Arthroscopic and open/mini-open rotator cuff repair: Ascertaining practice trends among recent fellowship trained orthopedic surgeons

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Disclosure

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We have no financial conflicts to disclose
Background

• The surgical management of rotator cuff repair (RCR) is performed either arthroscopically or by an open/mini-open technique

• Literature shows discrepancies over whether arthroscopic or open/mini-open techniques are more common for RCR (1-4)
Background

- A lack of objective and subjective clinical outcomes comparisons between the two techniques has led to practice patterns mainly based on surgeon preference (5-7)
- Fellowship training resources have been shown to influence practice patterns of rotator cuff repair (8)
Purpose

The two purposes of this study were to evaluate the practice pattern and assess the complication rate among fellowship trained Step II examinees of the American Board of Orthopedic Surgery (ABOS) for RCR from 2007-2017)
Methods

• The ABOS database was queried for arthroscopic (ICD code 29827) and open/mini-open (ICD codes: 23410, 23412) RCR performed from 2007-2017

• Data included in the database: procedure date, fellowship training of each surgeon, ICD (International Classification of Diseases) code, Current Procedural Terminology (CPT) surgical procedural codes, age, sex, and complications (anesthetic, medical, surgical, re-operation, re-admission)
Methods

- Analysis was performed to determine the number of RCRs performed over the 10-year period, and to determine the rate of both arthroscopic RCR and open/mini-open RCR as a percentage of total cases for three different fellowships (Sports Medicine, Shoulder & Elbow, Hand & Upper Extremity).

- Data was then analyzed for cumulative complication rates for each of the three fellowships.

- A further analysis within each of the 3 fellowships was done to compare complication rates between arthroscopic versus open/mini-open.
Results

- A total of 31,907 RCR were reported over the past 10 years (2007-2017).
- Percentage of RCR procedures performed using arthroscopic technique vs open/mini-open varied among surgeons who completed one fellowship.
Results

- Total complication rates varied among surgeons who completed one fellowship.
Results

- Surgeons completing one fellowship in either Sports Medicine, Shoulder & Elbow, Hand & Upper Extremity all had statistically significant lower complication rates in arthroscopy vs open technique. * = statistical significance (P < 0.05 chi squared analysis)

- Surgeons who completed 3 fellowships had a high total complication rate (20.2 %) as well as no statistically significant difference in complication rates between arthroscopic and open (p = 0.4)
Limitations

• Retrospective evaluation of a large database
• Selection bias with the open/mini-open technique used on larger and more difficult to repair rotator cuff tears in a more unhealthy patient population. No clinical information regarding patient medical history, cuff tear size or pre-surgical characteristics provided by ABOS
• Reporting bias as complications may not be consistently or uniformly reported across all of the applicants
Conclusions

• ABOS Step II examinees that completed a Sports Medicine fellowship reported the lowest complication rates, however not statistically less than Shoulder and Elbow or Hand and Upper Extremity fellowships.

• All 3 fellowships reported a statistically lower complication rate using arthroscopy compared to open/mini-open RCR over the past 10 years.

• Surgeons that completed 3 or more fellowships had a higher complication rate regardless of surgical technique.

• These results highlight a pattern favoring the use of arthroscopic RCR as well as a lower reported complication rate when compared to open/mini-open RCR.
References


