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Incidence of Femoroacetabular Impingement At-risk Radiographic Parameters in Asymptomatic Young Chinese and Whites — A Computerised Tomogram Study

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Introduction: Femoroacetabular impingement (FAI) is uncommon in Chinese when compared with Whites. It has been postulated that this is due to a difference in hip joint osteometry. However, there is no study comparing FAI at-risk radiographic signs between the 2 populations.

Methods: A total of 201 subjects (99 Whites and 102 Chinese) scheduled for computed tomogram of pelvis for non-orthopaedic-related diagnosis were recruited. They included 105 males and 96 females ranging from 18 to 40 years. In all, 402 three-dimensional computed tomography pelvis were analysed, and 10 FAI-related radiographic parameters (alpha angle, anterior offset ratio, caput-collum-diaphyseal angle of proximal femur, cross-over sign, ischial spine projection, acetabulum anteversion angle, centre edge angle, acetabular angle of Sharp, Tönnis angle, and anterior acetabular head index) were studied.

Results: Significant differences between Chinese and Whites were found in measurement of alpha angle ($p < 0.001$), caput-collum-diaphyseal angle ($p < 0.001$), cross-over sign ($p < 0.001$), ischial spine projection ($p < 0.001$), centre edge angle ($p < 0.001$), acetabular angle ($p < 0.001$), and acetabular head index ($p = 0.007$). The incidence of FAI at-risk radiographic parameter (alpha angle, anterior offset ratio, cross-over sign, and ischial spine projection) was higher in Whites than in Chinese ($p < 0.001$).

Conclusion: Significant differences existed in the anatomy of hip joint between Chinese and Whites. The incidence of anatomical at-risk signs for development of FAI was higher in young asymptomatic White people than Chinese.

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Use of Strontium-enriched Bioactive Bone Cement in Enhancing Tendon Osteointegration in a Rabbit Anterior Cruciate Ligament Reconstruction Model

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Introduction: It was hypothesised that strontium led to accelerated healing of strontium-enriched calcium phosphate cement (Sr-CPC)-treated soft tissue tendon graft within the bone tunnel in anterior cruciate ligament (ACL) reconstruction. This hypothesis was tested in a rabbit ACL reconstruction model using Achilles tendon allograft.

Methods: A total of 30 bilateral ACL reconstructions were performed in 15 rabbits. The graft on the tested limb was treated with Sr-CPC, while that on the contralateral limb was treated with CPC. Three were sacrificed for histomorphometric analysis respectively at 3, 6, 9, 12, and 24 weeks after the index operation. Histomorphometric analysis of the healing of graft was done by 2 independent observers in 42 histological zones per animal using a scoring system of 0 to 9. The data were analysed by Mann-Whitney *U* test.

Results: Accelerated healing of the graft within bone tunnel was noted in the strontium-treated limb at 3, 6, 9, and 12 weeks after the operation ($p < 0.001$) when compared with the CPC-treated limb. Complete healing of the graft by Sharpey's fibre formation at 9 weeks and early evidence of remodelling into normal ACL insertion site at 12 weeks were noted in the Sr-CPC group. The healing of the graft in the CPC-treated limb was noted 3 to 6 weeks slower than the Sr-CPC group.

Conclusion: Strontium is the main contributing factor leading to accelerated healing of Sr-CPC-treated soft tissue tendon graft in a rabbit ACL reconstruction model.