FEMORAL BOWING DEFORMITY WITH KNEE OSTEOARTHRITIS IN JAPANESE WOMEN: 2D-CT IMAGE ANALYSIS

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Japanese women with osteoarthritis of knee (OA knee) have sometimes significant Bowing of femur and tibia, which may make it difficult to perform total knee arthroplasty (TKA) with intramedullary rod. We evaluated curvature of long bone of lower limb on 51 OA knees in 44 Japanese women who underwent TKA with 2D images from multislice CT of lower limb (Siemens Sensation64 Cardiac) using image processing software Siemens syngo 3D. The following images were obtained: frontal views of femoral head center and surgical epicondylar axis (SEA) and sagittal views of middle point of SEA and perpendicular plane to frontal view. The mean angles of curvature on 2D imaging were as follows: - Femoral mechanical axis (FMA)/Femoral diaphysial angle (FDA): 7.13 ± 0.91 (5 to 9) - Femoral lateral bowing angle (FLBA): 4.39 ± 4.0 (-1 to 17)- Femoral Anterior Bowing Angle (FABA): 12.3 ± 2.8 (6 to 17) - Lower leg mechanical axis (LMA) /Tibial diaphysial angle (TDA): 0.90 ± 0.88 (0 to 4) - Tibial anterior bowing angle (TABA): 3.94 ± 1.55 (0 to 6) - Posterior condylar angle (PCA): 3.1 ± 1.94 (-3 to 7). We found that many Japanese women with varus knee had anterior and lateral Femoral Bowing frequently. In TKA for OA knee with Femoral Bowing, simple angle measurement on 2D images from CT was useful for preoperative template and accurate operation.