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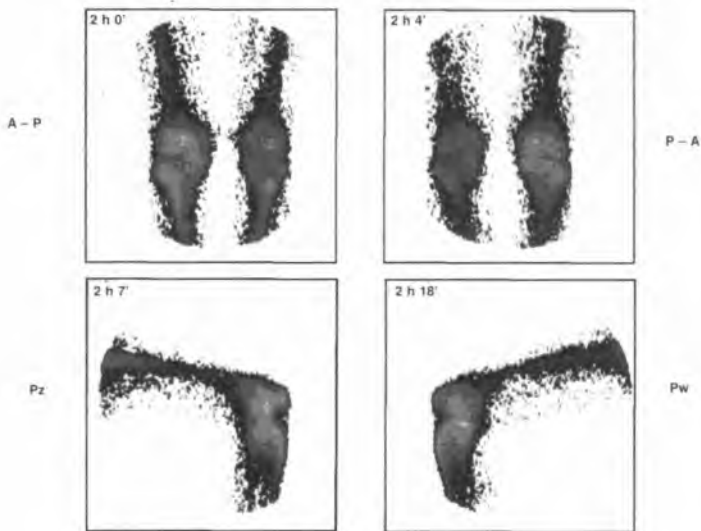
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*Application of scintigraphy MDP 99 mTc in the diagnosis  
of osteoarticular pains of obscure etiology*

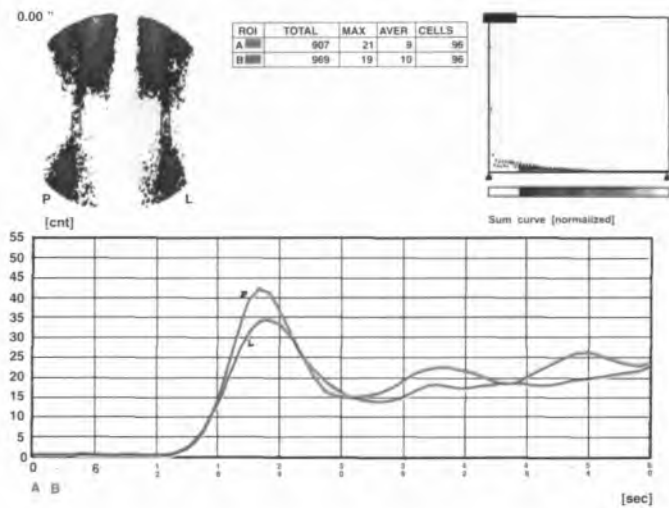
Nuclear medicine plays a very important part in the diagnosis of both inflammatory and malforming degenerative changes. The aim of the paper was the assessment of scintigraphy application in the diagnosis of osteoarticular pains of obscure origin. Apart from the wide application in the oncological diagnosis, scintigraphy of bones is very useful both in orthopaedics and orthopaedic surgery to discover osteoarticular pathology in early states disorders of that kind. This is why in this paper special attention was paid to the above mentioned problem.

MATERIAL AND METHODS

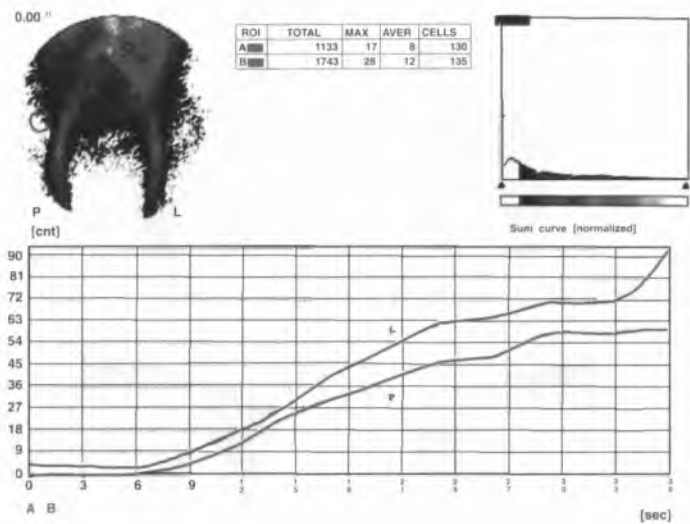
All patients had X-raying done and all radiograms except one case were found to have been normal. The scintigraphic examination was performed by three-phase techniques after the intravenous administration of radioisotope as a bolus of high activity – 740 Mbq followed by estimation of phase I which allows to assess the blood flow, phase II which allows to measure radiotracer concentration of the area and phase III, a late one which reflects metabolic changes in osteoarticular systems. The scintigraphic examination comprised 23 patients, 17 women and 6 men aged 23 – 72 ( mean value – 34 ).



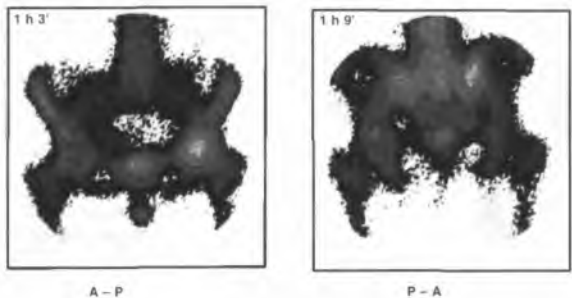
Scintigram 1. Increased radiosotope inflow to the right knee joint



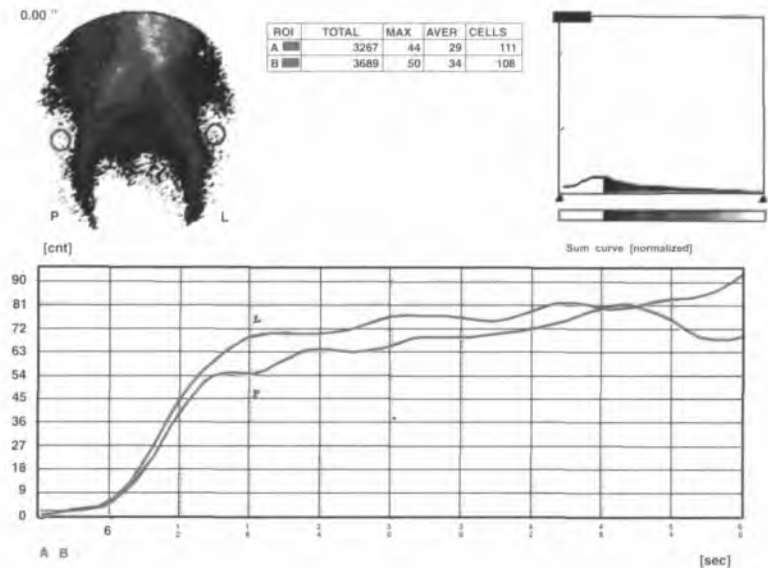
Scintigram 2. Phase 1



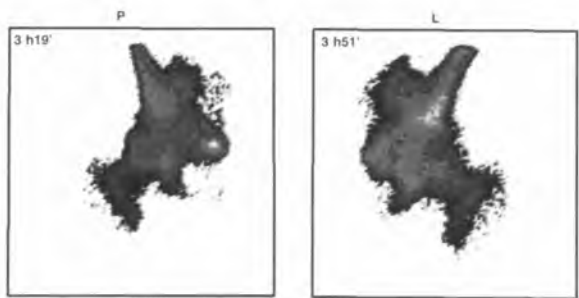
Scintigram 3. Diminished inflow of radiotracer to the hip joint taken into the pathogenic process



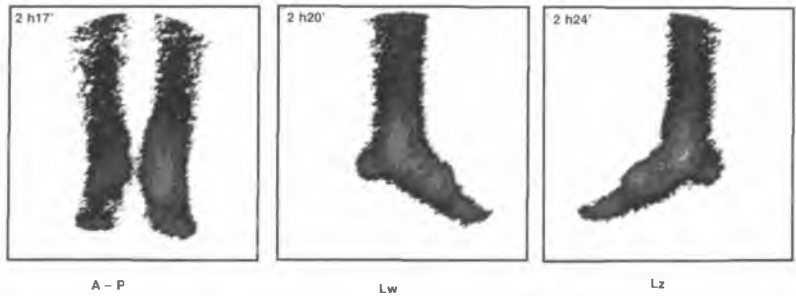
Scintigram 4. Increased accumulation of the radiotracer in the area of the left hip joint



Scintigram 5. Increased radiotracer inflow to the hip joint taken into the pathogenic process



Scintigram 6. Scantypical or aseptic necrosis



Scintigram 7. Increased accumulation of radioisotope in the left ankle joint

## RESULTS

In the group consisting of 15 patients with the pains of hips in phase I the inflow of the marker was diminished and in 2 patients increased while in other cases it has been stated normal. In the phase II and III the concentration and accumulation of radiotracer was found increased in the region of changes in all cases. In a 5-person group of patients with the knee pains the increased inflow and accumulation of radiotracer in the region of joints engaged in the process of the disease was found in all three phases of scintigraphic examination. In the group of remaining 3 patients the wrist pain in 1 case and ankle joint pains in 2 cases were found. In scintigraphic analysis of wrists in all three phases the increased inflow and accumulation of radiotracer was noted. 2 scintigrams of ankle joints showed in the first case in phase I the asymmetric inflow of radiotracer to both ankle joints in the area of the painful joint, the increased concentration of the radiotracer in phase II and in phase III the increased accumulation of the radiotracer in the left ankle bone. In the second case in phase I the asymmetric inflow of the radiotracer was not found. In phases II and III the increased accumulation of radioactive substance in the area of bones creating the right ankle joint was observed.

## CONCLUSIONS

Bone scintigraphy is a sensitive method in the diagnosis of specific skeletal problems encountered in orthopaedics and oncology. Often in this situation routine radiographic evaluation may provide negative or questionable information. Bone scintigraphy is also useful in the evaluation of patients with ill-defined or persistent bone pain not satisfactorily explained by positive radiologic evaluation.

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### SUMMARY

The three-phase scintigraphy of bones is useful in detecting disorders of bone tissue perfusion metabolism in patients with the occult etiology of joint pains. The bone scintigraphy with application of MDP plays the main role in the orthopaedic diagnosis. It is of the greatest importance when radiograms are not normal. In spite of application of the other modern methods it is the technique of choice in the early diagnosis.

#### Zastosowanie scyntygrafii MDP – 99 mTC w diagnostyce bólów stawowych o niejasnej etiologii

Scyntygrafia trójfazowa kości jest przydatna w wykrywaniu zaburzeń ukrwienia i metabolizmu tkanki kostnej u pacjentów z niejasną etiologią bólów stawowych.

Scyntygrafia kości z zastosowaniem MDP pełni niewątpliwie nadal pierwszoplanową rolę w diagnostyce ortopedycznej. Największe znaczenie ma wtedy, gdy zdjęcia rentgenowskie nie wykazują odchyłeń od normy. Mimo stosowania innych nowoczesnych technik pozostaje metodą z wyboru we wczesnej diagnozie.