GO153. Correlation between Spinal Coronal Profile and Proximal Femur Bone Mineral Density in Adolescent Idiopathic Scoliosis

Ali Andalib

1Department of Orthopaedia, Isfahan Medical University, Isfahan, Islamic Republic of Iran

Introduction: Although Adolescent Idiopathic Scoliosis patients have lower Bone Mineral Density (BMD) but relationship between BMD and curve pattern, intensity of curve, or its progress in these patients is controversial. Some studies have shown a significant difference between left and right proximal femur BMDs in AIS patients. Since the curve pattern relationship with density of bilateral proximal femur has not been identified, this study aims to investigate the relationship between Spinal Coronal Profile and differences in BMD on either sides of proximal femur in patients with AIS.

Material and Methods: This study is prospective and included 50 patients with AIS who underwent posterior or anterior and posterior correction and fusion surgery between December 2013 and December 2014. The mean age at the time of surgery was 16.6 ± 5.8 years. Bilateral proximal femur BMD and Z-score was calculated before surgery by dual-energy X-ray absorptiometry. We evaluated correlations between coronal parameters, obtained from preoperative radiographs, and the BMD ratio using Paired Samples Test analysis.

Results: Patients with Lenke type 1 curve (28; all with a right convex curve) have no significant difference between bilateral proximal femur density but in patients with Lenke type 5 curve (22; all with a left convex curve) have greater bone mineral density on right side (concave).

Conclusion: The bilateral proximal femur BMD difference was significantly correlated with the coronal balance in AIS patients. When the patient have coronal imbalance the proximal femur BMD was greater in the concave side.