The clinical course was that of any benign self-limiting condition.

The imaging and clinical findings are much more in keeping with insufficiency fracture of the femoral neck as a result of the generalized bone demineralization than they are of transient regional osteoporosis.

The criteria applied to case reports should also be applied to letters describing cases and should ensure that what is described is truly the condition stated. This is clearly not so in this letter. A case report or a letter which is primarily Imaging in content should have a radiologist as one of its authors.

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Comment on the Letter ‘Imaging in Transient Regional Osteoporosis’

Sir—We read with interest the recent letter on ‘Imaging in transient regional osteoporosis’ by Stevens et al. [1]. Our belief is that this case is not likely to correspond to a transient osteoporosis of the hip on the basis of the imaging features and the presence of generalized reduction in bone mineral density (BMD) at dual X-ray absorptiometry. To our knowledge, epiphyseal involvement and, more precisely in this case, femoral head involvement, is a constant finding in transient regional osteoporosis [2, 3] (Fig. 1). In the case reported by Stevens et al., imaging findings, namely increased uptake on bone scintigraphy and signal-intensity changes at magnetic resonance imaging, are strictly limited to the upper femoral shaft and femoral neck, while the femoral head has a normal appearance. We believe that this case more probably corresponds to an insufficiency fracture which better explains the focal changes restricted to the femoral neck and the region of the lesser trochanter seen at bone scintigraphy and magnetic resonance scanning. The focal spot of increased uptake with relatively well-delineated margins is also more consistent with a bone fracture or fissure since imaging changes in transient regional osteoporosis tend to have indistinct limits at bone scintigraphy and magnetic resonance scanning. Despite the young age of the patient and the absence of an individual or familial history of osteoporosis, the generalized reduction in BMD found in both femoral necks favours the hypothesis of a fracture line. The area of the femoral neck and lesser trochanter is a typical location of insufficiency fractures (Fig. 2). At magnetic resonance imaging, acute insufficiency fractures exhibit findings consistent with bone marrow oedema (low signal intensity on T1-weighted image and high signal intensity on T2-weighted image) [4], similar to those of transient regional osteoporosis. A computed tomography scan may have been useful in the case reported by Stevens et al. to demonstrate a fracture line.

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Fig. 1.—Typical MR appearance of a transient osteoporosis of the right hip. (a) T1-weighted (TR/TE 550/15) image showing low signal intensity with indistinct margin involving the right femoral head and neck. (b) Anterior view of a 99m technetium methylene diphosphonate bone scan showing large uptake of the femoral head and neck consistent with transient regional osteoporosis.
Fig. 2.—Typical appearance of an insufficiency fracture located to the area of the lesser trochanter. (a) Anterior view of a 99m technetium methylene diphosphonate bone scan showing focal uptake in the proximal right femur. (b) CT scan confirms the presence of a cortical fracture of the lesser trochanter (arrow).


Reply

We are grateful for the comments of Drs Butt and Coral [1], and of Drs Vuillemin-Bodaghi and Laredo [2]. Both sets of authors are musculoskeletal radiologists and both suggest that the diagnosis in the patient reported by us is insufficiency fracture rather than transient regional osteoporosis (TRO). Clearly, their arguments carry weight and the illustrations provided by Drs Vuillemin-Bodaghi and Laredo [2] are of particular interest. Their bone scintigraphy image is similar to that obtained in our patient, although the localization of increased uptake in their patient is more clearly cortical than in our case. It would be particularly interesting to compare magnetic resonance images of their insufficiency fracture case, if available, with those of our patient.

Drs Butt and Coral [1] point to the presence of a black line arising in the cortex at the base of the right lesser trochanter in our original illustration which they feel may represent a fracture. However, reference to adjacent cuts shows this to be in continuity with a curvilinear signal extending high into the femoral neck which mirrors a similar appearance in the asymptomatic left hip (Fig. 1). This was, therefore, felt not to be significant. They point to a number of other perceived deficiencies in our report. We have to concede that our failure to include a radiologist among the authors was one. A more important omission in the light of the comments of Drs Vuillemin-Bodaghi and Laredo is the failure to include the results of the CT scan of the hip obtained in this patient. CT scan images are illustrated in Fig. 2. The area of cortical discontinuity seen near the root of the lesser trochanter in the affected hip was not felt to be pathological, but likely to represent a vascular foramen. Views were obtained of the contralateral hip at the same level for comparison and show a similar appearance. Insufficiency fracture must enter the differential diagnosis, although this interpretation was rejected by the radiologists reporting the films at the time. The absence of any but very subtle changes consistent with local demineralization in a series of plain radiographs obtained in this patient over 5 months was felt to lend support to this view.

Drs Butt and Coral [1] are right to point out that the magnetic resonance appearances of TRO simply reflect replacement of bone marrow fat by oedema and that this is a non-specific response to bone marrow injury. We would agree that the MR appearances in TRO are helpful diagnostically only in the absence of evidence of damage to cortical or trabecular architecture. Our case illustrates that the presence or otherwise of such damage can occasionally be difficult to establish with certainty.

One of the purposes of our letter was to contrast the bone densitometry findings in this case with those reported in a patient with pregnancy-associated TRO [3], the MR and scintigraphy appearances of which are well illustrated in Dr Vuillemin-Bodaghi and
Fig. 1.—T1-weighted (TR/TE 640/23) (A) and corresponding T2-weighted (TR/TE 4000/95) (B) coronal MR images through the hips showing bone marrow oedema in the right proximal femur and similar curvilinear signal bilaterally (arrowed).

Fig. 2.—Transaxial CT section through the symptomatic proximal right (A) and left (B) femurs. The cortical discontinuity in the right femur is arrowed.

Dr Laredo’s letter [2]. Non-pregnancy-associated TRO may be a rather different entity with its propensity to affect areas other than the hip and its tendency to recur at distant sites (‘transient migratory osteoporosis’). Bone marrow oedema syndrome, a more descriptive term preferred by some authors [4], is perhaps more appropriate in such cases.

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Seronegative Polyarthritis: Side-effect of an Orthopaedic Metal Implant?

Sir—In July 1992, a 19-yr-old male was involved in a road traffic accident, resulting in a closed fracture of the left femur. This was fixed using an unreamed stainless-steel intramedullary nail. Eleven months later, he developed painful swollen knees, which got worse over a week with increasing pain and functional disability. The pain and swelling were worst at the end of the day. There had been no trauma or injury prior to the development of these symptoms.

The only clinical finding was bilateral, small effusions of both knees. Knee radiographs were normal. A diagnosis of acute synovitis was postulated, and treatment with sodium diclofenac and paracetamol relieved the symptoms. He developed another acute attack 3 weeks later which was much more severe and involved the proximal interphalangeal and the metacarpal phalangeal joints of both hands, as well as both knee joints. Investigations to exclude reactive arthropathies were all negative and rheumatoid factor was also negative. The only abnormal blood tests were an ESR