INTRODUCTION
• Post-operative shoulder stiffness (POSS) is one of the most frequent adverse event (AE) after arthroscopic rotator cuff repair (ARCR)
• Predicting POSS occurrence supports physicians in closely monitoring high risk patients

OBJECTIVES
To update and validate a clinical prediction model for POSS using a large representative patient cohort (ARCR_Pred cohort)

METHODS
SETTING
Enrollment of 973 patients undergoing primary ARCR between June 2020 and November 2021 in 18 Swiss and one German orthopaedic tertiary care center (Figure 1).

OUTCOME
POSS defined and validated using a Delphi process as limitation in range of motion at 6 months, or a symptomatic stiff shoulder leading to deviation from routine postoperative management between 3 and 6 months.

STATISTICAL ANALYSIS
A logistic regression model was used. The full model was composed of 35 baseline factors. A backward elimination procedure was used to maximize the apparent and bootstrap validated area under the receiver-operating characteristics curve (AUC).

RESULTS
• Suggested POSS definition showed a high agreement rate between the 44 involved surgeons (88%)
• 105 patients (10.8%) out of 973 suffered from POSS
• The reduced model had a higher AUC after bootstrap validation (0.68 compared to 0.64) (Figure 2)
• 10 patient and diagnostic-related baseline factors composed the reduced model (Figure 3)

CONCLUSIONS
• POSS definition validated using a Delphi approach by 88% of the 44 surgeons involved in the Delphi process
• Female sex, riskier lifestyle, traumatic onset, longer symptom duration, worse baseline scores, pre-operative medication and higher working loads were associated with a higher risk of POSS
• Use of 6 weeks data and development of a user-friendly model presentation format are still required before potential implementation in the clinical routine

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Visit our ARCR_Pred website