The Effect of Corticosteroid Injection After Arthroscopic Rotator Cuff Repair on 2 Year Outcomes

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Background

- Corticosteroid injections (CSI) are frequently used as a part of a comprehensive treatment plan for patients with shoulder pain.

- Patients are occasionally given CSI post-operatively after rotator cuff repair (RCR) to reduce pain and improve tolerance to physical therapy (to ‘get over the hump’). The 3-6 month post-op period seems to be a sensitive and important phase of post-operative recovery where the focus is on return of function.

- There is concern that CSIs may alter the healing environment and increase the likelihood of re-tear.

Aims of our Study

- Aim 1 (Primary): Compare 2-year ASES, infections, and reoperation between patients who required a post-RCR CSI to those who had no injection.

- Aim 2 (Secondary Subset Analysis): Compare ASES at different time points (3mo, 6mo, 12mo, 2yr), infections, and reoperation between patients who required a post-RCR CSI ONLY 3-6 MONTHS POST-OPERATIVELY to those who had no injection.
  - *Time window of interest – CSI provided during this window with the goal of advancing post-operative recovery by reducing barrier of pain*

Methods

- 288 patients who completed both pre-operative and two-year follow-up PROMs after arthroscopic RCR were identified and retrospectively reviewed.

- Aim 1: 48 of the 288 patients required a post-operative CSI
  - *Injection range: 38 – 421 days following surgery*

- Aim 2: 14 of the 288 patients required a CSI in the 3-6 month post-operative window

- Post-operative CSI cohorts were matched 3:1 to patients that received no post-operative injection based on age (+/- 5 years), sex, and surgeon confirmed tear size (small/medium versus large/massive).

Methods

- Aim 1 consisted of 48 patients that received a CSI and 144 matched controls that did not (3:1 Match)
- Aim 2 consisted of 14 patients that received a CSI in 3-6 month window and 42 matched controls that did not (3:1 Match)
- ANCOVAs compared ASES scores at 2 years for the primary analysis (Aim 1) and at 3, 6, 12 months and 2 years for the secondary analysis (Aim 2), controlling for Worker's Compensation status, pre-operative VR-12 Mental Component Score, and pre-operative ASES.
- Reoperation rates were analyzed by Chi Square. Statistical significance was determined a priori with an alpha value of 0.05.

Results: Aim 1

- Patients in CSI group had modestly lower ASES scores at 2 years with estimated marginal means (EMM) of 79 (73,85) for CSI and 84 (79,90) for no CSI (p=0.001)
  - Difference significantly lower than RCR ASES MCID
- There was no difference in change in ASES from pre-op to 2-year post-op ASES (p=0.237) indicating those requiring CSI had a higher level of disability pre-operatively
- There was a significant difference in reoperation rates between groups
  - No CSI group: 0 reoperations
  - CSI group: 9 reoperations (19%; p<0.001).
- There were no post-operative infections in either group.

Results: Aim 2

- Modest difference in ASES between cohorts that approached significance at 3 months (p=0.092) and reached significance at 6 months (*p*=0.011)

- Modest difference remained at 1-year (*p*=0.067) before matching comparison cohort at 2-year follow-up (*p*=0.209)
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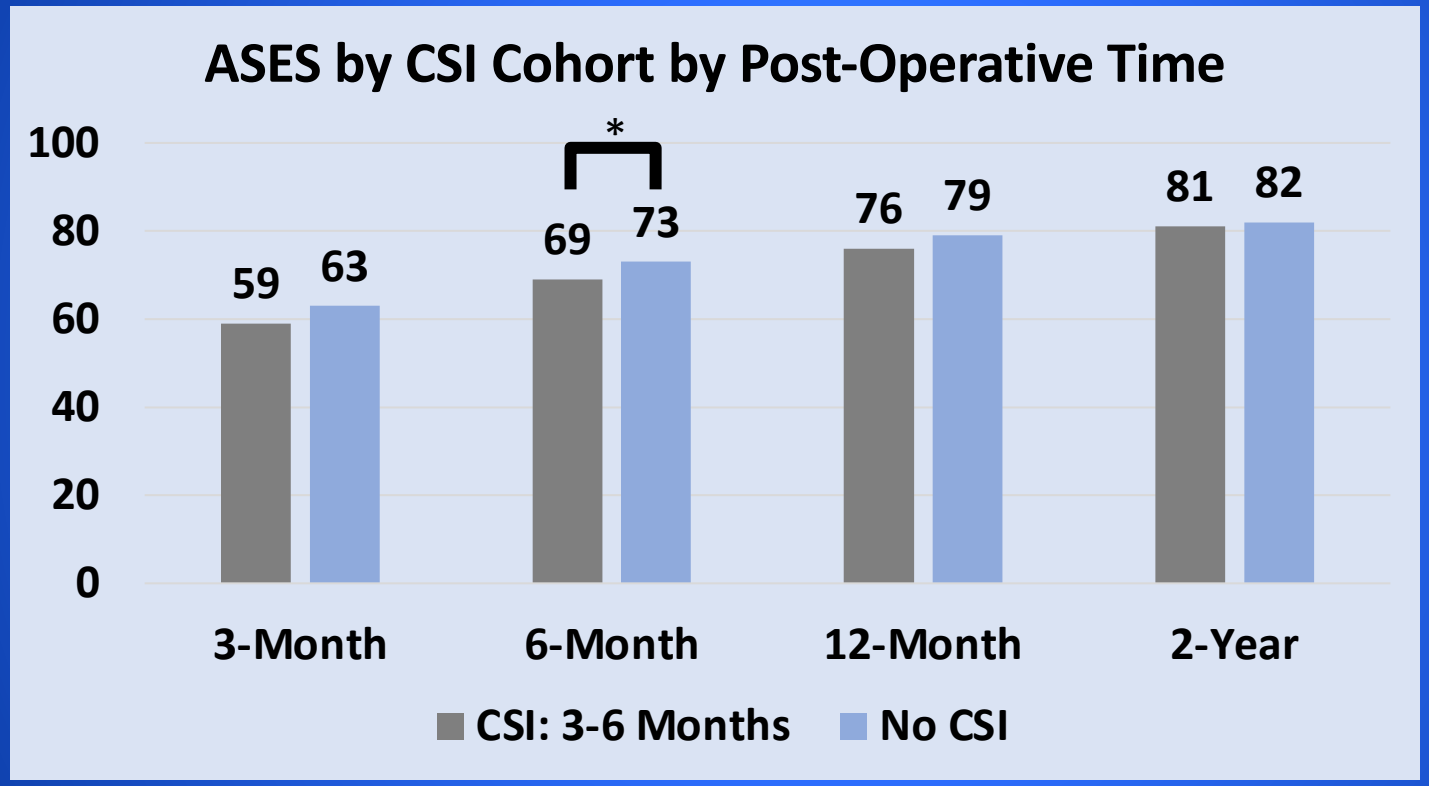
Results: Aim 2



Conclusion

- Patients who required a CSI at any point following arthroscopic RCR had clinically similar 2-year ASES compared to those who did not receive a CSI.
  - However, patients were more likely to undergo reoperation if they required CSI post-operatively (Control group n=0, Injection group n=9).
    - *Differences in reoperation rates may be partly explained by escalation of care (e.g., trial CSI) prior to potential repeat operation*
    - *CSI Reoperations Injection group: 4 for stiffness and 5 for conversion to RSA*
    - No infections occurred in either group.

- Patients who required a CSI in the 3–6-month window appeared to recover differently in the first 12 months but were able to achieve similar outcomes at 2 years.

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Thank you

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