

► Use of Bone Scintigraphy in Geriatric Patients

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Introduction: Loss of or decrease in mobility due to musculoskeletal disorders is devastating particularly to the elderly population. Not only leading to a huge decrease in quality of life, but also to increased mortality and morbidity [1]. The more frequent presence of co-illnesses like osteoporosis, diabetes, peripheral vascular disease, cause a higher incidence of fractures and infection respectively [2]. Additionally the higher incidence of malignancies and bone metastases making correct diagnosis and treatment of joint and bone pain crucial. Potential loss of ability to communicate may hamper or delay finding the correct diagnosis and critically delay adequate treatment in this patient group.

The highly sensitive bone scintigraphy has been integrated in the clinical routine for decades and is available for every patient regardless of potential limitations like allergies, kidney function, other co-illnesses or implanted material (i.e. pacemaker etc.). A bone scintigraphy provides whole body information with respect to skeletal processes with an acceptable radiation exposure for both patient and executing staff. Use of 2- or 3-phase bone scintigraphy can provide even more information with minimal extra radiation exposure for staff and no extra radiation exposure to the patient. The introduction of SPECT/CT allowed imaging with higher specificity and even sensitivity, especially in oncological patients[3]. Still not every pathological or malignant process in the skeleton is detected by bone scintigraphy, thus making it important to know which patient groups profit from this image modality.

In the elderly population a variety of diseases can cause immobility and/or skeletal pain. The most common causes and subject to this presentation are:

Fractures, metastases and other bone malignancies, osteoarthritis and rheumatoid arthritis, osteomyelitis/septic joint, Paget's disease and loosening or infection of endo-prostheses [4 – 9]

Bone scintigraphy is rarely the first diagnostic step in the clinical handling, but can provide valuable and clinical relevant information. Main advantages are detecting multifocal processes, small/occult fractures, evaluation of floridity of inflammation/infection and early detection of metastatic disease and loosening of prostheses. Due to the high sensitivity, a normal bone scan can rule out many suspected conditions.

Conclusion: Many bone related diseases become more frequent in the elderly population. Many conditions can cause immobility, which again is associated with increased mortality and morbidity. Bone scintigraphy is a well documented and highly sensitive method for a number of these diseases. Metabolic bone imaging can provide additional indispensable diagnostic information in the growing group of elderly patients, which can have a huge impact on the clinical handling, thus proving a low-cost alternative with acceptable radiation exposure for both patient and staff.

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