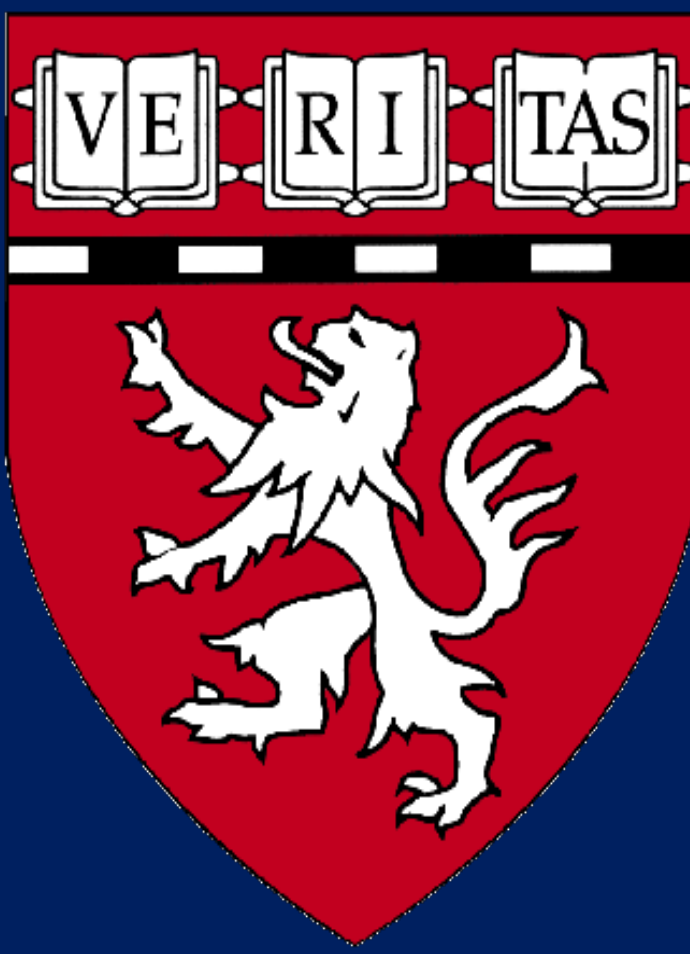




Distal Radioulnar Joint Replacement in The Scarred Wrist



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1. Introduction

Aim: to determine the outcomes of a cohort of patients who underwent distal radioulnar joint arthroplasty in the face prior wrist surgery.

- Distal radioulnar joint (DRUJ) semi-constrained prosthesis (APTIS Medical) is effective for acute and chronic problems.
- Prior wrist surgery makes prosthesis placement challenging.

APTIS Medical DRUJ prosthesis



2. Methods

Design:

- Prospective
- 1998-2012

Inclusion:

- DRUJ arthroplasty with APTIS DRUJ prosthesis
- Prior surgery of the wrist

Outcome:

- Range of motion
- Grip strength
- Pain
- DASH

Table 1: Patient Demographics (n=14)

Age, mean (SD), years	44.4 (8.5)
Male, n(%)	7 (50)
Dominant hand affected, n(%)	10 (71)
Diagnosis, n(%)	
Post-traumatic osteoarthritis	10 (71)
Rheumatoid arthritis	4 (29)
Prior DRUJ surgery, n(%)	
Distal ulnar resection	9 (64)
DRUJ arthrodesis	2 (14)
Ligamentous DRUJ stabilization	2 (14)
Prior wrist surgery, n(%)	
Total wrist arthrodesis	10 (71)
Radioscapholunate arthrodesis	3 (21)
Wrist replacement	3 (21)

Table 2: Bivariate Analysis Objective and Subjective Outcomes

	Objective Measurements		
	Preoperative	Postoperative	P-value
Pronation, mean (SD) °	45.6 (23.8)	76.1 (17.8)	<0.01 ¹
Supination, mean (SD) °	42.3 (32.2)	76.1 (15.6)	0.02 ¹
Weight-lifting ability, mean (SD) kg	2.5 (1.7)	8.5 (4.6)	<0.01 ¹
Grip strength, mean (SD) kg	16.9 (10.8)	26.2 (13.1)	0.08 ¹
	Subjective Measurements		
	Preoperative	Postoperative	P-value
Pain score, mean (SD)	6.57 ± 2.00	1.29 ± 2.16	<0.01 ¹
DASH score	77.10 ± 9.62	29.94 ± 24.11	<0.01 ¹

¹ Using paired t-test

DASH= Disabilities of the Arm, Shoulder and Hand Questionnaire

3. Results

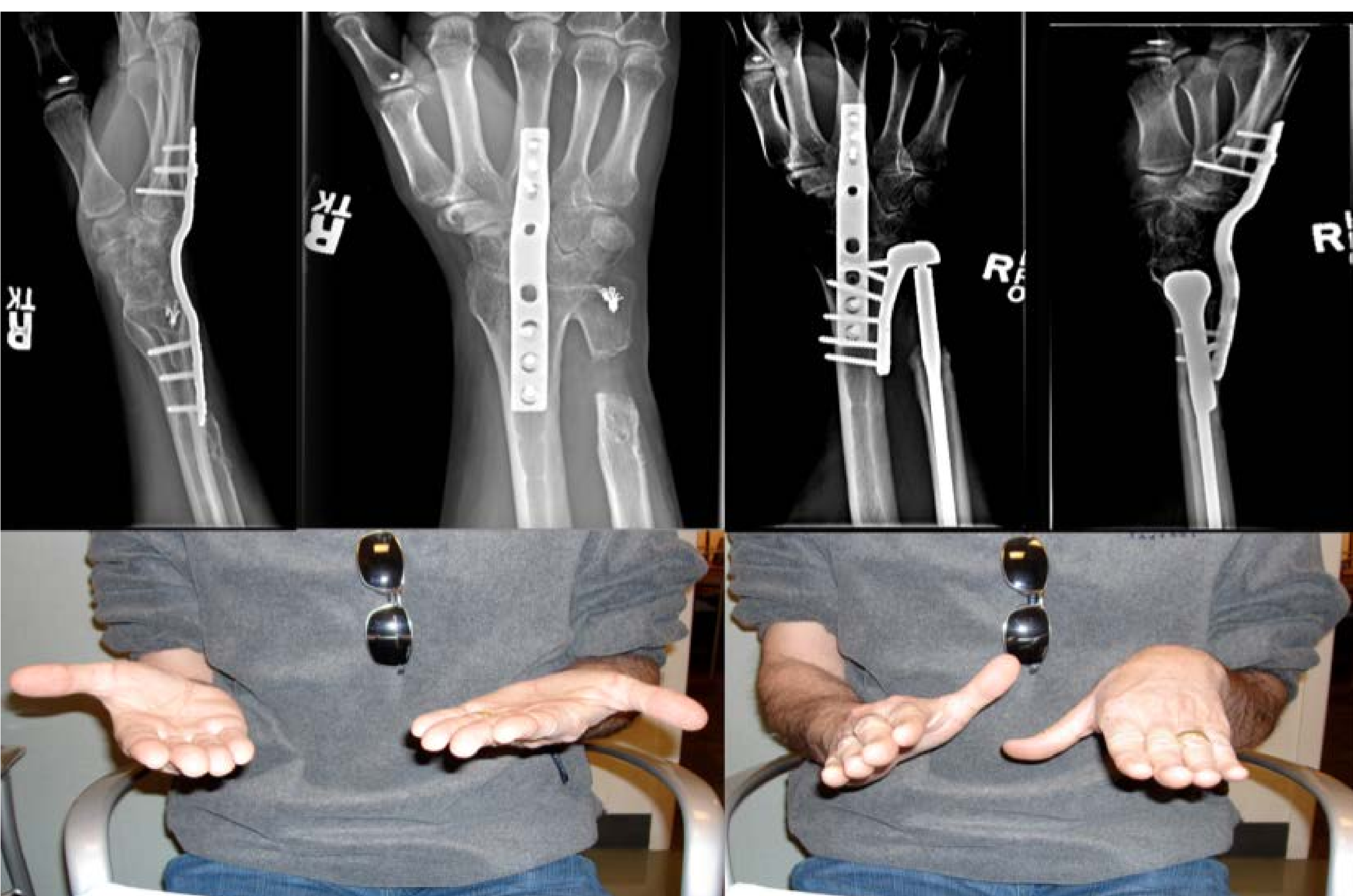
- **Range of motion:**
 - Pronation: 76.1 ± 17.8°
 - Supination: 76.1 ± 15.6°
- **Grip strength:** 8.5 ± 4.6 kg
- **DASH:** 29.9 ± 24.1
- **Pain:** 1.3 ± 2.2
- **Additional surgery:**
 - 3 implant related
 - 5 non-implant related

4. Conclusion

1. Using the semi-constrained DRUJ prosthesis as an addition to wrist arthrodesis will improve forearm function in patients with carpal and DRUJ arthritis.
2. In this series in patients with multiple prior wrist surgeries, we showed improved range-of-motion and lifting strength; and subjectively decreased pain after arthrodesis with DRUJ replacement.
3. The number of reoperations is not surprising given the scarred soft tissue envelope, numerous prior surgeries, and distorted bony anatomy.

Table 3: Postoperative complications

Postoperative Complications (n=5)	
Infection, n(%)	
Superficial	2 (20)
Deep	1 (10)
Heterotopic ossification, n(%)	1 (10)
Traumatic prosthetic breakage, n(%)	1 (10)



Patient with prior wrist arthrodesis and Sauvé-Kapandji procedure