Editorial

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Does steroid injection help patient rehabilitation after arthroscopic rotator cuff repair?

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There are many factors to consider when treating rotator cuff tendinosis patients. Whether it is deciding between surgical repair or conservative treatment or determining the timing of a given method, such details should be discussed and chosen carefully. Once a surgical option is decided on, arthroscopic rotator cuff repair (RCR) is a standard option for improving postoperative pain and time to recovery compared to the open repair technique [1]. Studies show that successful healing leads to better strength and functional outcomes than incomplete healing [2]. Even though successful repair and healing of torn tendons influence patient outcome, a patient's preoperative status and postoperative rehabilitation are equally important. Although failed repair does not always correlate with low clinical results, as a surgeon, one should minimize any risk factors that may compromise the likelihood of successful treatment. Predisposing factors such as the patient's age, tear size, and tendon quality are unmodifiable, but we can optimize the rehabilitation process postoperatively. To improve the healing process for a repaired tendon, the patient is routinely immobilized for a certain period (for how long is another topic of discussion). This immobilization in turn can result in postoperative complications, which can act as sources of pain and stiffness [3]. Despite its possibility of side effects, postoperative subacromial steroid injections can reduce pain and stiffness [4].

In "Effects of steroid injection during rehabilitation after arthroscopic rotator cuff repair [5]," the authors compared the clinical outcomes of patients who received steroid injections with patients who did not. The pain and range of motion (ROM) recovery at 3-, 6-, and 24-month follow-up and functional score at 24-month follow-up were compared. In this study, a patient group who received ultrasound-guided subacromial steroid injection at 4 or 6 weeks after arthroscopic RCR exhibited reduced pain and ROM recovery time until three months after surgery, but there were no significant differences between the groups during further follow-up.

Adverse effects of steroid injections into the rotator cuff include infection, cartilage toxicity, and inhibiting normal inflammatory reactions that may hinder rotator cuff healing [6]. In vitro studies and retrospective studies demonstrated that corticosteroid exposure can result in increased failure of tendon healing, including poorer results with increased retears [7]. Compagnoni and Randelli [8] and Lubowitz et al. [9] also warned about the correlation between retears and infections associated with steroid injections perioperatively. In particular, the authors of "Effects of steroid injection during rehabilitation after arthroscopic rotator cuff repair [5]" chose the timing (4–6 weeks postoperatively) and type (ropivacaine) of injection with this in mind, in an effort to avoid normal inflammatory phases and cartilage toxicity. Similar

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studies showed that perioperative injections can improve surgical results. Kim and Jung [10] showed that intraarticular steroid injection administered at 6 weeks postoperatively successfully reduced shoulder stiffness. Nakamura et al. [11] showed that preoperative hyaluronic acid injection improved functional outcomes.

Perioperative steroid injections for rotator cuff tear repairs is a highly debatable topic considering the possible side-effects. However, this does not mean steroid injection should be discarded altogether. Data regarding possible adverse effects can aid in properly weighing risk-benefit for RCR patients. As shown in the current study, short-term improvement in pain and ROM can greatly affect patient satisfaction and early recovery to daily life. Further studies considering prospective designs with more investigation into the optimal dosage, timing, and regimen of injection would be helpful.

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