TIBIAL CONDYLAR VALGUS OSTEOTOMY (TCVO): SURGICAL TECHNIQUE AND CLINICAL RESULTS FOR KNEE OSTEOARTHRITIS WITH VARUS DEFORMITY

Tsukasa Teramoto[1*]

[1] Department of Traumatology, Fukushima Medical University Trauma and Reconstruction Centre, Southern Tohoku General, 7-115 Yatsuyamada Koriyama Fukushima, Japan

***Corresponding author's email: terazarov@mac.com**

ABSTRACT

Tibial condylar valgus osteotomy (TCVO) is an intra-articular proximal tibial osteotomy developed in 1989 and has since been used for the treatment of knee osteoarthritis (OA) associated with genu varum. This article describes the surgical technique and clinical results of TCVO. TCVO can be used for all grades of varus knee OA in patients of any age. It is particularly relevant for patients in whom traditional high tibial osteotomy is contraindicated due to advanced OA, intra-articular deformity, and varus thrust during gait. The preoperative range of movement should be at least 90°. Preoperative screening showed varus-valgus instability due to an intra-articular deformity of the proximal tibia. Using intraoperative image intensification, a sagittally oriented "L"-shaped osteotomy is made from the medial to the tibial tuberosity to the centre of the tibial plateau between the medial and lateral tibial spines. The separation of the osteotomy using the lamina spreader is gradually increased using an image intensifier guidance until the articular surface of the lateral tibial plateau comes in contact with the articular surface of the lateral femoral condyle. Adequate correction is indicated by parallelism of the lateral tibial plateau and a line tangential to the distal convexity of the lateral femoral condyle on an anteroposterior (AP) image and the elimination of the valgus instability with the knee in extended position. A "T"-plate (locking or non-locking plate or circular external fixator) is used to fix the osteotomy in the corrected position. Synthetic or autologous bone grafts can be used. We used the Japanese Orthopaedic Association score to evaluate the patient's function and also measured the %MA, medial plateau opening angle, medial plateau angle, and lateral plateau opening angle on an AP view of the long length roentgenogram of the lower limb (standing position). The JOA score, radiologically measured values, and instability of the knee joint remarkably improved. TCVO increases the contact area of the knee joint and therefore decreases the load pressure per unit area. Furthermore, intra-articular osteotomy stabilizes the knee joint by increasing the tension of the cruciate ligaments