

Czerwiński E., Kukielka R.T., Nowak K., Szyguła Z.: Bone mineral density in proximal tibial epiphysis in knee osteoarthritis with varus deformity, IX Instructional Course Lectures of EFORT, Kraków 24-26.10.2002, Course Book; 81 (L38)

### **L38**

#### **BONE MINERAL DENSITY IN PROXIMAL TIBIAL EPIPHYSIS IN KNEE OSTEOARTHRITIS WITH VARUS DEFORMITY**

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Varus deformity is found in 90% of patients with knee OA. Axis deviation of lower extremity influences joint biomechanics and produce alteration in bone mineral density. Structure and density of subchondral bone of the knee was previously examined by X-ray. Densitometry gives us a new method of bone mineral content measurement in the interesting regions of the skeleton.

The aim of this study was the assessment of effect of varus deformity on bone mineral density in tibial epiphysis.

Bone mineral densities (BMD) were estimated in 46 patients at a mean age of 62 years (15 to 78) who were operated on in Department of Orthopaedics. All of them represented osteoarthritis of the knee with varus deviation. BMD of the proximal tibia was evaluated on the Lunar DPX-IQ densitometer and analyzed in three regions of interest: medial, lateral and central. Lower extremity axis deviation was measured using the Metrecom devise (Faro). Results were compared to a control group of 20 patients without osteoarthritis of the knee and without deviation of lower extremity axis.

Increased BMD was found on the overweighed compartment of the knee in comparison to the underweight one. These differences were not observed in the control group. We developed a coefficient, which is the ratio of BMD in the overweighed compartment compared to BMD in underweight one. In our patients the mean value of this coefficient was 3.3, and it ranged from 1,2 to 24,5 (SD 5,7).

Significant correlation between varus axis deviation of the lower extremity and increased BMD coefficient was found.