

TABLE E-1 Demographics, Fracture Classifications, and Operative Indications*

Case	Age (yr)/ Sex	Mech. of Injury	Fract. Class.	Other SSSC Lesions	Time from Injury to Op. (days)	LBO (mm)	Angulat. (deg)	Glenopolar Angle (deg)	Operative Indications						
									LBO ≥20 mm	Angulat. ≥45°	LBO ≥15 mm, Angulat. ≥30°	Glenopolar Angle ≤22°	≥2 SSSC Lesions Displaced ≥10 mm	Open Fract.	No. of Indications per Patient
1	33/F	Boating acc.	A3.1		6	0	7	42						+	1
2	42/F	Gunshot	A3.2	Clavicle fract.	15	10	20	28					+	+	2
3	58/M	MCC	A3.1	Clavicle fract.	13	12	1	30					+		1
4	42/F	MVC	A3.2		16	16	31	40			+				1
5	68/M	Pinned by large object	A3.2		6	34	41	15	+		+	+			3
6	61/M	Ped-MV acc.	A3.2	Clavicle fract.	19	22	8	30	+						1
7	53/F	Assault with blunt weapon	A3.1	Clavicle fract.	14	11	6	33					+		1
8	64/F	MVC	A3.2	Clavicle fract.	10	26	19	32	+						1
9	21/F	MVC	A3.1		18	20	27	37	+						1
10	47/M	MCC	A3.2		11	29	18	34	+						1
11	39/M	ATV acc.	A3.2	Clavicle fract.	19	28	17	35	+						1
12	53/M	Pinned by large object	A3.2		10	39	16	22	+			+			2
13	48/M	MCC	A3.1	Clavicle fract.	10	30	13	28	+						1
14	38/M	MCC	A3.1		3	24	34	30	+		+				2
15	49/M	MCC	A3.2	Clavicle fract.	16	23	6	31	+				+		2
16	35/M	Fall from height	A3.2		9	3	46	26		+					1
17	49/M	MCC	A3.2		5	22	28	31	+						1
18	57/F	MVC	A3.2	Clavicle fract.	13	12	13	31					+		1
19	51/M	MCC	A3.1		19	22	18	21	+			+			2
20	53/M	MCC	A3.1	Clavicle fract.	14	31	31	35	+		+		+		3
21	21/M	MCC	C1.2	AC injury	20	20	2	27	+						1
22	25/M	MVC	A3.2		11	22	21	34	+						1
23	57/F	MCC	A3.1	Clavicle fract.	10	12	33	42					+		1
24	41/M	Fall from height	A3.1	Clavicle fract.	7	12	25	30					+		1
25	63/M	Low fall	A3.1		4	21	27	34	+						1
26	39/M	Bicycle acc.	C1.2	Clavicle fract.	12	23	5	22	+			+			2
27	39/M	Skiing acc.	A3.1		7	16	37	33			+				1
28	53/M	Motocross	A3.1		13	25	None	None	+						1

		acc.													
29	31/M	MVC	C1.2	AC injury	3	14	1	38					+		1
30	21/M	ATV acc.	A3.2		10	24	15	22	+			+			2
31	32/M	MVC	A3.1		18	16	15	33							0†
32	50/M	Motocross acc.	A3.2		14	25	19	31	+						1
33	44/M	Bicycle acc.	A3.2		6	21	2	30	+						1
34	48/F	MCC	A3.1	Clavicle fract.	1	25	25	37	+						1
35	19/F	MVC	A3.1		16	29	15	18	+			+			2
36	39/F	Fall from horse	A3.1		13	21	34	42	+		+				2
37	64/M	Fall from horse	A3.1	Clavicle fract.	9	30	32	24	+		+				2
38	55/M	Attacked by bull	A3.1		4	25	16	32	+						1
39	26/M	MVC	A3.1	Clavicle fract.	3	20	5	32	+				+		2
40	19/M	MVC	A3.1		5	30	19	20	+			+			2
41	60/M	MVC	C1.1		2	21	5	27	+						1
42	31/M	Bicycle acc.	C1.2	Clavicle fract., CC injury	18	27	16	27	+						1
43	29/M	Fall from height	A3.1		2	33	23	22	+			+			2
44	47/M	MCC	C1.2	Clavicle fract.	17	22	12	33	+						1
45	59/M	Fall from height	A3.1		6	9	22	18				+			1
46	49/M	Bicycle acc.	A3.1		13	21	5	22	+			+			2
47	24/M	MVC	C1.2		19	0	46	39		+					1
48	53/M	MCC	A3.1	Clavicle fract.	14	21	10	35	+				+		2
49	66/M	MCC	A3.2	Clavicle fract.	8	21	0	25	+						1
50	54/M	MCC	A3.2	Clavicle fract.	20	18	7	28					+		1
51	68/M	MCC	A3.1	Clavicle fract.	17	17	35	32			+		+		2
52	50/M	ATV acc.	C1.2	Clavicle fract.	12	26	2	16	+			+	+		3
53	51/M	Ped-MV acc.	A3.1		4	21	3	39	+						1
54	19/M	Bicycle acc.	C1.2		8	11	10	16				+			1
55	26/M	Low fall	A3.1		12	23	22	33	+						1
56	18/M	MVC	A3.1	AC injury	17	25	20	28	+						1
57	47/M	MVC	A3.1		4	40	15	37	+						1
58	45/M	Low fall	A3.2		19	13	24	21				+			1
59	63/F	MCC	A3.2		4	33	29	24	+						1
60	47/M	Pinned by large object	C1.2		16	22	20	26	+						1
61	32/M	Bicycle	A3.1		12	29	7	25	+						1

		acc.													
Total/mean			20 A3.1, 41 A3.2, 1 C1.1, 9 C1.2	26	11	21	18	29	43	2	8	13	14	2	1.37

*SSSC = superior shoulder suspensory complex, LBO = lateral border offset, MCC = motorcycle collision, MVC = motor-vehicle collision, Ped-MV acc. = pedestrian-motor-vehicle accident, ATV = all-terrain vehicle, AC = acromioclavicular ligament, and CC = coracoclavicular ligament. †This patient initially received nonoperative treatment, but there was further medialization within 1 week and he preferred surgical intervention because he desired a faster return to work as a sheet metal laborer.

TABLE E-2 Range of Motion, Strength, Functional Outcomes, and Complications at the Time of Follow-up*

Case	Follow-up (mo)	DASH Score (points)	Range of Motion (Injured/Uninjured) (deg)			Strength (Injured/Uninjured) (lbf)			Complications/ Subsequent Procedures Related to Scapula	Return to Occupation			Arm, Shoulder, or Hand Pain			
			FF	ABD	ER	FF	ABD	ER		Yes	No, Unrelated to Shoulder	No, Due to Shoulder	None	Mild	Mod.	Severe
1	27	34	157/170	105/115	82/93	15/22	17/25	14/21		+				+		
2	38	11	166/180	117/105	70/73	12/16	10/9	10/13		+			+			
3	37	41	124/126	90/90	70/66	12/13	7/5	18/9				+			+	
4	8	58	No data	No data	No data	No data	No data	No data	LTF (<12 mos.)			+			+	
5	36	1	151/157	90/92	49/35	19/28	12/15	15/25		+			+			
6	35	22	125/155	107/108	37/53	8/10	7/6	9/12	4 mo postop.: manipulation under anesthesia	+				+		
7	14	54	150/180	96/112	90/90	10/25	14/23	11/17	1 yr + 2 mo postop. (11/26/2004): reconstruction plate removal due to bursitis/irritati on		+					+
8	138	3	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only			+	
9	39	48	145/163	96/120	60/80	9/13	6/10	10/14	7 mo postop.: removal of exostosis of acromial spine and L shoulder scar revision due to discomfort and poor appearance	+						+
10	24	0	160/160	106/103	64/63	24/32	21/21	20/20		+			+			
11	—	—	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF
12	48	28	144/160	91/113	48/47	14/23	8/13	11/17	12/28/2006: scapular implant removal due to irritation (3 yr after original ORIF	+					+	
13	39	3	144/144	99/97	54/69	17/22	11/11	13/15		+			+			
14	30	0	180/180	130/133	84/80	31/34	20/21	21/24		+			+			
15	12	3	161/161	104/104	30/30	27/28	20/19	26/31		+			+			

16	—	—	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF
17	67	5	150/162	124/129	80/73	22/27	16/23	24/26		+				+		
18	67	4	156/169	96/86	63/66	10/4	7/4	9/9		+			+			
19	31	1	180/180	160/160	39/62	33/39	18/23	22/30		+			+			
20	6	20	170/170	130/130	75/80	23/33	20/32	20/27	LTF (<12 mo)	+				+		
21	23	14	169/169	110/106	85/92	23/24	12/14	19/23		+					+	
22	37	2	160/162	100/100	70/97	30/35	22/20	14/26		+			+			
23	35	41	135/145	84/110	53/63	7/10	6/9	9/12	10.5 mo postop.: removal of superomedial reconstruction plate	+				+		
24	122	8	150/150	135/132	45/48	16/17	18/18	21/21		+					+	
25	31	2	155/154	98/98	83/69	14/17	12/12	19/19		+			+			
26	24	1	152/155	95/81	67/70	20/26	10/11	17/20		+			+			
27	46	12	161/156	95/102	50/85	19/22	17/15	15/25	3.5 mo postop.: screw removal secondary to possible intra-articular fixation; manipulation under anesthesia	+				+		
28	25	10	175/179	109/114	84/75	23/23	18/15	25/27		+				+		
29	12	9	140/160	92/95	88/80	15/23	6/9	15/31	37 days postop.: joint manipulation under anesthesia and removal of hook plate	No data	No data	No data	+			
30	—	—	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF
31	70	3	158/162	107/102	103/106	23/25	17/18	18/20		+			+			
32	62	0	165/171	127/132	89/81	29/29	16/22	30/32		+			+			
33	—	—	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF
34	15	23	153/153	83/85	80/83	17/19	10/11	16/17			+				+	
35	13	13	142/138	129/130	70/84	9/11	8/8	9/11			+				+	
36	—	—	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF
37	—	—	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF
38	31	9	143/137	80/80	49/44	19/20	19/19	19/17		No data	No data	No data		+		
39	8	1	160/168	98/98	66/59	24/26	17/17	21/24	LTF (<12 mo)		+			+		
40	—	—	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF						

41	33	0	154/163	105/108	69/71	24/26	16/19	21/27		+			+			
42	18	13	136/150	107/110	65/83	16/19	11/9	20/23		+				+		
43	37	4	182/175	132/136	72/72	37/35	28/29	39/41			+			+		
44	19	12	150/140	79/87	62/74	20/28	14/17	21/28		No data	No data	No data		+		
45	14	2	153/151	82/86	77/85	14/15	12/13	18/22		+			+			
46	25	0	135/146	120/78	80/44	22/16	18/16	27/19	Cerebral palsy affecting R upper extremity; patient fell at 6 wk after ORIF of scapula and refractured scapula, implants intact, managed conservatively	+			+			
47	—	—	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF	LTF
48	26	24	156/156	96/96	68/68	22/23	19/16	27/31		+					+	
49	25	3	172/166	86/95	55/40	30/28	20/23	28/30		+			+			
50	17	8	153/153	97/97	67/64	30/35	18/26	26/28		+			+			
51	13	0	146/159	114/114	44/55	12/20	11/15	16/26		+			+			
52	19	9	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only	DASH only
53	13	0	170/170	120/115	70/78	27/28	18/19	27/30		+			+			
54	23	4	DASH only										+			
55	12	0	165/160	105/102	98/102	24/28	17/17	29/32		+			+			
56	15	0	188/188	136/142	18/18	24/27	17/21	23/29			+		+			
57	12	52	142/142	102/105	66/68	21/24	14/18	29/34			+				+	
58	6	3	144/148	108/112	52/60	17/26	19/25	23/33	LTF (<12 mos.)	+			+			
59	31	52	60/130	70/110	30/65	7/17	6/11	11/21		+						+
60	24	1	175/175	123/123	60/70	22/25	14/18	22/28		+			+			
61	12	2	174/174	134/122	90/90	21/22	16/18	20/24		+			+			
Mean/ total‡	33		154/159	106/108	66/70	20/23	14/16	19/23		36	6	1	26	10	9	3

*DASH = Disabilities of the Arm, Shoulder and Hand; FF = forward flexion; ABD = abduction; ER = external rotation; and LTF = lost to follow-up. †1 lb of force = 4.45 N. ‡Totals are only for those followed for ≥12 months.