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# Humeral nutrient artery may mimic non-accidental injury

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A 9-month-old girl attended the emergency department having being unable to use her right arm, which was thought to be painful. She had recently started crawling. On examination there was no evident pain, swelling or discolouration of the arm which was now moving normally. Child–parent interaction was appropriate. X-ray was suspicious of a mid-shaft partial fracture of the right humerus (Figure 1). Review by a radiologist with expertise in paediatric radiology noted the position and oblique angle away from the growth plate of the apparent defect in the humerus cortex, typical of a nutrient vessel rather than a fracture. The orthopaedics team agreed and advised no active intervention. After discussion with the local child safeguarding team, no concerns were identified and the infant was discharged.


**Figure 1.** X-ray showing nutrient artery (arrow).

Clinicians should remain aware of normal anatomical variants on X-ray which can resemble abnormalities associated with non-accidental injury; these include physiological periosteal reactions, metaphyseal variants and nutrient foramina (Quigley and Stafrace, 2014). Nutrient arteries enter long bones including the humerus and femur at an oblique angle through the nutrient foramen, and are directed away from the growing end of the bone; as they pass through the long bone shaft cortex they can be mistaken for oblique fractures (Quigley and Stafrace, 2014). In such cases clear documentation of findings and discussions should be entered in the clinical notes (National Institute for Health and Care Excellence, 2009). Where there remain suspicions, appropriate child protection procedures and investigations should be instigated

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