Corrective Osteotomy Volar Locking Plate for Multiplanar, Malunited Distal Radius Fractures

Dr. Sheharyar Ashfaq
Hull University Teaching Hospitals NHS Trust

Abstract

This study presents the outcomes of corrective osteotomy with bone grafting and volar locking plate fixation for multiplanar malunited distal radius fractures. Malunion of the distal radius remains the most common complication of fracture management, with reported rates up to 17%, often resulting in pain, deformity, and functional impairment. Deformities such as dorsal angulation and radial shortening significantly alter wrist biomechanics, predisposing to arthritis, abnormal loading, and loss of grip strength.

A retrospective analysis was conducted at Hull & East Yorkshire NHS Trust including 25 patients (13 females, 12 males; mean age 48 years) with symptomatic, multiplanar deformities. All patients were ASA grade 1 or 2. Surgical planning involved preoperative assessment of deformity parameters, osteotomy proximal to CORA, and fixation using volar locking plates, with adjunctive bone grafting where indicated.

Union was achieved in all but one case, which required revision surgery. Average time to union was 20.6 weeks, with favourable radiological and clinical outcomes. Complications included one EPL rupture, one superficial infection, and one non-union. Secondary procedures included plate removal and ulnar head stabilization in selected cases.

This series represents the largest single-centre audit of corrective osteotomy with volar locking plates, demonstrating improved function, pain reduction, and reliable union with low morbidity.