

Appendix Table A1

SCR	Year	Type of Graft	Source of Graft	Indication	Contradiction	Graft Size	Graft Thickness	Number of Suture Anchors	
								<i>The superior glenoid</i>	<i>The greater tuberosity</i>
Mihata et al.	2013	Autograft	Fascia lata	(1) irreparable massive RCT	(1) severe bone deformity such as Hamada classification type V (2) severe superior migration of the humeral head that does not move by traction of the arm (3) cervical nerve palsy, axillary nerve palsy (4) deltoid muscle dysfunction (5) infection	6.1 cm medial-lateral and 3.0 cm antero-posterior	6 to 8 mm (folded twice or thrice)	2	2
Lim et al.	2018	Autograft	Fascia lata	(1) large-to-massive RCT with medial retraction (2) Hamada Grade 1,2	/	NR	At least 6 mm(folded in two layers)	2 - 3	NR
Lee et al.	2018	Autograft/Allograft	Fascia lata/Human dermal(MegaDerm)	(1) large-to-massive RCT (2) failure of non-operative treatment (3) age < 70 years (4) irreparable RCT (5) patients with a need for active performance	(1) a history of fractures or operations on the affected shoulder (2) arthritic changes of the glenohumeral joint on radiographs (3) age > 70 years (4) patients without the need for active performance.	NR	At least 6-mm thick (folded in two layers)	2 - 3	NR

Pennington et al.	2018	Allograft	Acellular dermal(nr)	(1) irreparable RCT (2) failure of all previous treatment (3) unacceptable pain levels and loss of function (4) patients who were deemed too young or too active to undergo reverse total shoulder arthroplasty	/	NR	3.0mm (2.75-3.25 mm)	3	2
Denard et al.	2018	Allograft	Human dermal(NR)	(1) irreparable massive RCT (2) irreparable subscapularis tear, (3) active infection (4) neurologic pathology limiting shoulder function.	(1) revision SCR	Extended 5 mm medially, anteriorly, and posteriorly Extended 10 mm laterally	1 mm in 5 cases 2 mm in 2 cases 3 mm in 52 cases	2.3 (range, 2-4)	3.9 (range, 2-5).

GB	Year	Type of Graft	Source of Graft	Indication	Contradiction	Graft Size	Graft Thickness	Number of Suture Anchors <i>The greater tuberosity</i>
Mori et al.	2015	Autograft	Fascia lata	(1) irreparable large-to-massive RCT(\geq 3 cm) (2) patients with pain and functional disability refractory to nonsurgical treatment (3) Goutallier stage 3 or 4 fatty degeneration of the supraspinatus on the preoperative MRI scan (4) an intact teres minor tendon (5) absence of drop-arm sign	(1) Goutallier stage 1 or 2 fatty degeneration of the supraspinatus on the preoperative MRI scan (2) more than 75% fatty degeneration of the infraspinatus on the sagittal view (3) history of nerve palsy (4) prior surgery (5) arthritic changes in the glenohumeral joint (6) history of diabetes (7) full subscapularis tendon (SSC) tears (8) high-demand patients who performed strenuous work requiring lifting more than 75 pounds on a regular basis	NR	NR	NR
Rhee et al.	2008	Autograft	Biceps tendon	(1) massive RCT(>5 cm)	(1) superior labral anterior posterior (SLAP) lesion (2) acromioclavicular arthritis that required distal clavicle resection (3) progressive glenohumeral arthritis (4) neural damage (5) history of shoulder surgery	NR	NR	Open: 2.3 (range, 2-3) Arthroscopic: 2.15 (range, 2-3)

Author	Year	Graft Type	Donor Source	Inclusion Criteria	Exclusion Criteria	Comparison	Outcome	Notes	Level of Evidence	
Sano et al.	2010	Autograft	Biceps tendon	(1) irreparable massive RCT (involving at least two tendon tears concomitant with LHB tendon pathology)		/	If the harvested LHB tendon strip was smaller than the residual cuff defect, it was split into two layers	NR	2	
Cho et al.	2009	Autograft	Biceps graft	(1) massive RCT(>5 cm)	(1) SLAP lesions (2) acromioclavicular arthritis that required distal clavicle resection (3) progressive glenohumeral arthritis (4) neural damage (5) history of shoulder surgery			NR	NR	2 - 3
Rhee et al.	2017	Autograft	LHBT	(1) irreparable massive RCT				NR	NR	2
		Allograft	Human dermal(MegaDerm,CGDerm)			/	1-2 cm larger than the defect		NR	2
Pandey et al.	2016	Allograft	Human dermal(GraftJacket)	(1) massive rotator cuff tears (>5 cm) (2) failure of a minimum 6 months' nonoperative management	(1) history of shoulder surgery (2) Established glenohumeral osteoarthritis (3) reparable RCT			NR	NR	2
Varvitsiotis et al.	2016	Allograft	Fascia lata	(1) irreparable massive RCT (> 5 cm or involve 2 tendons [or both])	(1) advanced glenohumeral arthritis			NR	Folded in three layers	5
Jones and Snyder	2015	Allograft	Human dermal(GraftJacket)	(1) massive irreparable RCT	(1) significant glenohumeral osteoarthritis (2) active infection (3) a deficient medial stump of rotator cuff			NR	NR	2

Author	Year	Allograft	Human	Inclusion Criteria	Exclusion Criteria	Primary Outcome	Secondary Outcome	Number of Patients
Kokkalis et al.	2014	Allograft	GraftJacket	(1) massive RCT(> 5 cm involving both the supraspinatus and infraspinatus tendons)	(4) immunologic compromise (5) incompetent deltoid function (6) patient that is medically unfit for such an operation due to comorbid conditions	NR	NR	3 (range, 2-5)
Gupta et al.	2012	Allograft	Human dermal(GraftJacket)	(1) massive RCT(>5 cm) (2) failure of a minimum 6 months' nonoperative management (3) the ability to fully participate in the postoperative rehabilitation protocol	(1) glenohumeral arthritis (2) rotator cuff tear arthropathy (3) greater than 50% fatty infiltration of the supraspinatus muscle based on the T1-weighted oblique sagittal MRI view (4) prior rotator cuff repair (5) reparable RCT (6) an inability to participate in the postoperative rehabilitation protocol	NR	NR	2 – 3
Bond et al.	2008	Allograft	Human dermal(GraftJacket)	(1) massive RCT (> 5 cm or involve 2 tendons [or both])	/	NR	1.02 mm	3 - 5
Seker et al.	2018	Synthetic	PTFE patch	(1) irreparable large-to-massive RCT	/	NR	NR	3 (range, 1-7)
Ranebo et al.	2018	Synthetic	Dacron	(1) irreparable large-to-massive rotator cuff tear (2) pain and loss of function	/	NR	NR	A screw and washer was used

				(3) absence of glenohumeral osteoarthritis				
Nada et al.	2010	Synthetic	Polyester(Dacron)	(1) massive RCT (> 5 cm or involve 2 tendons [or both]) (2) unacceptable pain and disability after failure of conservative treatment	(1) cuff tear arthropathy with stiffness, (2) incompetent deltoid function (3) a history of infection (4) any neurological condition affecting the function of the shoulder girdle	500 mm × 10 mm	NR	2
Audenaert et al.	2006	Synthetic	Polyester(Mersilene mesh)	(1) massive RCT (at least 2 tendons) and > 4 cm in maximal diameter	(1) revision repairs	NR	Graft thickness: 2 mm (folded in eight layers)	2
Neumann et al.	2017	Xenograft	Xenograft Porcine dermal(Permacol)	(1) massive RCT(>5 cm involving both the supraspinatus and infraspinatus tendons) (2) irreparable RCT (3) failure of nonoperative management for a minimum of 6 months (4) an ability to participate in postoperative physical therapy	(1) glenohumeral arthritis (2) RCT arthropathy (3) Fuchs grade 3 (supraspinatus muscle with 50% fatty infiltration) or greater on T1-weighted oblique sagittal MRI	5*5 cm or 3*3 cm	NR	3
Gupta et al.	2013	Xenograft	Xenograft Porcine dermal(Conexa)	(1) massive RCT (> 5 cm or involve supraspinatus and infraspinatus tendons [or both]) (2) failure of a minimum of 6 months of nonoperative management, (3) irreparable RCT (4) the ability to fully participate in the	(1) glenohumeral arthritis (2) rotator cuff tear arthropathy (AHI<7 mm on anterior-posterior radiograph with evidence of fullthickness cartilage loss on MRI) (3) greater than 50% fatty infiltration of the supraspinatus or infraspinatus muscle based on the T1-weighted oblique sagittal MRI	NR	NR	2 - 3

				postoperative rehabilitation protocol	(4) reparable RCT			
					(5) an inability to participate in the postoperative rehabilitation protocol.			
Badhe et al.	2008	Xenograft	Xenograft Porcine dermal(Permac ol)	(1) massive RCT(>5 cm and involve both the supraspinatus and infraspinatus tendons) (2) failure of nonoperative management	/	NR	NR	2

SCR, superior capsule reconstruction; GB, graft bridging; NR, not reported.