Long-term Results after Simple Rotational Osteotomy of the Radius Shaft for Congenital Radioulnar Synostosis

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Objective: The aim of the present study was to clarify the long-term (>10 years) results of simple rotational osteotomy for congenital radioulnar synostosis (CRUS).

Methods: Twelve forearms in 9 patients with CRUS who underwent simple rotational osteotomy of the radius shaft were followed up for an average of 13.6 years (10-19 years) postoperatively. Prior to surgery, the forearm fixation averaged 51.3 degrees of pronation (30-90 degrees). The true position of the forearm in ankylosis was measured by a line through the styloid processes of the radius and the ulna. Palm pronation and supination angles were also measured. The osteotomy was performed at the insertion of the pronator teres to the shaft of the radius. The pronation position was then corrected manually to allow 90 degrees of palm supination with compensatory rotation around the wrist, and a cast was applied. At the final follow-up point, quick Disability of the Arm, Shoulder, and Hand (QuickDASH) score was recorded.

Results: After surgery, the forearm was fixed at an average of 4.2 degrees of supination. The average pronation/supination angles of the palm were 26.7/62.1 degrees at the final follow-up. There were no neurological or circulatory complications after surgery. Ability to perform daily activities was markedly improved, and all patients were satisfied with the results of surgery. The average QuickDASH score was 3.79 points at the final follow-up point.

Conclusion: Our procedure for forearm rotation in patients with CRUS is simple, reliable, satisfactory, and safe.