

Paper #145

Effect of Preoperative Subacromial Injection on Postoperative Clinical Outcome in Patients with Arthroscopic Rotator Cuff Repair

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Summary:

Propensity score analysis showed that subacromial injection accelerated functional recovery by 6 months after arthroscopic cuff repair, compared with that in patients without injection before surgery.

Abstract:

Introduction

Arthroscopic rotator cuff repair (ARCR) generally yields acceptable clinical results. Since the subacromial bursa is believed to be main source associated with shoulder pain in rotator cuff tears, subacromial injection is frequently used before surgery; however, relationship between this injection and clinical outcome after surgery remains unclarified. Therefore, the purpose of the present study was to examine effects of preoperative subacromial injection on postoperative clinical outcome in patients with ARCR.

Methods

Among 128 patients who underwent ARCR, we included 72 shoulders in 72 patients whose progress was monitored for >1 years postoperatively. According to the presence of subacromial injection before surgery, they were divided into 2 groups: Injection group (42 patients with injection) and Non-injection group (30 patients without injection). The following agents were used as the subacromial injection: (1) Hyaluronic acid (HA) in 11 patients; (2) HA with local anesthetics in 20 patients; (3) either HA or steroid with local anesthetics in 11 patients. Functional outcome measures comprised University of California, Los Angeles (UCLA) score, Constant score, Japanese Orthopaedic Association (JOA) score. Structural evaluation was performed by magnetic resonance imaging. Statistically, univariate analysis was performed to obtain variables with p-value less than 0.01; then, propensity score analysis was utilized, adjusting the preoperative and postoperative confounding factors. Statistical significance was set $P < 0.05$.

Results

The JOA / UCLA / Constant scores in all patients significantly improved at 1 years postoperatively ($p < 0.05$, respectively). Univariate analysis indicated that (1): The subacromial injection appeared to be performed in patients with worse function preoperatively and (2): Postoperative function was seemed to be relatively improved in the Injection group.

To further confirm the data from univariate analysis, propensity score analysis was then performed, and demonstrated that there was significant difference in the following factors: At postoperative (PO) 2 months, JOA /

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UCLA / constant score, pain level (rest / night), and elevation range; at PO 3 months, JOA / UCLA score, pain level (night), internal rotation range, and abduction strength; at PO 6 months, JOA score and internal rotation range . Thus, early postoperative functional outcome was relatively improved in the Injection group compared with the Non-injection group.

There was no significant difference in preoperative NSAID use and postoperative re-tear rate between both groups. Infection was not observed throughout the periods evaluated. In subset analysis in Injection group, no significant difference in preoperative and postoperative factors was noted among the agents used in the present study.

Conclusion

In this study, the subacromial injection was performed in patients with worse function before ARCR; despite, propensity score analysis successfully demonstrated that functional outcome by 6 months after surgery was relatively improved in patients with this injection, compared with patients without injection before surgery.