

TABLE E-1 Demographic Data

Case	Gender	Age (yr)	Additional Ipsilateral Injuries	Group	Previous Operations	Operative Procedure
2	F	54	Proximal ulnar # and RH # and dislocation	A	ORIF of proximal part of ulna and RH	Capsulectomy, débridement, and removal of HO, ulnar nerve transposition, hardware removal, extension osteotomy of ulna with bone graft, decompression of Guyan canal, and repair of LCL
10	M	47	RN #, proximal ulnar #, and scaphoid #	A	ORIF of radius and ulna and CR of elbow	Hardware removal, débridement, and capsulectomy
11	F	60	RH # and olecranon #	A	ORIF of ulna and ORIF of RH	Excision of HO, capsulectomy, débridement, and hardware removal
12	F	48	None	A	RH débridement	Capsulectomy, débridement, ulnar nerve transposition, and LCL repair
13	M	49	RH # and dislocation and coronoid #	A	ORIF of RH and coronoid, ulnar nerve transposition, repair of MCL and LCL and application of hinge distractor, removal of distractor and manipulation	Hardware removal, capsulectomy, débridement, and LCL repair
17	M	69	RH # and dislocation, DRUJ injury	A	ORIF of RH and RN and ORIF of acetabulum	Hardware removal, excision of synostosis, capsulectomy, débridement, and LCL repair
20	M	35	RH # and dislocation, DRUJ injury, and pelvic #	A	ORIF of RH and application of compass hinge	Hardware removal, capsulectomy, débridement, ORIF of coronoid and bone graft, ulnar nerve transposition, and MCL and LCL repair
22	M	42	Proximal humeral #	A	Elbow arthroscopy, limited synovectomy, and capsulectomy	Synovectomy and LCL repair
25	M	45	None	A	ORIF of RH	Arthroscopy, débridement, and LCL repair
26	F	49	DRUJ injury	A	ORIF of RN	Capsulectomy
27	M	32	RH # and dislocation and coronoid #	A	CR and percutaneous pinning	Débridement, capsulectomy, and ulnar nerve transposition
29	F	49	None	A	ORIF of RH	Capsulectomy, débridement, and LCL repair
1	F	71	RH # and dislocation, coronoid #, and LCL disruption	B	None	Reconstruction of MCL and LCL (semitendinosus), capsulectomy, débridement, and ulnar nerve transposition
6	M	51	RH # and dislocation and DRUJ injury	B	None	Synovectomy and LCL repair
7	M	51	Proximal ulnar #, RH #, and dislocation	B	ORIF of ulna	Capsulectomy, excision of HO, ulnar nerve transposition, and LCL repair
14	F	57	RH # and dislocation and coronoid #	B	None	Capsulectomy, débridement, and LCL repair
15	F	44	None	B	None	Capsulectomy and LCL repair

16	F	60	RH # and dislocation	B	None	Capsulectomy, débridement, excision of HO, lateral epicondylar osteotomy, and PIN exploration
23	F	93	Proximal ulnar # and RH dislocation	B	None	ORIF of ulna and ICBG
24	F	50	None	B	None	Lateral epicondylar osteotomy, synovectomy, capsulectomy, débridement, and LCL repair
28	F	44	Capitellar #	B	None	Capsulectomy and LCL repair
30	M	42	Bilateral distal radial #	B	None	Lateral epicondylar osteotomy, capsulectomy, and débridement
31	F	59	Proximal ulnar #	B	ORIF of ulna	Revision ORIF of ulna, bone-grafting, capsulectomy, débridement, and synovectomy
3	F	52	Disruption of DRUJ, RH #, and 2 previous silicone radial head replacements	C	Silicone implant, revision of silicone twice, and Swanson titanium revision	Débridement and micro# of capitellum, capsulectomy, and LCL repair
4	F	74	Proximal ulnar # and RH # and dislocation	C	ORIF of ulna and RH excision, hardware removal, repeat ORIF of ulna and silicone implant, and removal of hardware from ulna	Silicone removal, capsulectomy, synovectomy, débridement, and lateral epicondylar osteotomy
5	M	68	RH # and dislocation, coronoid #, facial #, orbit #, and distal radial #	C	Silicone implant	Silicone removal, capsulectomy, débridement, removal of HO, and LCL repair
8	F	44	RH # and dislocation and DRUJ injury	C	RH excision and silicone implant	Synovectomy, removal of silicone implant, iliac crest bone graft, and LCL repair
9	F	47	RH # and dislocation and DRUJ injury	C	Silicone implant	Silicone removal, excision of HO, anterior capsulectomy, lateral epicondylar osteotomy, synovectomy, and débridement
18	M	60	RH # and dislocation, coronoid #, and scaphoid #	C	Excision of coronoid, silicone implant	Silicone removal, capsulectomy, débridement, lateral epicondylar osteotomy, and synovectomy
19	F	58	RH # and dislocation and coronoid #	D	LCL reconstruction with palmaris longus, elbow arthroscopy, and RH excision	MCL reconstruction with palmaris longus
21	F	75	None	D	RH excision	Removal of HO, ulnar nerve transposition, PIN exploration, capsulectomy, débridement, and application of compass hinge
32	M	51	Midshaft radial # and DRUJ injury	D	RH resection and distal ulnar resection	Distal radioulnar fusion with ICBG, LCL repair, and débridement

= Fracture; RH = Radial Head; LCL = Lateral Collateral Ligament; MCL = Medial Collateral Ligament; RN = Radial Neck; ORIF = Open Reduction and Internal Fixation; CR = Closed Reduction, DRUJ = Distal Radioulnar Joint; ICBG = Iliac Crest Bone Graft; HO = Heterotopic Ossification; LCL = Lateral Collateral Ligament, PIN = Posterior Interosseous Nerve.

TABLE E-2 Functional Outcome Measures

Case	Sex	Age (yr)	Group	Duration of F/U (mo)	SF-36 Physical/Mental	Satisfaction	MEPS	PREE	Flex/Ext (deg)	Pro/Sup (deg)	Additional Operations	Complications
2	F	54	A	54	55/55	5	95	3	120/1	51/53	None	None
10	M	47	A	48	56/47	10	100	67	125/7	63/60	None	None
11	F	60	A	46	52/61	9	97	2	121/10	67/50	None	None
12	F	48	A	88	38/35	9	69	52	129/25	52/65	None	None
13	M	49	A	124	56/56	10	100	0	133/1	64/54	None	None
17	M	69	A	60	35/62	8	97	6	155/39	52/57	None	None
20	M	35	A	50	51/60	10	73	20	100/22	46/44	Ulnar shortening osteotomy	None, previous HO
22	M	42	A	67	37/45	5	66	39	104/13	101/51	None	None
25	M	45	A	124	42/36	8	81	53	120/4	48/59	None	None
26	F	49	A	124	49/54	9	92	3	135/8	88/70	None	None
27	M	32	A	36	51/55	9	99	0	127/8	56/66	None	New HO (Brooker I)
29	F	49	A	112	59/51	10	100	0	124/6	51/43	None	None
1	F	71	B	108	35/61	9	73	32	133/45	71/64	None	Charcot joint, ulnar nerve neuropathy, previous HO
6	M	51	B	26	50/58	10	100	0	133/10	59/74	None	None
7	M	51	B	77	35/38	6	32	85	98/15	49/47	Removal of painful ulnar hardware	None
14	F	57	B	76	47/59	10	100	8	124/11	64/50	None	None
15	F	44	B	130	30/60	3	55	59	105/12	85/81	None	CRPS Type I, previous HO
16	F	60	B	130	45/40	10	90	0	111/16	72/56	None	None
23	F	93	B	92	31/60	9	61	49	115/10	58/60	None	None
24	F	50	B	122	39/43	5	100	0	145/5	85/87	None	None
28	F	44	B	114	41/62	8	45	57	107/12	68/58	Ulnar nerve transposition and capsulectomy	Ulnar neuropathy, previous HO
30	M	42	B	131	41/41	9	80	0	127/9	67/67	None	None
31	F	59	B	36	36/17	10	66	0	134/24	69/53	Removal of ulnar plate	New HO (Brooker I)
3	F	52	C	54	39/52	10	100	31	135/3	74/68	Ulnar shortening osteotomy, TFCC	None

											débridement, revision ORIF and bone graft of ulnar nonunion	
4	F	74	C	130	39/57	7	83	23	135/25	70/90	None	New HO (Brooker I)
5	M	68	C	116	30/60	8	51	59	97/31	66/37	None	Ulnar nerve neuropathy, previous HO
8	F	44	C	143	48/53	9	80	24	125/10	65/59	None	None
9	F	47	C	148	39/44	9	100	7	130/5	63/70	None	None
18	M	60	C	136	50/60	10	99	3	113/11	65/73	None	None, previous HO
19	F	58	D	127	58/55	10	100	0	133/3	74/83	None	None
21	F	75	D	88	30/69	9	92	23	115/14	54/57	Removal of hinged fixator	PIN palsy, previous HO
32	M	51	D	166	34/55	9	67		122/7	13/52	Distal ulnar arthroplasty, removal of distal radial hardware, osteotomy and bone-grafting	None

HO = Heterotopic Ossification; TFCC = Triangular Fibrocartilage Complex; PIN = Posterior Interosseous Nerve; ORIF = Open Reduction and Internal Fixation; CRPS = Chronic Regional Pain Syndrome

TABLE E-3 Outcome Measurements

Measure		Mean $\pm$ SD	Range	Interpretation		
				Normal Score	Worst Score	Best Score
SF-36	Physical	44 $\pm$ 9	30-59	50 $\pm$ 10		
	Mental	52 $\pm$ 11	17-65	50 $\pm$ 10		
DASH		27 $\pm$ 22	0-91		100	0
MEPS	Total	83 $\pm$ 19	32-100		0	100
	Pain	35 $\pm$ 13	0-45		0	45
	Motion	109° $\pm$ 18°	66°-150°		0	20
	Stability	10 $\pm$ 1	5-10		0	10
	Function	22 $\pm$ 6	6-45		0	25
ASES	Pain	13 $\pm$ 14	0-43		50	0
	Function	24 $\pm$ 11	0-36		0	36
	Satisfaction	9 $\pm$ 2	3-10		0	10
PREE	Pain	13 $\pm$ 13	0-44		50	0
	Function	11 $\pm$ 13	0-49		50	0
	Total	25 $\pm$ 23	0-85		100	0
PRWE	Pain	14 $\pm$ 14	0-39		50	0
	Function	10 $\pm$ 11	0-32		50	0
	Total	24 $\pm$ 24	0-65		100	0

SF-36 = Short Form-36 Health Survey; DASH = Disabilities of the Arm, Shoulder and Hand Questionnaire; MEPS = Mayo Elbow Performance Score; ASES = American Shoulder and Elbow Score; PREE = Patient-Rated Elbow Evaluation; PRWE = Patient-Rated Wrist Evaluation.