

TABLE E-1 Data on the Patients

Case	Gender, Age at Fracture (<i>yr</i>).	Arthroplasty	Type of Fracture	Time from Arthroplasty to Fracture (<i>mo</i>)	Initial Treatment (Result)	Second Treatment (Result)	Third Treatment (Result)	Time from Fracture to Union (<i>mo</i>)	Follow-up from Date of Fracture (<i>mo</i>)	Pain	Active Abduction (Prefracture/Latest Follow-up)	External Rotation (Prefracture/Latest Follow-up)	Rating (Prefracture/Latest Follow-up)
1	M, 71	R TSA	C	3.4	HAC (union)			8	59	Occasional moderate	*/160	*/80	*/U
2	M, 80	R TSA	C	51	Orthosis (union)			1.6	7	None	130/130	30/30	S/S
3	F, 80	L TSA	B	146	SS (union)			2.7	8	None	110/100	35/30	S/S
4	M, 80	R TSA	A	69	HAC (union)			3.9	3.9	None	150/120	70/15	E/U
5	M, 69	L HHR	A	126	Orthosis (union)			11	91	Slight	NA/140	NA/60	NA/E
6	F, 69	L TSA	A	67	Orthosis (union)			8.7	21	Slight	150/140	45/45	E/E
7	F, 64	L HHR	B	2.8	Orthosis (delayed union)	ORIF – plate, cables, screws, ICBG (union)		13	29	Slight	*/80	*/75	*/U
8	F, 72	R HHR	B	1.4	Orthosis (delayed union)	ORIF – plate, screws, BG (union)		13	191	Slight	*/150	*/60	*/E
9†	F, 66	R TSA	B	74	Orthosis (delayed union)	Rev long stem TSA (union)		7	69	Moderate	120/0	70/90	S/U
10	F, 71	L TSA	A	35	SS (delayed union)	Rev long stem TSA, BG (nonunion)	Vascularized fibular graft (union)	41	139	Moderate	120/150	25/0	S/U
11	F, 63	L TSA	B	55	Orthosis (delayed union)	ORIF – plate, screws, cables, ICBG (union)		18.6	71	None	150/100	25/50	E/S
12	F, 77	L HHR	C	8	ORIF – Plate/screws, cables (union)			4.5	168	Slight	35/100	35/10	U/S
13‡	M, 62	L TSA	Proximal diaphysis	70	Rev long stem HHR, Allograft (union)			9	9	None	160/120	45/40	U/U
14‡§	F, 41	R HHR	B	48	Custom HHR, allograft				128	None	75/30	35/90	U/U
15	M, 55	R HHR	A	1.2	Rev long stem HHR, Parham bands (union)			4.6	68	Slight	*/135	*/15	*/U
16	F, 59	L TSA	A	24	ORIF – strut graft, screws, cables (union)			4.5	4.5	Occasional moderate	90/60	45/5	U/U

TSA = Total Shoulder Arthroplasty, HHR = Humeral Head Replacement, HAC = Hanging Arm Cast, SS = Shoulder Spica cast, ICBG = Posterior Iliac Crest Bone Graft, E = Excellent, S = Satisfactory, U = Unsatisfactory, NA = Not available. * = Injury occurred in acute postoperative period. †Case 9: Patient had no active motion due to a cerebrovascular accident. ‡Cases 13 and 14: Moderate to severe pain before injury. §Case 14: Revised with tumor prosthesis.