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Preliminary study of the variability in the geometric acetabular angles in plane anterior-posterior pelvic radiograph in a Sri Lankan population

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Introduction and objectives: The morphology of the acetabulum and its relationship to the femoral head are important contributing factors for the hip dysplasia. The diagnosis of the hip dysplasia depend mainly on the radiographic measurements. In the assessment of acetabular morphology Sharp's angle (ShA) and Sourcil angle (SoA) are often used. Relation between the femoral head and the acetabulum is described by Centre Edge Angle (CEA). Although there are few studies done on the above subject-no data available for a Sri Lankan population. The present study was conducted to assess the variations in the geometric acetabulular angles in plane anterior-posterior pelvic radiographs in a Sri Lankan population

Method: One hundred and thirty nine (139) normal hip radiographs were analysed.

Results: Majority 43.9% (61/139) of the ShA were between 36^0 to 40^0 with a mean value of $37.5^0 \pm 3.73$. Percentage 43.2% (60/139) had CEA between 36^0 to 40^0 which accounts for a mean value of $38.16^0 \pm 4.67$. SoA had the majority [60% (60/139) varying around 0^0 to 5^0. In all three measurements there was no significant difference between two sides of the hip. Gender difference was observed for SoA where males had 50% (16/32) between 6^0-10^0 while females had 49.5% (53/107) between 0^0-5^0 which is statically significant ($p<0.006$), whereas other two angles had no gender differences.

Conclusion: Sharp's angle and Centre Edge Angle had mean values, which were comparable with western data.