ABSTRACT ASES 2024

Predicting good clinical outcomes after repair of recurrent rotator cuff tears: Revision Repair Predictive Score

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Introduction

We aimed to develop and validate a scoring system predictive of clinical outcomes at 2 years postoperatively after revision rotator cuff repair based on preoperative characteristics.

Material and methods

This retrospective multicenter study included 195 patients (mean age 55.1 years old) who underwent revision rotator cuff repair between July 2001 and December 2020.. All patients had a clinical evaluation including Constant Score (CS), Simple Shoulder Value (SSV) and Patient Satisfaction (PS) preoperatively and at minimum 2 years post-operatively.

Variables associated with clinical outcomes (CS, SSV, PS) in a multivariable logistic regression model were included in the scoring system.

Weigthing of these different variables in the scoring system was defined according to the association of these variables with 1, 2 or 3 of the clinical outcomes (CS, SSV, PS).

We used ROC curves to assess the ability to predict CS>70% and SSV>70% at 2 years post-operatively, according to Predictive Score. The area under the curve (AUC) and 95% confidence intervals were calculated.

We validated our scoring system on the entire series to determine the optimal cut-off value of the score to predict CS>70%, SSV>70% and PS in most of the patients at 2 years post-operatively.

Results

In a multivariate analysis, an isolated supraspinatus (SSP) tear was associated with higher CS (p=0.019), SSV (p=0.00018) and PS (p=0.004). Work-related tendon tears were associated with lower CS (p=0.0194) and SSV (p=0.0049). Female sex was associated with lower CS (p=0.0018) and manual work with lower SSV (p=0.046). Smoking and a delay from primary repair to revision repair >6 months were associated with lower PS (p=0.0485 and p=0.0195).

Weighting of these variables in the scoring system (ranging from 0 to 9 points) was defined as followed: 3 points in case of an isolated SSP tear, 2 points in case of non-work-related tendon tear. 1 point was allocated in the following situations: non-manual work, non-smoking, male sex, delay<6 months.

Our Predictive Score showed a good discriminative ability to predict CS>70% (AUC=0.72) and SSV>70% (AUC=0.73).

When Predictive Score was ≥6/9 points, Predictive Positive Value (PPV) was 80% to predict CS>70%, 91% to predict SSV>70% and 91% to predict PS, at 2 years post-operatively.

Discussion / Conclusion

This simple scoring system for patients with recurrent rotator cuff tear, based on 6 preoperative characteristics, accurately predicts good clinical outcome (CS≥70%, SSV≥70% and PS) at 2 years, after a revision rotator cuff repair.

The *Revision Repair Predictive Score* could be used to councel individual patients and identify those who might benefit the most from a revision repair.