The distal femur morphometry during the fetal period

Purpose: It was aimed to investigate the development and morphometric changes of the distal femur during the fetal period. Materials and method: 105 human fetuses (55 males and 50 females) aged between 9-40 weeks were used in this study. Fetuses were divided into four groups between gestational weeks; 1st trimester (9-12 weeks), 2nd trimester (13-25 weeks), 3rd trimester (26-37 weeks) and full term (38-40 weeks). Patella and patellar tendon were dissected in all fetal materials and the knee of each fetus was shown. The dimensions; length and width of intercondylar notch, length and width of medial and lateral condyles, total width of the distal femur and the angle of trochlear groove were measured by Vernier’s caliper and square.

Finding: The length and width of intercondylar notch were found significantly different between trimesters and were rising with gestational age (p<0.05). The length and width of medial and lateral condyles were increased with gestational age. The length and width of lateral condyles were higher than the medial one. The angle of trochlear groove was not changing with gestational age and was found 129.90. It was also found in our study that notch shape index (NSI) was 0.91 and notch width index (NWI) was 0.26 during the fetal period. Result: We consider that the data acquired in our study may contribute to the evaluation the development of distal femur in intrauterine cases.

Keywords: distal femur, intercondylar notch, human fetus, morphometry