

**V29** THREE-PHASE BONE SCAN, Ga-67 AND 99mTc-NANOCOLL SCAN IN DETECTION OF OSTEOMYELITIS CAUSED BY WAR INJURIES

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Thirtythree injured soldiers were surgically treated because of pierce wounds of extremities. Treatment was either osteosynthesis of external fixation. Two to four weeks post treatment clinical signs of osteomyelitis appeared. X-ray was negative in all patients. Three-phase bone scan was performed in order to establish diagnosis. Bone scan was positive in all patients. For 11 patients only bone scan was sufficient for decision of further treatment. In 22 patients Ga-67 or 99mTc-nanocoll or both examinations were performed on surgeon's request. In 2 patients out of 5 with additional Ga-67 scan, Ga-67 scan showed more lesions than it was seen on bone scan. In 3 patients out of 5 with additional 99mTc-nanocoll scan, 99mTc-nanocoll scan showed more lesions than it was see on bone scan. In 12 patients with positive bone scan and negative or unclear Ga-67, 99mTc-nanocoll scan was performed. In 5 out of 12 patients 99mTc-nanocoll scan established diagnosis in others confirmed finding on bone and Ga-67 scan.

Our results showed that in one third of our causes bone scan was sufficient for diagnosing of osteomyelitis caused by war injuries. In selected cases where bone scan was not sufficient for diagnosis and decision for treatment 99mTc-nanocoll was more sensitive than Ga-67. In our experience three-phase bone scan is more sensitive than Ga-67. In our opinion three-phase bone scan is the method of choice for diagnosing osteomyelitis in war situation with a lot of causalities.



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**V30** LONG TERM FOLLOW-UP AFTER SYNOVIECTOMY WITH 90-Y IN PATIENTS WITH ARTHRITIS

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The purpose of the study was to evaluate the success rate of synoviorthesis in 273 patients with painful and swollen large joints (jts), up to nine years after the intraarticular application of 90-Y. 402 knees, and 64 shoulders or ankles were treated. Rheumatoid arthritis was present in 449 jts, 64 jts were afflicted by osteoarthritis or other rheumatic diseases. Onehundredeightyfive MBq were applied in knees and shoulders and 111 MBq of 90-Y in ankles. The effect of therapy was evaluated considering the degree of morning stiffness, pain and swelling. The effect of therapy was moderate in 42.5%, good in 30.6% and very good in 14.9% of jts. There was no improvement noted in 11.8% of jts. The duration of improvement was in average 2.8 years. In 11% of pts the improvement lasted 6-9 years after therapy.

Transient side effects were noted in 5.6% of pts, pain and swelling were most frequent. Malignant diseases developed during the follow-up period (less than 4 years) in three pts. We conclude that radioisotopic synoviorthesis mostly has a satisfactory effect with mean duration of 2.8 years. Serious side effects were rare.



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**V31** THE USE OF DUAL X-RAY ABSORPTIOMETRY FOR THE DETERMINATION OF SKELETAL CALCIUM ACCRETION

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The neutron activation analysis is considered the "gold standard" method for the measurement of total body calcium (TBCa). The disadvantage of this method is that there are only a few centers that can perform the measurements with good precision, accuracy and relatively low radiation exposure. The measurement of TBCa gives the information about Ca skeletal accretion which is important for the determination of Ca requirements. The purpose of our study was to measure TBCa in adolescent females during different time periods. The TBCa was measured by the use of dual X-ray absorptiometry (DXA), on Lunar DPX-L densitometer (LUNAR Corp., Madison WI). The in-vivo precision of the instrument for TBCa measurements was 0.93%. The study population included 364 healthy, Caucasian females. An average age at baseline was  $10.8 \pm 0.8$  years (mean  $\pm$  SD) and  $11.9 \pm 0.8$  years after 1 year. The subjects underwent pubertal stage (PS) changes of PS 2 to PS 3 in their sexual development.

The TBCa was  $506 \pm 91$  g (mean  $\pm$  SD) at baseline and  $614 \pm 122$  g after 1 year, with 21.3% change. Assuming that Ca comprises ~38% off bone mineral, there was ~108 g of Ca accumulated in 1 year or ~296 mg Ca/day. In addition, we compared Ca accretion measured by DXA (over the 6 months period) and 2 weeks Ca balance study on a subsample of 26 girls. The accumulation of Ca by DXA method was 52g/6 months and the one estimated from balance study was 50g. We conclude that DXA is a suitable noninvasive method for the measurement of TBCa accretion during rapid growth and for clinical intervention trials in adults.



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**V32** SOFT TISSUE APPEARANCE OF A BONE-SEEKER RADIOPHARMACEUTICAL

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In the course of our routine whole body skeletal imaging - mainly done for metastatic screening - we were often faced with the nonosseous appearance of the polyphosphate-bound technetium /Foszfon/ as the tracer. A Toshiba GCA-901A/SA digital camera has been used in whole body scan mode.

The paradoxity of bone-seekers' accumulation in soft tissues leads to the assumption that not only osteoblasts are able to incorporate the radiotracer but also cells in excited phagocytic state, too. Such states can be induced by inflammatory processes - no matter whether sterile or not - accompanied by some increase in local perfusion.

Documentative cases of mastopathy, indurative thrombophlebitis, subacute and chronic postoperative wound healing will be shown with quite different imaging intensity. This should call also attention to avoid misinterpretations.