Appendix E-1. Nonunions of the Humeral Diaphysis

	Sex	Age	Side	Initial Treatment	Elapsed Months	Preop. Deformity*	Nonunion	Definitive Treatment	Lag Screw	Time/Union (Months)	Follow-up (Months)	Postop. Deformity*	Complication	Pain	MOI
1	F	66	R	Splint, Brace	8	20vr	Hyper	1 Plate & BG	Yes	5	25		Neuropathic Pain	Little	Fall
2	F	52	R	IM	5		Oligo	1 Plate & BG	No	7	10	10re	None	None	MVA
3	M	70	L	IM, ORIF & BG, EBI	35	25vr	Atrophic	1 Plate & BG	Yes	5	16		Infection/Graft Site	Little	Fall
4	F	66	R	Cast, IM, ROH, Brace	32	5vr, 8a	Hyper	1 Plate & BG	Yes	4.5	4.5		None	None	MVA
5	F	56	L	Cast, Brace	3	8vr, 18a	Atrophic	1 Plate & BG	Yes	10	10		None	Little	Fall
6	M	30	L	Splint, Brace, EBI	5	14vr	Atrophic	1 Plate & BG	Yes	6	6		None	None	Sports
7	M	56	L	Brace, IM	15	8vr	Oligo	1 Plate & BG	Yes	4.5	4.5	8vr	None	None	Ski
8	M	44	L	Brace	5	10vr, 10a	Atrophic	1 Plate & BG	Yes	5	6		None	None	Ski
9	M	45	L	IM	13	35vr, 6re	Oligo	1 Plate & BG	Yes	5.5	7	10vr	None	None	MVA
10	M	63	R	Brace, EBI	3.5	30vr	Atrophic	1 Plate & BG	Yes	2.5	5.5		None	Little	Fall
11	F	64	L	Cast, ORIF	15	30vr, 20re	Hyper	1 Plate & BG	Yes	Not Healed at 1.5			None	None	Fall
12	F	20	R	Cast, Pins, IM, Ex Fix	18		Atrophic	1 Plate & BG	Yes	2.5	44		None	None	MVA
13	M	61	L	Cast, Brace	141	45vr, 20re	Hyper	1 Plate & BG	Yes	3	3	8a	None	None	Assault
14	F	63	R	Brace	8	8vl, 40a	Hyper	1 Plate & BG	Yes	2.5	38		None	None	Fall
15	M	47	R	IM, Brace	13	30vr,20a	Oligo	1 Plate & BG	Yes	4.5	4.5		None	None	Assault
16	F	47	R	IM	16	15vr, 12a	Oligo	1 Plate & BG	Yes	5	7		None	None	Fall
17	F	41	L	Cast, Brace	7	22vr, 3a	Atrophic	1 Plate & BG	Yes	6	10	5vr	None	Moderate	MVA
18	M	49	R	IM	6.5	16vr, 6a	Hyper	1 Plate & BG	Yes	7	7		Radial Neuropathy	Little	MVA
19	F	26	L	IM	7	10vr	Oligo	1 Plate & BG	Yes	3	18	3vr	None	Little	MVA
Average		51			19					4.9	12.6				
1	F	54	L	Brace, EBI	6	5a	Atrophic	2 Plates & BG	Yes	5.5	6		None	None	Fall
2	F	29	R	ORIF	10		Atrophic	2 Plates & BG	Yes	2.5	2.5		None	None	Fall
3	M	20	R	IM	6		Atrophic	2 Plates & BG	Yes	9.5	9.5		None	None	MVA
4	M	40	R	ORIF, EBI, ORIF & BG, EBI	31	20vr, 20re	Oligo	2 Plates & BG	Yes	3	10	15vr	None	None	MVA
5	F	47	L	IM, ORIF, ORIF & BG	44.5	10vl, 22a	Atrophic	2 Plates & BG	Yes	5.5	28		None	None	Sports
6	F	78	R	IM & Cerclage	5		Atrophic	2 Plates & BG	Yes	4	26		None	None	Fall
7	F	64	R	IM, ROH	8	25vr, 5re	Atrophic	2 Plates & BG	Yes	4.5	29		None	None	MVA
8	F	51	L	Conservative, ORIF	60	30vl, 60a	Atrophic	2 Plates & BG	Yes	Nonunion	26**		—	—	Fall
9	F	29	L	IM, ROH	12		Hyper	2 Plates & BG	Yes	6	17	8a	None	None	Fall
10	F	75	R	ORIF & BG, IM & B	26		Atrophic	2 Plates & BG	Yes	9	26		None	None	MVA
11	F	49	L	Brace	5	45vr, 20a	Oligo	2 Plates & BG	Yes	4	8		None	None	Fall
12	M	69	L	Brace	6	30vr, 15a, 15ir	Atrophic	2 Plates & BG	Yes	4	6		None	None	Fall
13	M	43	R	Ex Fix	10	36vr	Hyper	2 Plates & BG	Yes	4.5	8	10a	None	None	MVA
14	F	27	L	Cast, ORIF, ORIF	22.5	35vr, 65a	Oligo	2 Plates & BG	Yes	Nonunion	9**		—	—	MVA
15	F	73	L	Brace, ORIF	7.5	36vr, 110re	Atrophic	2 Plates & BG	Yes	3	15	15vr	None	None	MVA
16	M	36	L	IM, Brace	2.5	10vr, 5 a, 40ir	Oligo	2 Plates & BG	Yes	6	24		None	None	MVA
17	M	13	L	ORIF	8		Oligo	2 Plates & BG	Yes	3	11		None	None	Sports
18	F	27	L	Brace, EBI	5.5	6vr	Atrophic	2 Plates & BG	Yes	2	5		None	None	MVA
Average		46			15					4.8	14.8				

Clinical data on thirty-seven nonunions of the humerus, nineteen of which were treated with a single posterior plate and eighteen of which were treated with a two-plate construct.

BG = bone graft; Ex Fix = external fixation; IM = intramedullary nail; ORIF = open reduction and internal fixation; vr = varus; vl = valgus; a = antecurvatum; re = recurvatum; ir = internal rotation; MOI = mechanism of injury; MVA = motor-vehicle accident. * = degrees; ** = Months from surgery date to date of last follow-up visit.