

## Minimum 2-Year Outcomes after Resection Arthroplasty of the Sternoclavicular Joint

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**Objectives:** Injuries of the sternoclavicular (SC) joint are rare and are usually caused by high energy mechanisms, such as collision sports or motor vehicle accidents. The aims of this study were to assess functional outcomes and return to sport following resection arthroplasty for osteoarthritis of the sternoclavicular joint.

**Methods:** 20 SC joints (18 patients) had undergone resection arthroplasty of up to a maximum of 10mm of the medial end of the clavicle for painful osteoarthritis, without instability, between November 2006 and November 2013. Patients at least two years out from surgery and living in the U.S. were included in the study. This was an IRB-approved retrospective outcomes study with prospectively collected data. Preoperative and postoperative function and pain levels were assessed with the ASES, SF-12 PCS, QuickDASH and SANE scores. Additionally, the level of sport intensity and the pain levels during activities of daily living, work and recreation were assessed pre- and postoperatively. The results of the functional outcome scores were normally distributed and were compared with the paired sample t-test. The results of pain level assessment were not normally distributed and were compared with the paired Wilcoxon signed-rank test.

**Results:** 19 SC joints in 17 patients (9 female, 8 male; mean age at time of surgery 39.5±17.1 years) met inclusion criteria. One patient refused participation in the study. Two patients (10.5%) were considered failures as they required additional SC joint surgery (one patient with revision resection of the medial clavicle for persistent symptoms and one patient with secondary figure-of-eight graft stabilization for instability). Minimum 2-year outcomes data were available for 14 of the remaining 16 SC joints (88%). The mean time to follow-up was 3.1 years (range, 2.0-8.8 years). The ASES score, QuickDASH, and pain levels demonstrated significant improvement postoperatively ( $p < 0.05$ ; Table 1). No significant differences were observed between the pre- and postoperative SANE and SF-12 PCS scores ( $p > 0.05$ ; Table 1). All patients (100%,  $n=11$ ) that answered the question were able to return to sport, with 64% of these patients ( $n=7$ ) returning to their pre-injury level or slightly below.

**Conclusion:** Resection arthroplasty of up to a maximum of 10mm of the medial end of the clavicle in patients with osteoarthritis of the SC joint results in significant functional improvement, pain reduction, and a high rate of return to sport at mid-term follow-up.

Comparison of pre- and postoperative outcome parameters (*=significance)			
Outcome measures	Preoperative	Postoperative	Significance
ASES score	58.4±18.6	81.1±13.8	$p=0.025^*$
QuickDASH	41.4±11.3	15.9±12.3	$p=0.005^*$
SANE	65.7±16.5	83.1±17.2	$p=0.075$
SF-12 PCS	40.8±10.3	48.1±8.7	$p=0.072$
Median pain during activities of daily living	2 (1-3)	1 (0-3)	$p=0.018^*$
Median pain during work	2 (1-3)	1 (0-2)	$p=0.04^*$
Median pain during recreation	3 (2-3)	1 (0-3)	$p=0.026^*$

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