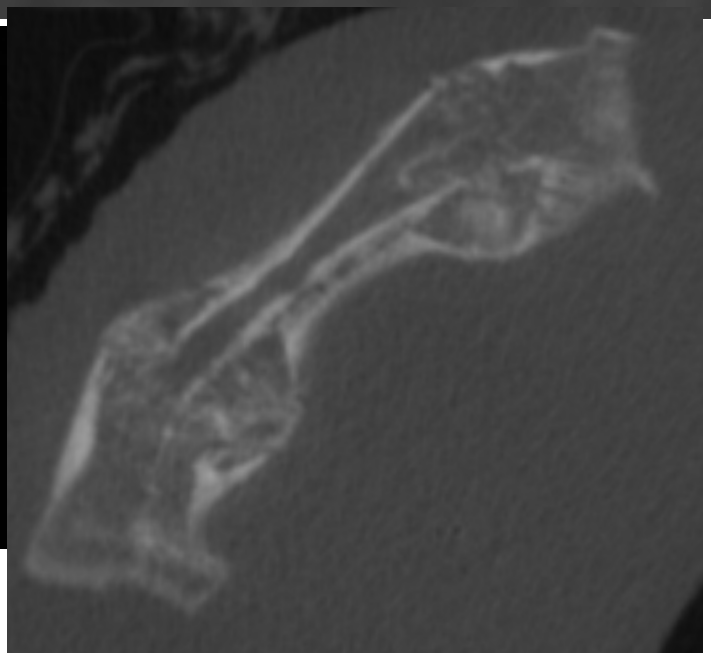
Alistair D. Calder · Amaka C. Offiah

Bone development

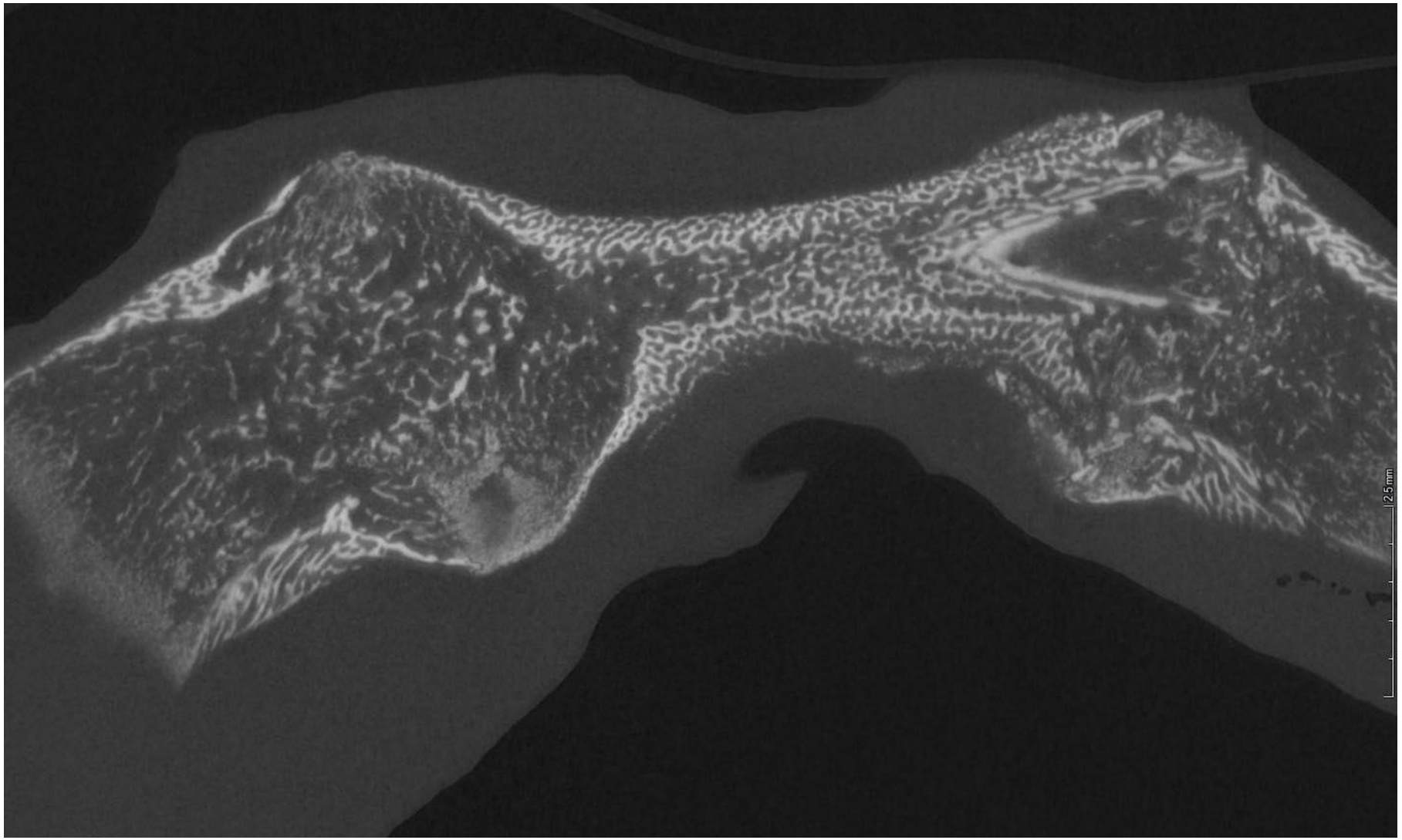




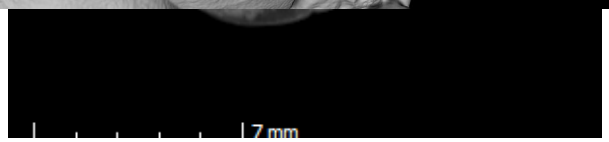


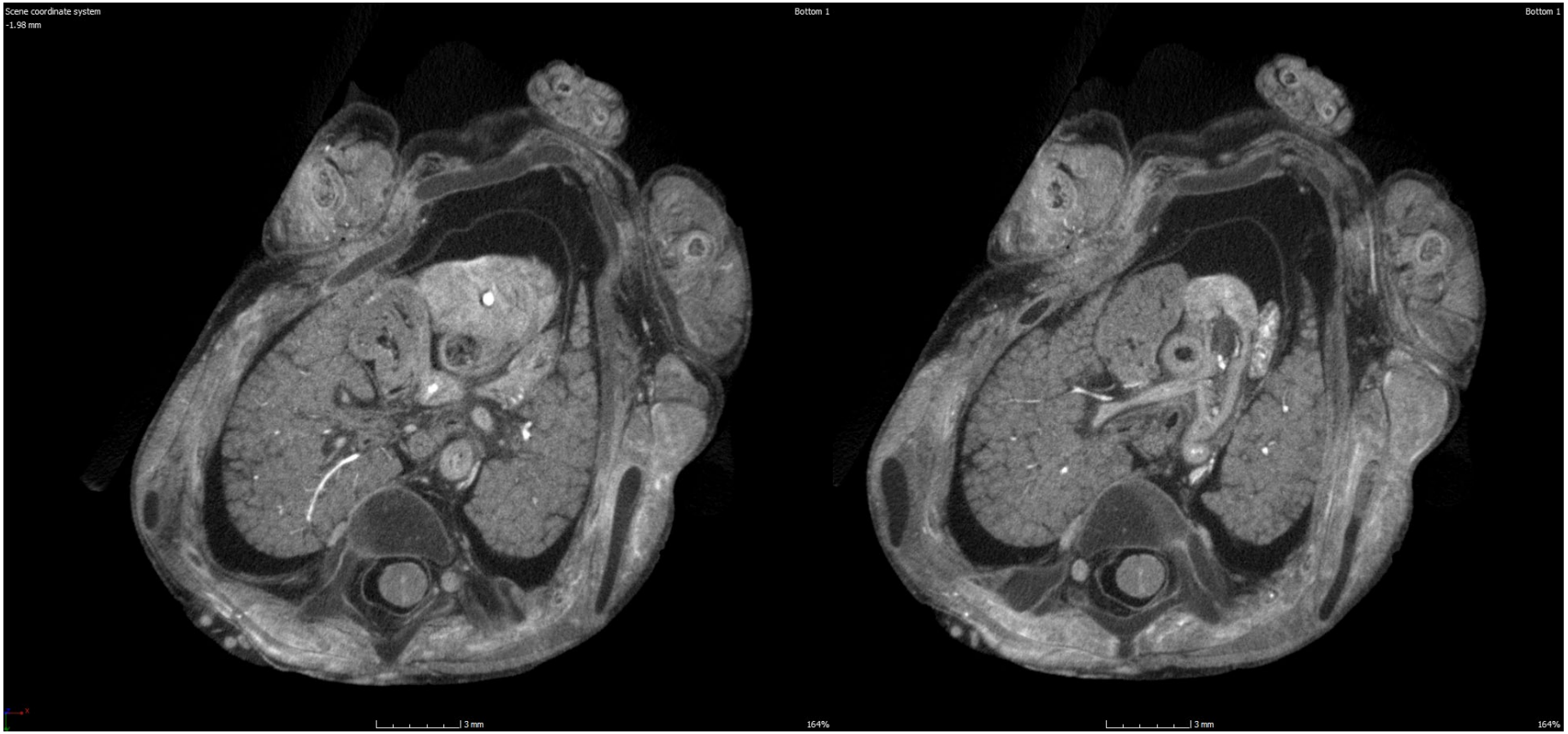


Bone development




7 mm

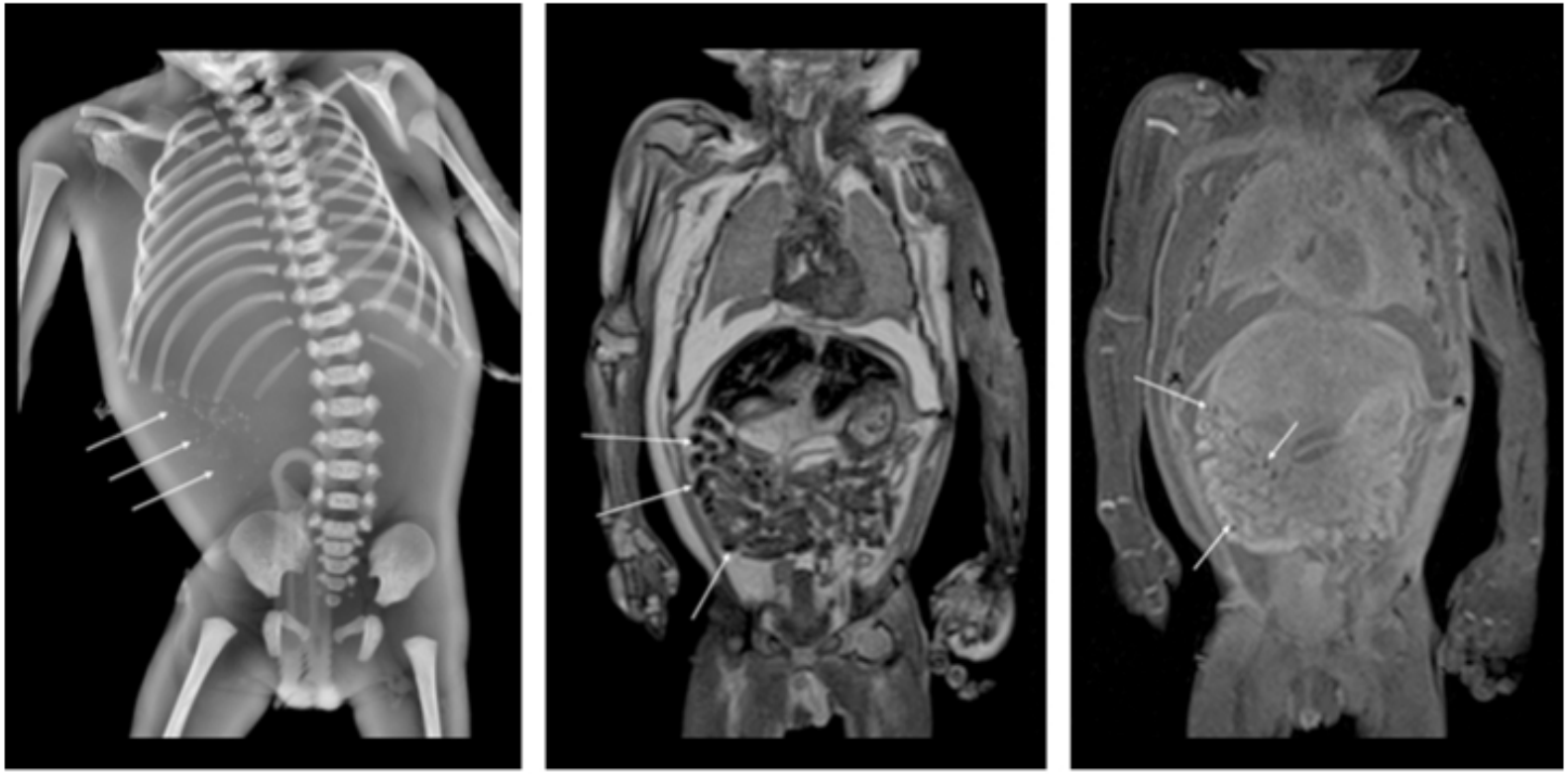

7 mm


Scene coordinate system
-1.98 mm
Bottom 1
3 mm
164%
Bottom 1
3 mm
164%


6.5 mm

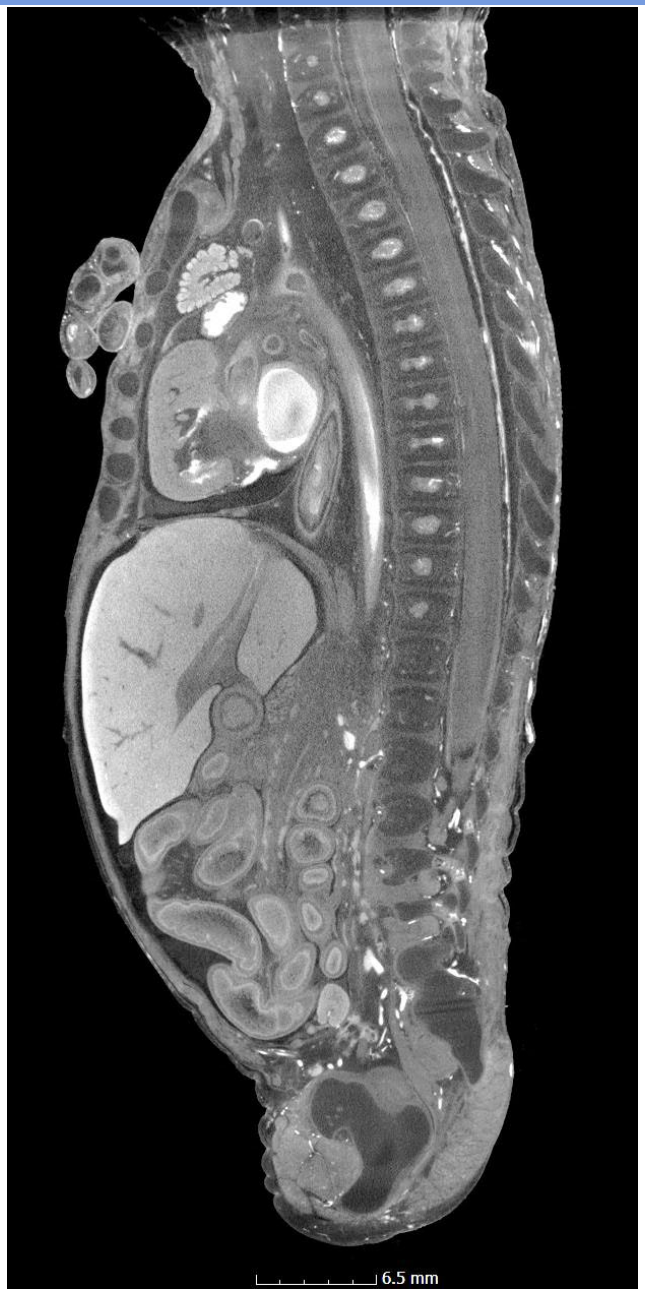

Scene coordinate system
-23.42 mm
Botto
3 mm
16

Incidental calcification



(a) (b) (c)


15 mm


6.5 mm

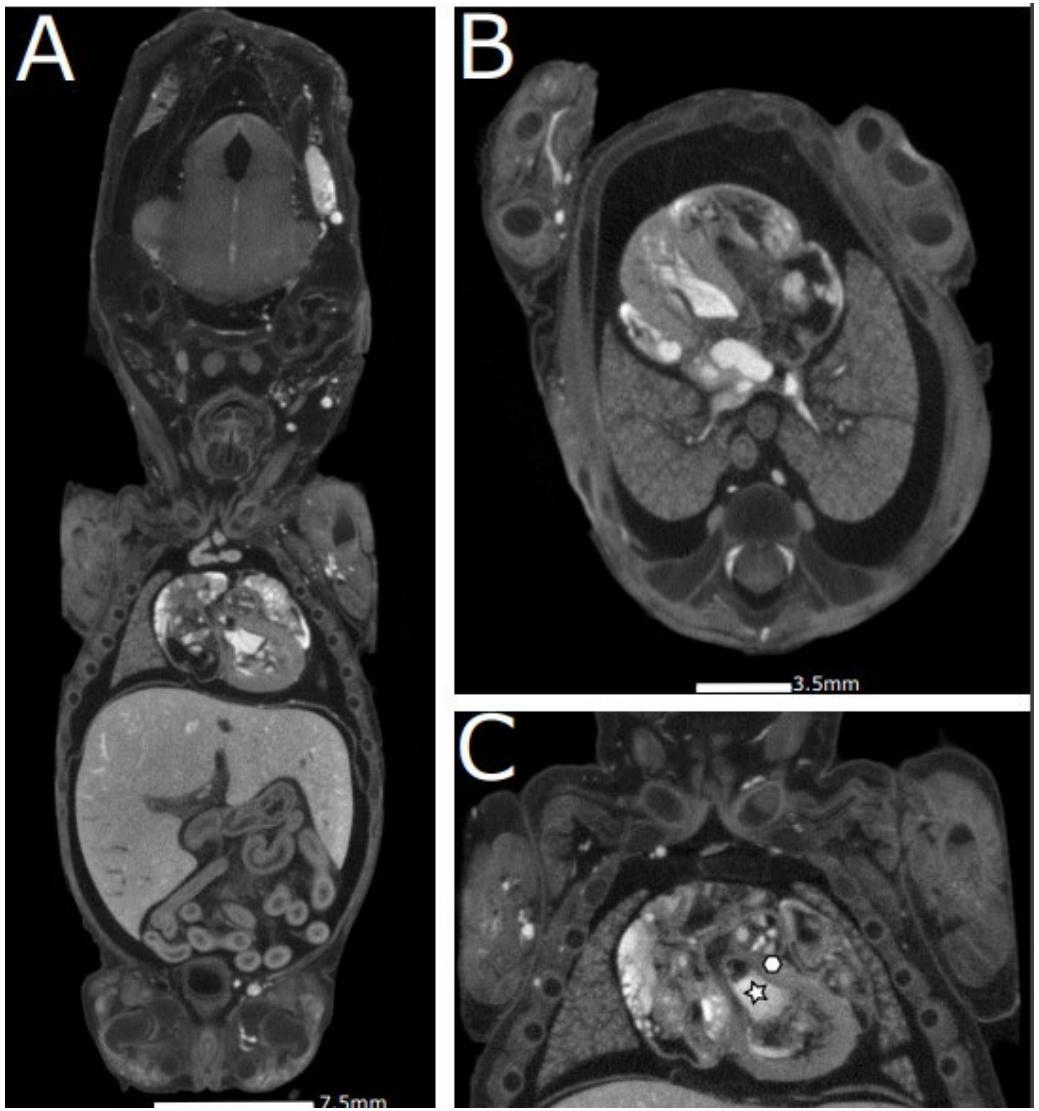
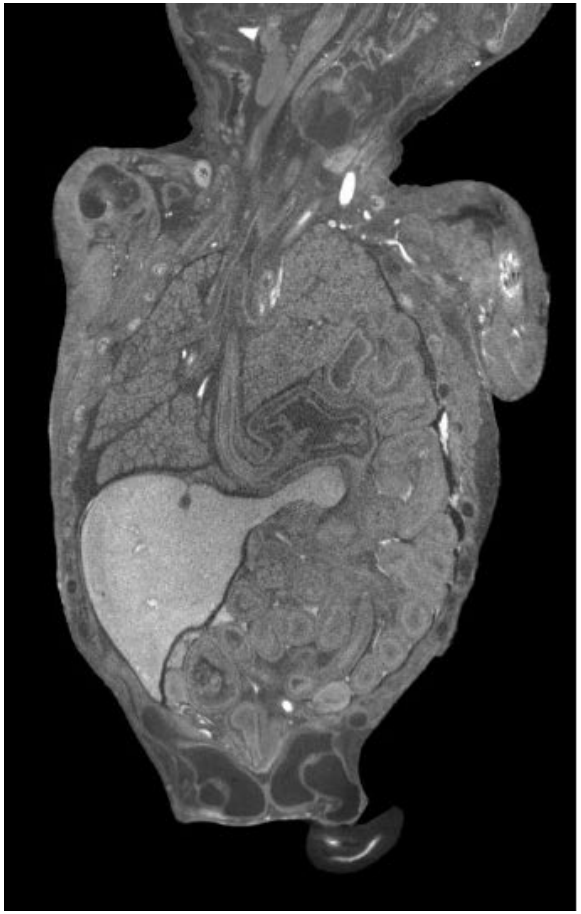


Figure 1. Micro CT of a phenotypically normal fetus (case 12) at 11 gestational weeks
(A) Axial (B) and Coronal (C) analysis of the heart reveals the aorta (star) and pulmonary trunk (hexagon).



b)

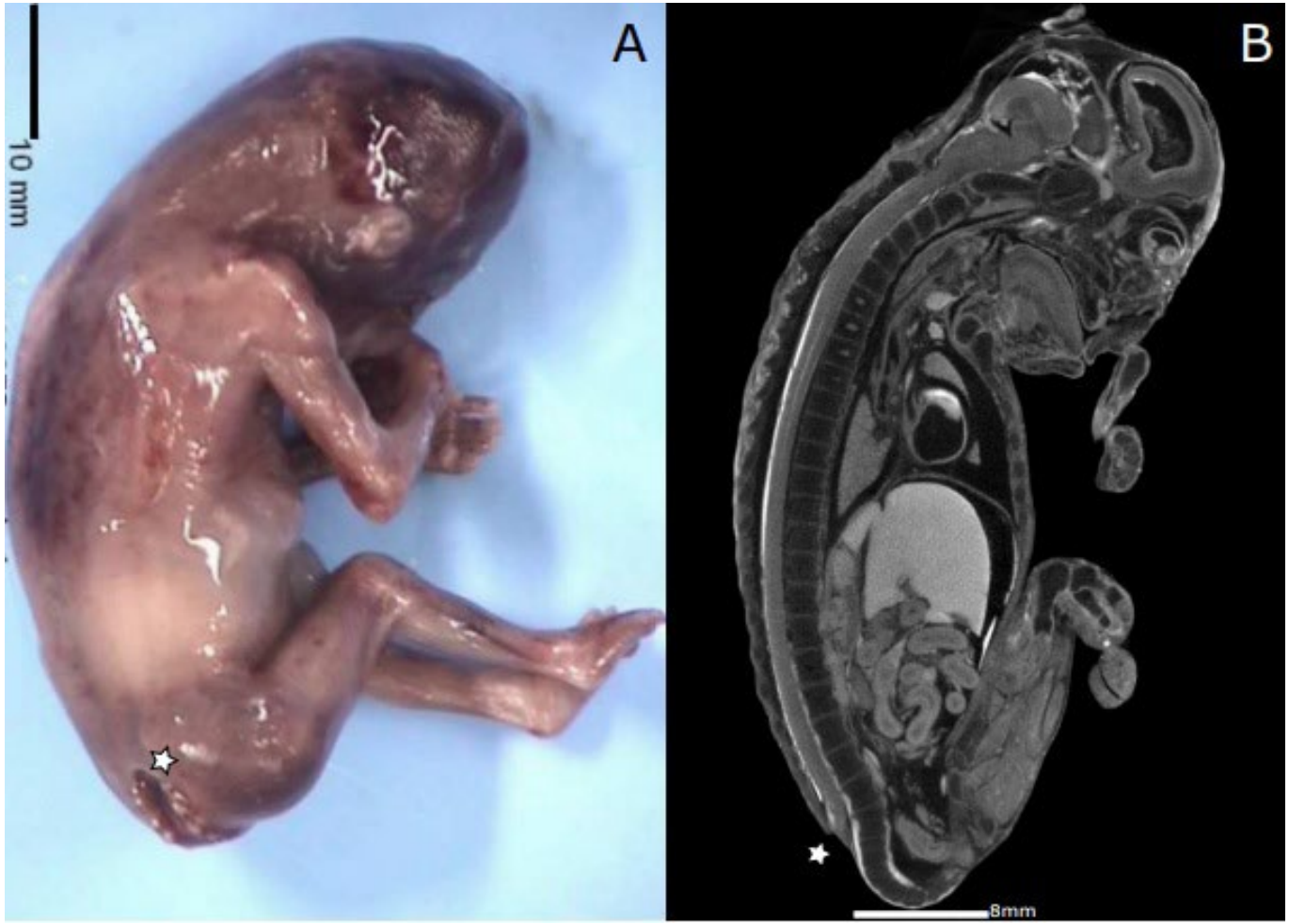


Figure 3. Micro CT examination of sacral NTD, external examination (star), initially overlooked on the micro CT data (B).

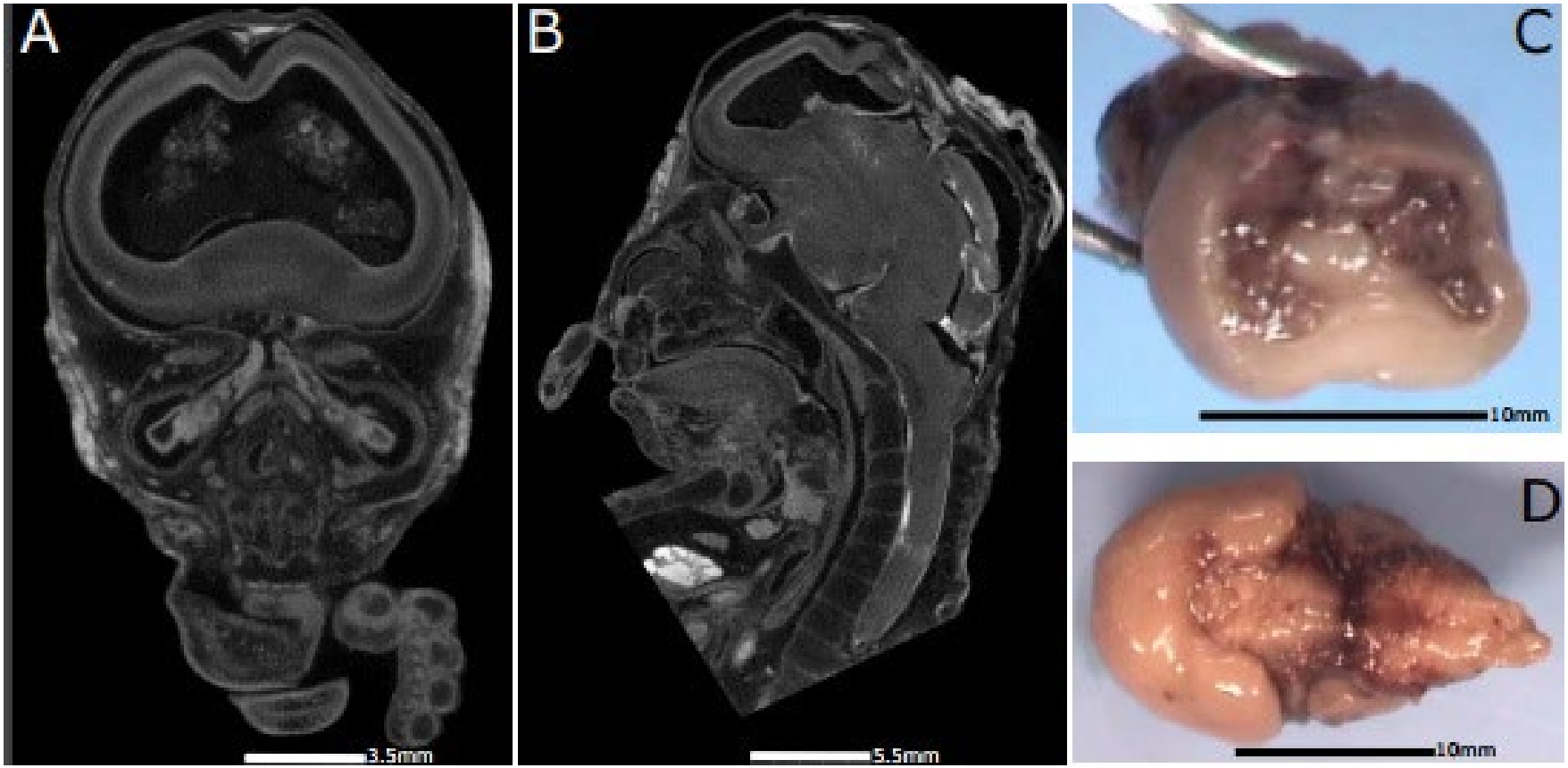


Figure 2. Micro CT of a 13 gestational week fetus with holoprosencephaly (case 4, A&B). Autopsy (C&D) confirmed the abnormal finding identified on micro CT.

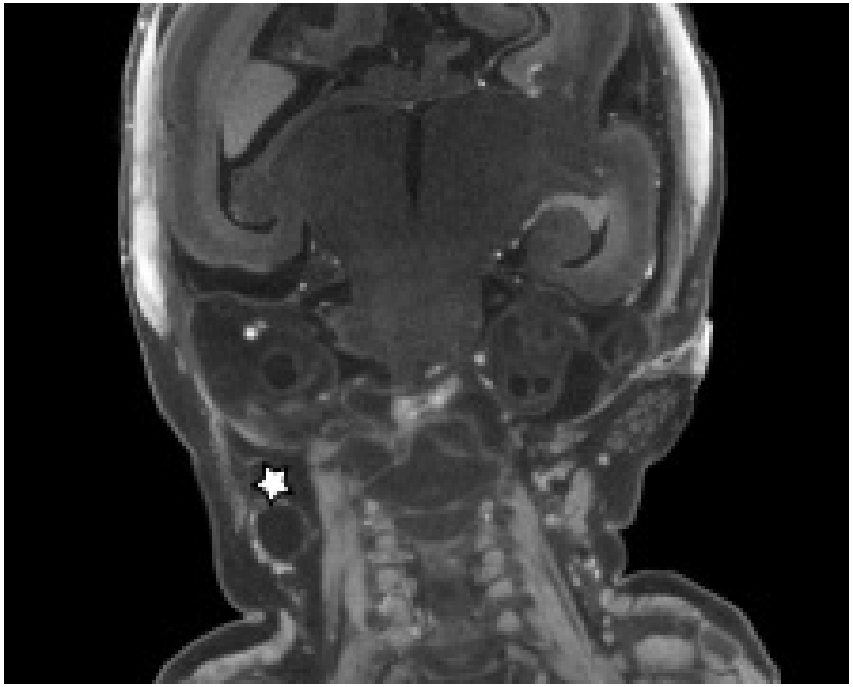


Figure 4. An apparent overcall from micro CT data in case 5 was a cystic neck lesion (star), which was overlooked at autopsy, as this region is not routinely dissected.

THANK YOU

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