13 - Surgical Anatomy

PO-005 - (22713) - SUBCHONDRAL BONE MICRO-ARCHITECTURE IN PATIENTS WITH RHEUMATOID ARTHRITIS WHO WERE TREATED WITH TOTAL KNEE ARTHROPLASTY

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Data regarding subchondral microarchitecture in rheumatoid arthritis (RA) are conflicting due to the various study designs and methodological approaches used in previous studies. Considering the variable implant stability after surgical treatment in patients with RA, we conducted a thorough assessment of subchondral trabecular bone microarchitecture in these patients.

With the institutional review board approval, this study encompassed 360 bone samples (240 proximal tibia and 120 distal femur samples) collected during surgery and autopsy that were analyzed using micro-computed tomography (10 μm voxel size). Samples from patients who were subjected to total knee arthroplasty due to knee RA were included in the RA group (n=20, age: 62±10 years), samples from individuals subjected to total knee arthroplasty due to primary knee osteoarthritis were included in the OA group (n=20, age: 72±7 years), while samples from sex-matched cadavers without macroscopic signs of degenerative knee diseases were included in a control group (n=20, age: 67±11 years).

Our data revealed a site-specific alteration in subchondral bone micro-architecture, predominately due to higher bone volume fraction and trabecular thickness of patients with RA compared to other groups (ANOVA with Bonferroni post hoc correction, group-p <0.05 and site-p<0.05). Our data on trabecular micro-architecture suggest that the medial-to-lateral load distribution in the knee joint could be most affected in patients with RA.
Site-specificity of subchondral trabecular micro-architectural alterations could be morphological factors contributing to different effects of surgical treatment and variable implant stability in individuals with knee RA, warranting further research.

Palavras-chave : Rheumatoid Arthritis, MicroCT