

Bilobed Flap for Radial Longitudinal Deficiency (RLD): Clinical and Radiographic Outcomes

Scott Oishi MD FACS, Lindley Wall MD, Marybeth Ezaki MD
Texas Scottish Rite Hospital for Children • Dallas Texas



INTRODUCTION

The optimum treatment of the severe radially deviated wrist in radial longitudinal deficiency (RLD) has yet to be determined. The most common procedures utilized include centralization or radialization, with or without distraction. However, long-term results from these procedures have invariably shown significant recurrence in the radial deviation of the wrist with increased risk of injury to the ulnar physis. As well, many of these patients also have decreased range-of-motion following treatment. Because of these risks we instead utilize a soft-tissue release and bilobed flap procedure and report our results.

MATERIALS AND METHODS

Our study group consisted of 14 wrists in 11 patients with an average follow-up of 9 years, 10 months. (3 years to 16 years) All patients underwent bilobed flap with release of non-essential tight radial structures as shown in figure 1. Careful attention to not disturbing the ulnar physis was an integral part of the procedure.

Measurements of wrist resting position and range-of-motion were obtained at follow-up. As well, radiographic evaluation of the integrity of the ulnar physis was performed.

Outcome measures utilized included the DASH, PODCI Global, PODCI Happiness, and VAS.

FIGURES AND TABLES



Post-Op Range of Motion		
	Active	Passive
Radial Deviation	82.14	90.50
Ulnar Deviation	-46.00	-35.21
Wrist Flexion	59.14	76.79
Wrist Extension	6.21	16.71

RESULTS

Average post-operative wrist resting position was 55 degrees compared with 89 degrees pre-operatively. Values for wrist ROM are seen in table 2. Average DASH score was 30 (5-55), PODCI Global was 86 (75-98), and PODCI Happiness was 84 (55-100), and VAS-overall satisfaction (0-10) was 1.38. No physeal injuries were noted in follow-up radiographs, and no patients required subsequent arthrodesis.

CONCLUSIONS

Successful treatment of the wrist in patients with severe RLD is exceedingly difficult as the goal is a "straight" wrist with no loss in range-of-motion and normal ulnar growth. Clearly no procedure to date can satisfy all of these criteria, but we feel that the soft-tissue release and bilobed flap procedure offers a reasonable alternative and should be considered in the treatment algorithm for these patients. Outcome measures show that patients use the extremity well after the procedure, and are very satisfied with the result.