

## **BIPLANAR CORRECTIVE OSTEOTOMY IN MALUNION SUPRACONDYLAR FEMUR WITH MULTILIGAMENT INJURY**

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**Introduction:** Osseous malalignment of lower limbs has demonstrated to be a contributing factor of the failure of ligament reconstruction of the knee. Study has shown that malalignment in the sagittal plane may increase knee ligament loading during activities. Whereas, coronal plane malalignment may affect collateral ligament instability, especially in PLC, and may increase strain in ACL. Corrective osteotomy is performed to improve function and stability for the ligament reconstruction.

**Discussion:** A 26-year-old lady presented with right knee instability and short-limb gait after a history of a motor-vehicle accident in 2018. She had sustained an open fracture of the supracondylar of the right femur and was treated with external fixation. Clinical examination revealed that the right lower limb was shortened by 3 cm, and the range of motion of the knee was 10-140 degrees of flexion. Anterior and posterior drawer tests showed laxity. X-ray showed malunion of the supracondylar of the femur with flexion and varus deformity. MRI of the right knee showed a complete tear of the PCL and a partial tear of the ACL. We performed two-stage surgery for her; in which we did corrective osteotomy of the supracondylar of the femur to address the sagittal and coronal malalignment, before we proceeded with the ligament reconstruction.

**Conclusion:** High failure rates following posterolateral corner and cruciate ligament reconstruction in untreated varus malalignment are currently well understood, therefore it should be corrected before ligament stabilization, or in some cases are done as a combined procedure. Surgical correction of varus deformity is usually performed in the proximal tibia, but there are some varus knee cases due to distal femoral deformity, that should be addressed accordingly. Surgical realignment helps redistribute the load through the knee joint and protects the reconstructed ligaments against excessive stress that can result in failure. Biplanar osteotomy is an important concept in correcting the mechanical axis, both in the coronal and sagittal planes.