

Three Dimensional Corrective Osteotomy for Cubitus Varus in Adults

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성인 내반주에서의 삼차원적 교정절골술
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Cubitus varus is a complex three-dimensional deformity. In addition to deformity on varus-valgus plane, internal torsion of distal humerus is frequently combined. Also limitation of flexion-extension could be associated in some patients.

Surgical correction of the cubitus varus after skeletal maturity, could have different clinical course of growing children. However there have been few papers dealing with the surgical treatment of cubitus varus in adults.

From May 1988 to December 1993, 23 patients who were older than 17 years of age, had corrective osteotomy for cubitus varus considering its three planes of the deformity. To prevent the serpentine deformity, medial displacement of distal fragment was also combined during the operation. The average age was 26 years (17-47), and the average follow-up after the operation was 1 year and 6 months (6 months-3 years). The presumed diagnosis of initial injury deduced from history and preoperative radiograms, was supracondylar fracture in 19 cases (86.4%). Others were lateral condylar fracture of humerus in two, and fractures associated with elbow dislocation in two.

The average at the time of initial injury was 8 years (2-14), and average delay from occurrence of deformity to the operation, were 13 years.

Tardy ulnar nerve palsy was associated in 3 cases (13.6%).

The preoperative average angle of cubitus varus was 26 degrees (16-45), flexion contracture 11 degrees (-5 -45), and further flexion 136 degrees (95-150). For the fixation of osteotomy, Y or T plates were used in 14 cases and only Steinmann pins in 8 cases. Active range of

motion exercise was started from one or two weeks after operation. Callus at osteotomy site was detected on X-ray average 4.4 weeks (3-8) after operation. There was no delay union or nonunion. Carrying angle was improved from varus 26 degrees (16-45) to valgus 3 degrees (varus 10-valgus 8). Flexion contracture was improved from 11 degrees (-5 -45) to 3 degrees (-10 -30). Further flexion was decreased from 136 degrees (95 -150) to 129 degrees (120-150). There were complications in 5 cases complete radial nerve palsy due to Steimann pin injury in 1 case, myositis ossificans 1; and incomplete radial nerve palsy 3. Incomplete radial nerve palsy was considered as a result of tourniquet palsy or excessive traction of nerve at the time of operation, which were recovered in 4 months postoperatively.