

Editorial Commentary: Indications for Shoulder SLAP Lesion Repair Versus Biceps Tenodesis Depend on Patient Age, Tear Type and Location, and Quality of Tissue



Michael D. Feldman, M.D., Associate Editor

Abstract: Whether to repair a shoulder SLAP lesion or perform a biceps tenodesis depends on a multitude of factors: patient age, activity or work level, type of SLAP tear, location of SLAP tear, and quality of labral tissue. Determining which procedure to perform does not have such a simple, one-size-fits-all solution. For patients younger than 40 years, repair of type 2 SLAP tears that do not directly affect the biceps anchor (i.e., those tears from the 12:30 clock-face position to the 2-o'clock position or from the 10-o'clock position to the 11:30 clock-face position) is generally successful. For tears at the biceps anchor in patients younger than 40 years, repair the SLAP tear but perform tenodesis of the biceps. For type 3 SLAP tears, debride the bucket-handle component and spare the biceps because it usually is not involved. For type 4 tears, perform tenodesis. In patients older than 40 years, type 2 and type 4 SLAP tears are predominantly treated with biceps tenodesis with debridement of the SLAP tear, if indicated. SLAP repair is rarely indicated in patients older than 40 years because the tissue is usually degenerative and frayed.

See related article on page 1802

In one of the most famous scenes (Act 3, Scene 1) of one of the most famous plays, William Shakespeare's *Hamlet*,¹ Hamlet cries out "to be, or not to be" as he contemplates death and suicide, bemoaning the pain and unfairness of life but acknowledging that the alternative might be worse. With a stretch of imagination and apologies to Shakespeare, these thoughts can be applied to the treatment of SLAP tears. Arthroscopic surgeons commonly face a dilemma when dealing with SLAP lesions: whether to "kill" the biceps and perform tenodesis, to repair the SLAP tear, or to do both.

To repair, or not to repair and perform tenodesis, that is the question:

"Whether 'tis nobler in the mind to suffer"

"The slings and arrows of unsuccessful surgery,"

"Or to place a shoulder against a sea of troubles"

"And by choosing wrong end it. To repair the SLAP lesion or to kill the biceps—to sleep,"

"No more; and by a sleep to say we end"

"The heartache of the decision"

"That we are heir to: 'tis a consummation"

"Devoutly to be wish'd. To repair, to tenotomize;"

"To perform tenodesis, perchance to cure—aye, there's the rub . . ."

The author reports the following potential conflicts of interest or sources of funding: M.D.F. receives travel expenses (editors meeting) from Arthroscopy, receives Orthopedic Learning Center travel expenses from AANA, and is an AANA committee member. Full ICMJE author disclosure forms are available for this article online, as [supplementary material](#).

© 2022 by the Arthroscopy Association of North America
0749-8063/2292/\$36.00

<https://doi.org/10.1016/j.arthro.2022.01.031>

Truong, Cevallos, Lansdown, Ma, Feeley, and Zhang,² in their article "Biceps Tenodesis Demonstrates Lower Reoperation Rates Compared to SLAP Repair for Treatment of SLAP Tears in a Large Cross-sectional Population," have tried to make this decision a little easier. By using the PearlDiver database between 2010 and 2017, Truong et al. were able to compare the results of SLAP repairs versus biceps tenodesis for the treatment of SLAP tears and note any trends in surgical treatment. The

results showed that the pendulum has shifted, with SLAP repair becoming less common and biceps tenodesis the preferred option (54% vs 46% in 2017), especially in patients older than 50 years. Additionally, arthroscopic and open biceps tenodeses showed a slightly lower risk of reoperation than SLAP repair.

The strengths of this study include a large sample size and confirmation of the findings of previous studies.³⁻⁷ However, as always with large database studies, there are some weaknesses that should be noted. Truong et al.² were unable to stratify procedures by the type of SLAP tear because not all SLAP tears are treated the same way. Clearly, type 2 SLAP tears may be treated differently than type 4 SLAP tears. Moreover, an assumption is made that the distribution of SLAP tear types remains constant from year to year, which may not be true. Additionally, the inability to report on concomitant procedures is a limitation, especially when commenting on reoperation rates. Not knowing what other procedures were performed (e.g., rotator cuff repair) makes it impossible to determine whether reoperation procedures were performed because of failure of the SLAP repair or biceps tenodesis or because of failure of treatment of the concomitant pathology. Finally, it is unknown from the Current Procedural Terminology (CPT) codes (specifically 29822 and 29823) what percentage of patients underwent primary biceps tenotomy for SLAP pathology or a secondary procedure for failure of SLAP repair.

In my practice, for patients younger than 40 years, I have seen successful results with repair of type 2 SLAP tears that do not directly affect the biceps anchor (i.e., those tears from the 12:30 clock-face position to the 2-o'clock position or from the 10-o'clock position to the 11:30 clock-face position). For those tears at the biceps anchor, I will repair the SLAP tear but perform tenodesis of the biceps. For type 3 SLAP tears, I will debride the bucket-handle component and spare the biceps because it usually is not involved. Type 4 SLAP tears always undergo tenodesis.

In patients older than 40 years, type 2 and type 4 SLAP tears are predominantly treated with biceps

tenodesis with debridement of the SLAP tear, if indicated. In these patients, I rarely repair the SLAP tears because they are usually degenerative and frayed and are of fair tissue quality.

So, to conclude, whether to perform repair or tenodesis depends on a multitude of factors: patient age, activity or work level, type of SLAP tear, location of SLAP tear, and quality of labral tissue. Determining which procedure to perform does not have such a simple, one-size-fits-all solution, and that's the rub!

References

1. Shakespeare W. *Hamlet*. Act 3, scene 1, lines 1-10. Hibbard, ed. Oxford: Oxford University Press; 2008.
2. Truong NM, Cevallos N, Lansdown DA, Ma B, Feeley BT, Zhang AL. Biceps tenodesis demonstrates lower reoperation rates compared to SLAP repair for treatment of SLAP tears in a large cross-sectional population. *Arthroscopy* 2022;38:1802-1809.
3. Provencher MT, McCormick F, Dewing C, McIntire S, Solomon D. A prospective analysis of 179 type 2 superior labrum anterior and posterior repairs: Outcomes and factors associated with success and failure. *Am J Sports Med* 2013;41:880-886.
4. Cvetanovich GL, Gowd AK, Frantz TL, Erickson BJ, Romeo AA. Superior labral anterior posterior repair and biceps tenodesis surgery: Trends of the American Board of Orthopaedic Surgery database. *Am J Sports Med* 2020;48:1583-1589.
5. Patterson BM, Creighton RA, Spang JT, Roberson JR, Kamath GV. Surgical trends in the treatment of superior labrum anterior and posterior lesions of the shoulder: Analysis of data from the American Board of Orthopaedic Surgery certification examination database. *Am J Sports Med* 2014;42:1904-1910.
6. Khazai RS, Lee CS, Boyajian HH, Shi LL, Athiviraham A. Rates of subsequent shoulder surgery within three years for patients undergoing SLAP repair versus biceps tenodesis. *Arthrosc Sports Med Rehabil* 2020;2:e129-e135.
7. Mollon B, Mahure SA, Ensor KL, Zuckerman JD, Kwon YW, Rokito AS. Subsequent shoulder surgery after isolated arthroscopic SLAP repair. *Arthroscopy* 2016;32:1954-1962.e1.