

Physiological periosteal thickening in the long bones may mimic non-accidental injury

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A 12-week-old infant referred for historical child protection concerns had a normal physical examination, ophthalmology assessment and computed tomography scan of the head. A skeletal survey, repeated after 2 weeks, revealed no evidence of fracture. X-ray of the long bones showed smooth periosteal thickening of the diaphysis (**Figure 1**). Review by two radiologists with expertise in paediatric radiology agreed that this was a normal finding for the patient's age.



Figure 1. Areas of periosteal thickening (arrows) affecting long bones in lower limbs.

Physiological periostitis may be mistaken for non-accidental injury (de Silva et al, 2003). It is seen in the long bones of preterm and term babies aged 1–6 months. Mostly symmetrical in distribution, the findings are occasionally more prominent unilaterally (de Silva et al, 2003; Quigley and Stafrace, 2014). Clinicians should remember that normal anatomical variants, including physiological periosteal reaction, metaphyseal variants and nutrient foramina, may mimic non-accidental injury, and should therefore seek expert radiology review. Non-accidental injury should be considered, even with normal radiological findings, if there is corroborative evidence.

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How to cite this article:

Paul SP, Heaton PA. Physiological periosteal thickening in the long bones may mimic non-accidental injury. *Br J Hosp Med*. 2021. <https://doi.org/10.12968/hmed.2021.0234>