Fig. E-1

Operative photograph showing the suture bridge technique for a 3-cm rotator cuff repair.
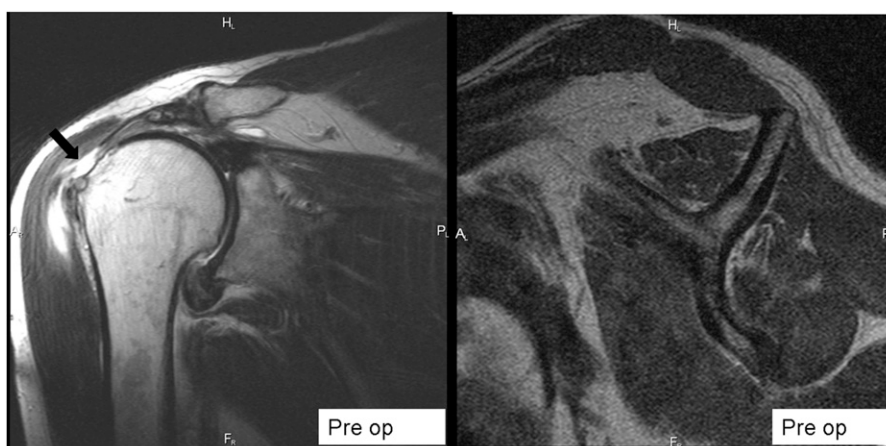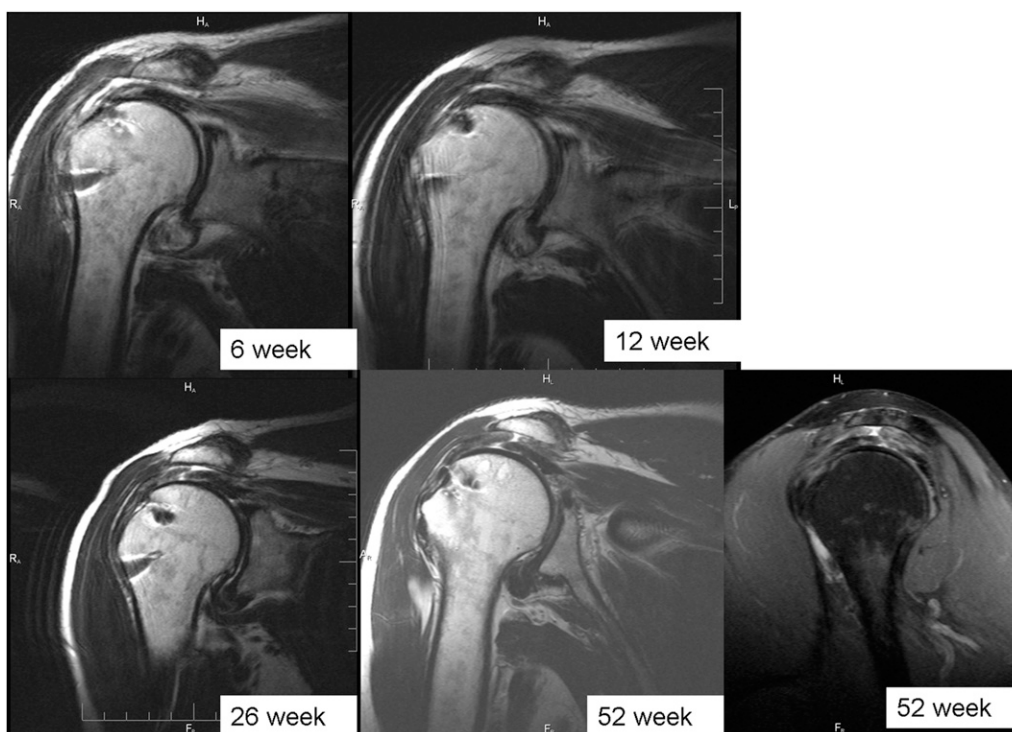
Fig. E-2A

Fig. E-2B

MRIs of a patient with an intact repair. **Fig. E-2A** T2-weighted images in the coronal and sagittal planes showing the mid-muscle section before repair of a large 4-cm tear (arrow) involving the supraspinatus and infraspinatus with grade-II fatty infiltration of both muscles. **Fig. E-2B** T2-weighted coronal views through the area of the rotator cuff repair showing the medial and lateral anchors at six, twelve, twenty-six, and fifty-two weeks postoperatively and a sagittal view at fifty-two weeks postoperatively.

Fig. E-2C

Fig. E-2C Sagittal oblique views obtained preoperatively and at fifty-two weeks postoperatively.
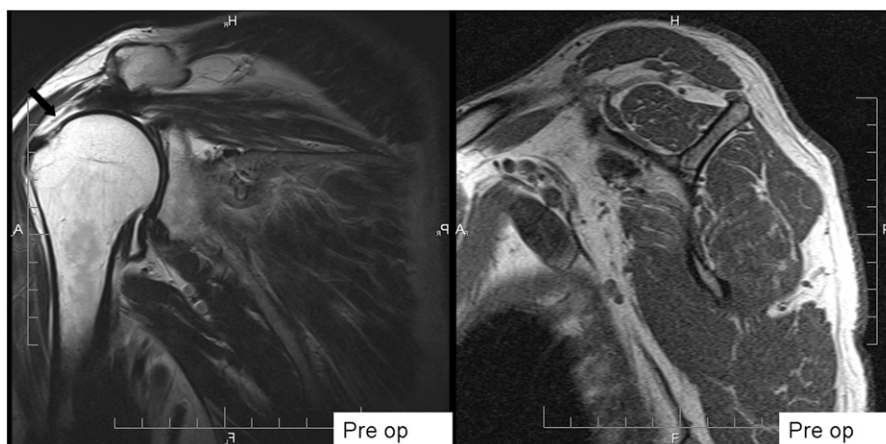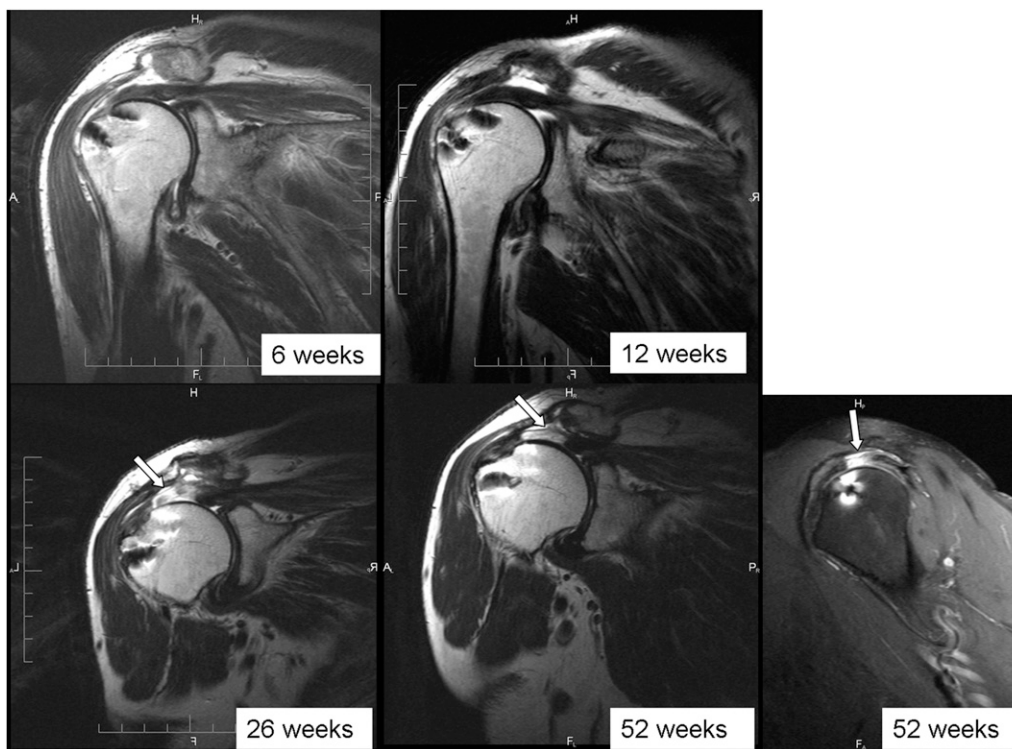
Fig. E-3A

Fig. E-3B

MRIs of a patient with a retear. **Fig. E-3A** T2-weighted images in the coronal and sagittal plane showing the mid-muscle section before repair of a large 2.5-cm tear (arrow) involving the supraspinatus and infraspinatus with grade-II fatty infiltration of both muscles. **Fig. E-3B** T2-weighted coronal views through the area of the rotator cuff repair showing the medial and lateral anchors at six, twelve, twenty-six, and fifty-two weeks postoperatively and a sagittal view at fifty-two weeks postoperatively. A retear is noted on the twenty-six-week postoperative image but was not seen at twelve weeks after surgery.
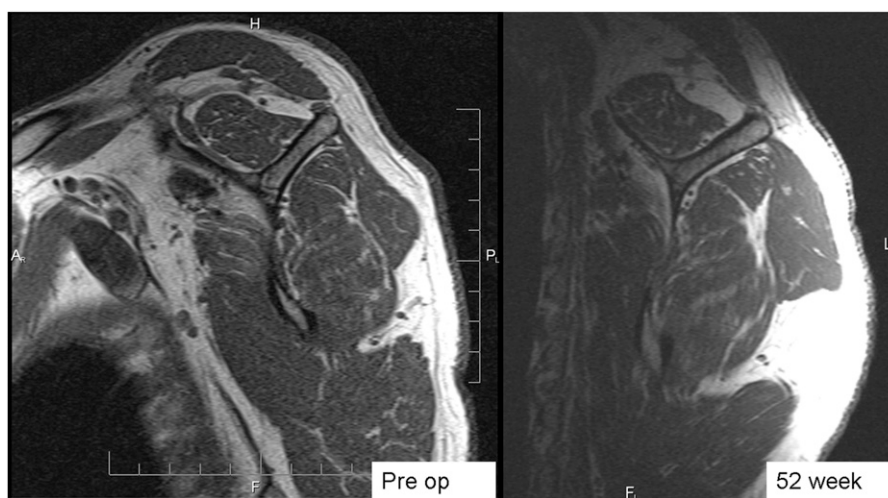
Fig. E-3C

Fig. E-3C Sagittal oblique views obtained preoperatively and fifty-two weeks postoperatively.

TABLE E-1 Surgical Characteristics by Outcome*		
Characteristic	Retear (N = 19)	Intact (N = 94)
Intraoperative tear size *(cm)*		
Mean (stand. dev.)	2.51 (0.864)	2.28 (0.748)
Min. (med.) max.	1.0 (2.50) 4.0	1.0 (2.00) 4.5
Shape of tear *(no. [%])*		
Crescent	15 (17%)	73 (83%)
L	1 (78%)	12 (92%)
Other	0	0
Reverse L	2 (25%)	6 (75%)
U	1 (25%)	3 (75%)
Other procedure performed *(no. [%])*		
Acromioplasty	14 (15%)	82 (85%)
Biceps debridement	2 (25%)	6 (75%)
Biceps release	3 (23%)	10 (77%)
Biceps tenodesis	1 (11%)	8 (89%)
Bursectomy	10 (13%)	69 (87%)
Coracoacromial lig. release	8 (20%)	33 (80%)
Distal clavicle resection	3 (18%)	14 (82%)
Labral debridement	2 (8%)	22 (92%)
Margin convergence	3 (33%)	6 (67%)
Subacromial decompression	14 (16%)	75 (84%)
No. of suture anchors		
Mean (stand. dev.)	2.2 (0.92)	2.0 (0.61)
Min. (med.) max.	1 (2.0) 4	1 (2.0) 4
No. of transosseous anchors		
Mean (stand. dev.)	1.8 (0.63)	1.9 (0.60)
Min. (med.) max.	1 (2.0) 3	1 (2.0) 3
Assessment of tension *(no. [%])*		
Tension	4 (19%)	17 (81%)
Tension-free	15 (16%)	77 (84%)

*The n values for the percentages are the sum of each row.

TABLE E-2 Penn Shoulder Scores by Outcome

Penn Shoulder Score	Retear (N = 19)	Intact (N = 94)
Preop. *(points)*		
Pain (max. score 30 points = no pain)		
Mean (stand. dev.)	15.8 (6.15)	15.0 (6.02)
Min. (med.) max.	4 (16.5) 29	0 (15.0) 28
Satisfaction (max. score 10 points)		
Mean (stand. dev.)	2.3 (2.56)	1.7 (2.14)
Min. (med.) max.	0 (2.0) 9	0 (1.0) 8
Function (max. score 60 points)		
Mean (stand. dev.)	31.23 (12.816)	30.76 (10.806)
Min. (med.) max.	8.4 (30.00) 56.0	3.0 (31.29) 53.0
Total (max. score 100 points)		
Mean (stand. dev.)	49.34 (19.809)	47.47 (16.451)
Min. (med.) max.	12.4 (47.00) 93.0	3.0 (48.43) 82.0
52 wk postop. *(points)*		
Pain (max. score 30 points = no pain)		
Mean (stand. dev.)	26.2 (4.55)	28.3 (3.05)
Min. (med.) max.	16 (27.5) 30	7 (29.0) 30
Satisfaction (max. score 10 points)		
Mean (stand. dev.)	7.9 (2.14)	9.1 (1.74)
Min. (med.) max.	3 (9.0) 10	2 (10.0) 10
Function (max. score 60 points)		
Mean (stand. dev.)	52.87 (7.146)	55.95 (5.395)
Min. (med.) max.	34.0 (54.37) 60.0	30.0 (58.00) 60.0
Total (max. score 100 points)		
Mean (stand. dev.)	87.00 (12.005)	93.31 (9.411)
Min. (med.) max.	67.0 (89.00) 100.0	40.0 (96.89) 100.0

TABLE E-3 Normalized Constant-Murley Shoulder Scores by Outcome

Characteristic	Retear (N = 19)	Intact (N = 94)
Preop. *(points)*		
Mean (stand. dev.)	60.2 (19.09)	61.5 (19.61)
Min. (med.) max.	29 (60.4) 89	18 (64.2) 92
52 wk postop. *(points)*		
Mean (stand. dev.)	88.0 (7.63)	95.2 (11.14)
Min. (med.) max.	76 (86.5) 102	48 (95.9) 119

TABLE E-4 VAS Score for Pain by Outcome		
	Retear (N = 19)	Intact (N = 94)
Preop.		
Mean (stand. dev.)	55.7 (26.77)	55.3 (25.11)
Min. (med.) max.	5 (58.0) 90	6 (60.0) 100
52 wk postop.		
Mean (stand. dev.)	13.3 (18.51)	4.3 (11.57)
Min. (med.) max.	0 (7.0) 56	0 (0.0) 73

TABLE E-5 Detailed Protocol Parameters for MRI (1.5 or 3.0 T)*	
Oblique sagittal T1-weighted SE	
Slice (mm)	3
Gap (mm)	1
TR (ms)	450-550
TE (ms)	8-15
No. of excitations (acquisitions)	2
Matrix	512 × 256 (frequency phase)
FOV (cm)	16
Bandwidth (Hz/pixel)	122-160
Oblique sagittal fat-saturated proton-density-weighted FSE	
Slice (mm)	3
Gap (mm)	1
TR (ms)	2800-3200
TE (ms)	30-40
No. of excitations (acquisitions)	2
Matrix	512 × 256 (frequency phase)
FOV (cm)	16
Bandwidth (Hz/pixel)	122-160
ETL (turbo factor)	7-11
Fat saturation	On
Oblique coronal T2-weighted FSE	
Slice (mm)	3
Gap (mm)	1
TR (ms)	2800-3200
TE (ms)	80-90
No. of excitations (acquisitions)	2
Matrix	512 × 256 (frequency phase)
FOV (cm)	16
Bandwidth (Hz/pixel)	122-160
ETL (turbo factor)	7-11
Oblique coronal fat-saturated proton-density-weighed FSE	
Slice (mm)	3
Gap (mm)	1
TR (ms)	2800-3200
TE (ms)	20-25
No. of excitations (acquisitions)	2
Matrix	512 × 256 (frequency phase)
FOV (cm)	16
Bandwidth (Hz/pixel)	122-160
ETL (turbo factor)	7-11
Fat saturation	On
Axial fat-saturated protein-density-weighted FSE	
Slice (mm)	3
Gap (mm)	1
TR (ms)	2800-3200
TE (ms)	30
No. of excitations (acquisitions)	3
Matrix	512 × 256 (frequency phase)
FOV (cm)	16
Bandwidth (Hz/pixel)	122-160
ETL (turbo factor)	7-11
Fat saturation	On
*SE = spin echo, TR = repetition time, TE = echo time, FOV = field of view, FSE = fast spin echo, and ETL = echo train length.	