

IMAGES IN PAEDIATRICS

Osteomyelitis detected by ^{18}F -FDG PET-CTOsteomielitis detectada por ^{18}F -FDG PET-TC

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We present the case of a male infant aged 16 days with an unremarkable maternal obstetric history, born at 38 + 6 weeks of gestation. He was admitted on account of 2 febrile temperature peaks of 38 °C and pain on mobilization of the right shoulder. After an ultrasound examination detected arthritis in the right shoulder, culture of surgical specimens confirmed the presence of *Staphylococcus aureus*.

Given the worsening symptoms and with the aim of assessing for the potential presence of additional foci of infection, a whole-body positron-emission tomography (PET)/computed tomography (CT) scan was performed (Biograph™ mCT 20 scanner, Siemens Medical Systems; Knoxville, TN, USA), including the extremities (Fig. 1), with an administered activity of 36.8 MBq/0.99 mCi of ^{18}F -fluorodeoxyglucose (^{18}F -FDG) (paediatric dose recom-

mended by the European Association of Nuclear Medicine)¹ and low-dose CT-based attenuation correction (80 kVp, 5 mAs).

Acute osteomyelitis, a rare complication in newborn infants, poses a diagnostic and therapeutic challenge.³ The value of ^{18}F -FDG PET-CT in paediatric oncology is well established, although in children with fever or suspected infection, the evidence on the usefulness of ^{18}F -FDG PET-CT imaging is scarce, despite its proven usefulness in the diagnosis of infectious or inflammatory foci in adult patients.

If there is uncertainty in the suspicion of infection and/or inflammation of synovial joints, the use of ^{18}F -FDG PET-CT imaging could be contemplated in very select cases for the accurate assessment of septic arthritis with underlying acute osteomyelitis.

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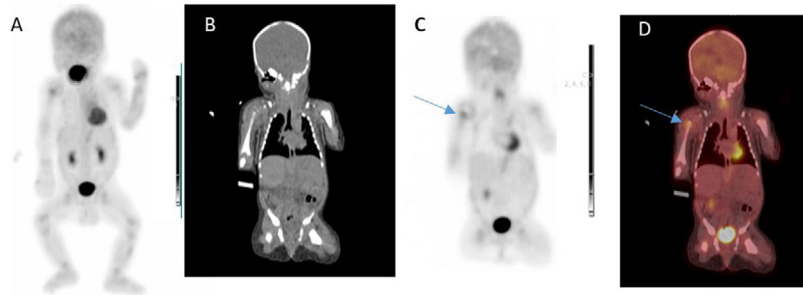


Figure 1 (A) Maximum intensity projection image. (B) Coronal CT image. (C) Coronal PET image. (D) Coronal PET/CT fusion image: ^{18}F -FDG imaging with high uptake in the proximal epiphysis of the right humerus (blue arrow) associated with active osteomyelitis² and moderate uptake in the articular surface of the right humeral head associated with the already established active articular illness.

References

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