

Editorial Commentary: The Hip Capsule: To Close or Not to Close? Is That Still the Question?



Timothy J. Jackson, M.D., Associate Editor

Abstract: The question of capsule closure or no closure after hip arthroscopy remains controversial as we try to decipher best practice and which patients should and should not have a repair. Closure seems of particular importance in younger patients and with larger capsulotomies. In my practice, I routinely repair the capsule after hip arthroscopy, except in patients with significant stiffness. Capsule repair may not be vital in some patients, as a smaller capsulotomy could sometimes heal on its own, but my patients and I certainly do not want to learn the hard way.

See related article on page 1323

It felt like a quick trip to the oldest city in Ireland, Waterford, while reading Filan and Carton's "Routine Interportal Capsular Repair Does Not Lead to Superior Clinical Outcome Following Arthroscopic Femoroacetabular Impingement Correction With Labral Repair,"¹ a large cohort, comparative study of femoroacetabular impingement treated with hip arthroscopy. In this, we see further research into the modern-age old question of what to do with the hip capsule after hip arthroscopy.

Waterford is where the luxurious crystal was made until the factory closed in 2009. Four years after that, presumably unrelated to the factory closure, all patients who underwent hip arthroscopy for femoroacetabular impingement did so with capsule closure. Before this, no capsule received repair. Also, in this southeastern region of Ireland, all patients were treated with labral repair—simply no room for debridement in this oldest of Irish cities. But with peculiar practice changes and die-hard belief in the benefits of anchors for labrums, Ireland has given us a comparison study for which we can try to answer the great Shakespearean question: To close or not to close? The acute shift in capsular treatment gave us this study where the authors found there to be very few differences, with similar and

impressively high patient-reported outcome scores, low revisions rates, and a minuscule 2 patients who required total hip arthroplasty. The patients without capsule repair before 2013 averaged 97 on the 2-year modified Harris Hip Score. With the home run outcomes seen out of Waterford, how much better could they have gotten with capsular closure?

The large cohorts are to be applauded, as this takes considerable time and effort to maintain. However, if hips are like snowflakes in their thousands of variations related to bony anatomy, capsular laxity, labral size, and morphology, to name a few, then large cohort studies on hips is like comparing snow with snow. It all looks the same. Of course, there are differences in snow, but from the bottom of the mountain, it all looks bright white. It is not until we get our skis on that we can see and feel the differences. In this study, as the large cohort is broken down into subgroups, the authors found that the younger patients had less risk of repeat arthroscopy if the capsule was closed. This was shown by the 3.9% revision rate for capsular repair compared with 8.6%. That makes sense, as a study by Frank et al.² showed a greater revision rate in the partially closed cohort. Domb et al.³ showed similar revision rates, however, with an increased chance of conversion to total hip arthroplasty and deterioration in patient-reported outcome scores at 5-year follow-up without capsule repair.

However, the differences between cohorts and subgroups end there. The results in this study show equivalence, if not advantage to no repair. How can this be? Does the capsule heal? Strickland et al.⁴ proposed all capsules heal after a small, interportal capsulotomy,

The author reports the following potential conflicts of interest or sources of funding: other from Arthrex, outside the submitted work. Full ICMJE author disclosure forms are available for this article online, as supplementary material.

© 2020 by the Arthroscopy Association of North America
0749-8063/2023/\$36.00
<https://doi.org/10.1016/j.arthro.2020.02.032>

regardless of repair. Many surgeons prefer a large capsulotomy, and some prefer a T capsulotomy.⁵ A study by Wylie et al.⁶ showed improvement after revision with capsule repair in patients who had capsules that were not healed after hip arthroscopy. And what of the biomechanics of capsulotomy? A large capsulotomy cuts through the entirety of the iliofemoral ligament, with significant changes in external rotation and anterior translation. These are generally corrected with repair.⁷⁻⁹ Perhaps, if a small interportal capsulotomy is performed, the iliofemoral ligament remains biomechanically sound and the capsule can heal. The bottom of the zipper is still attached. So maybe the capsulotomy in Waterford is small. I certainly have seen many capsules that have not healed after a previous hip arthroscopy, some with fluid tracking into the iliopsoas. That can't be good. In my practice, as of 2020, I routinely repair the capsule after hip arthroscopy and make exception for those with stiffness. Capsule repair may not be important in some patients, or it may heal, but my patients and I certainly do not want to learn the hard way.

So, what is happening in Waterford these days? Did this study cause another crystal-shattering shift in the way things are done there? To close or not to close, apparently that IS still the question.

References

1. Filan D, Carton P. Routine interportal capsular repair does not lead to superior clinical outcome following arthroscopic femoroacetabular impingement correction with labral repair. *Arthroscopy* 2020;36:1323-1334.
2. Frank RM, Lee S, Bush-Joseph CA, Kelly BT, Salata MJ, Nho SJ. Improved outcomes after hip arthroscopic surgery in patients undergoing T-capsulotomy with complete repair versus partial repair for femoroacetabular impingement: A comparative matched-pair analysis. *Am J Sports Med* 2014;42:2634-2642.
3. Domb BG, Chaharbakhshi EO, Perets I, Walsh JP, Yuen LC, Ashberg LJ. Patient-reported outcomes of capsular repair versus capsulotomy in patients undergoing hip arthroscopy: Minimum 5-year follow-up-a matched comparison study. *Arthroscopy* 2018;34:853-863.e1.
4. Strickland CD, Kraeutler MJ, Brick MJ, et al. MRI evaluation of repaired versus unrepaired interportal capsulotomy in simultaneous bilateral hip arthroscopy: A double-blind, randomized controlled trial. *J Bone Joint Surg Am* 2018;100:91-98.
5. Cvetanovich GL, Levy DM, Beck EC, et al. A T-capsulotomy provides increased hip joint visualization compared with an extended interportal capsulotomy. *J Hip Preserv Surg* 2019;6:157-163.
6. Wylie JD, Beckmann JT, Maak TG, Aoki SK. Arthroscopic capsular repair for symptomatic hip instability after previous hip arthroscopic surgery. *Am J Sports Med* 2016;44:39-45.
7. Jackson TJ, Peterson AB, Akeda M, et al. Biomechanical effects of capsular shift in the treatment of hip microinstability: Creation and testing of a novel hip instability model. *Am J Sports Med* 2016;44:689-695.
8. Martin HD, Savage A, Braly BA, Palmer IJ, Beall DP, Kelly B. The function of the hip capsular ligaments: A quantitative report. *Arthroscopy* 2008;24:188-195.
9. Myers CA, Register BC, Lertwanich P, et al. Role of the acetabular labrum and the iliofemoral ligament in hip stability: An in vitro biplane fluoroscopy study. *Am J Sports Med* 2011;39:85S-91S (suppl).