

The Role of SPECT in the evaluation of skeletal trauma

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Single photon emission computed tomography (SPECT) has, in the last decade, established a critical role in routine diagnosis. Skeletal scintigraphy exemplifies the impact in improving detection of lesions by delineation of their site and size. The advantage of minimizing the superimposed radioactivity from overlying and underlying structures is typified by the readiness with which avascular necrosis of the femoral head can be identified by removal of the surrounding hyperaemia which masks the classical photopaenia. However, the ability to achieve an accurate image at a plane at a prescribed depth is most characteristically shown by the study of a vertebra, a bone of irregular contour and subject to a variety of pathological disorders at different sites within it. The various focal abnormalities resulting from these can be localized exactly, readily distinguishing, for example, those in the body from those in the natural arch. In particular, the alterations resulting from trauma, such as pars interarticularis stress fracture, are readily seen. Consequently SPECT has an indispensable role in the investigation and management of low back pain. However, the ability of SPECT to delineate abnormal accumulation has provided a new approach to the evaluation of knee pain, especially when acute such as that resulting from athletic injury, since the identification of the presence or absence of focal abnormalities can be critical to patient management. The frequency of these various disorders in which SPECT is so useful explains why the procedure has become such a routine high-volume examination in so many departments.

Key words: single photon emission computed tomography (SPECT), skeletal scintigraphy, trauma