

The Rise of Remplissage

Shoulder instability events consistently result in the creation of a Bankart or Perthes lesion on the glenoid (often with some amount of bone loss) as well as the creation of a Hill-Sachs defect in the humeral head.^{9,15} Much of the focus on bone loss in the setting of instability has been on the glenoid, leading to a resurgence of the Latarjet procedure⁸ and development of alternative bone block options.¹³ However, a recent increase in research on the humeral side has helped fuel the rise of an adjunctive procedure alongside arthroscopic Bankart repair—the remplissage. Much of the history of the Hill-Sachs defect and the increasing interest in surgical approaches to this lesion were detailed by Dr. Reider in his 2016 editorial.¹² From 2004 through 2016, the literature saw the accumulation of 116 articles on remplissage. Since 2016, we have seen an additional 396 articles!

The remplissage procedure was first described in 2004 by Wolf and Pollack in abstract form and followed up with a technical article in 2008.^{11,16} They described a suturing of the posterior rotator cuff and capsule into the Hill-Sachs defect using an anchor. They termed this posterior capsulotenodesis “remplissage” from the French *remplir*, “to fill.” The initial indication was primarily the so-called engaging Hill-Sachs defect, which is now referred to as an “off-track” lesion in accordance with the glenoid track concept.⁴ However, excellent results have been reported for on-track lesions as well.² While there were some initial concerns about motion loss with remplissage, that has not been shown to be a substantial problem in clinical studies.^{5,14} Multiple recent systematic reviews have concluded that adjunctive remplissage results in lower re-dislocation rates, with reliable outcomes and return to sport.^{3,10,14} For patients with subcritical glenoid bone loss, arthroscopic Bankart repair plus remplissage has compared favorably to Latarjet, with a lower risk profile.⁶

This recent interest in the research domain is both reflective of and influencing the practice patterns of instability surgeons. Yet, the true trends in utilization have remained unclear. In this month’s issue, Brej and colleagues¹ report on the utilization rate and indications for remplissage. These authors reviewed the data of all patients with arthroscopic shoulder stabilization operated on at 3 high-volume centers by 5 surgeons during the years 2012 through 2024. They searched broadly using the code

for arthroscopic stabilization in order to capture all potential surgeries and manually determined the number undergoing remplissage. These methods were necessary since remplissage does not have a specific code, making utilization studies using large databases unreliable. They found that of the 1100 patients undergoing arthroscopic Bankart repair, 244 (22%) underwent remplissage. The utilization rate increased 4.5-fold from 7.7% in 2012 to 34.7% in 2024. These changes reflect an increasing comfort with remplissage and also a softening of the indications to include smaller and on-track Hill-Sachs defects.

While there are alternatives to remplissage to address Hill-Sachs defects, none are as simple to perform. The humeral defect may be addressed by augmenting the glenoid track with a Latarjet or other glenoid augmentation, although lesions may remain off-track and represent a risk factor for failure.⁷ Open osteochondral grafting has also been offered as a solution for large defects, but it requires a posterior approach or complete anterior soft tissue stripping to access through an anterior incision. Remplissage is a straightforward arthroscopic adjunct that is easy to learn and teach, and it does not add significant time or morbidity to the procedure. There is sure to be continued work on optimizing the procedural technique as well as the ideal indications.

Remplissage represents an additional arrow in the quiver of shoulder instability surgeons. While the debate between arthroscopic stabilization and open Bankart repair or Latarjet continues, remplissage is an adjunctive procedure that may allow surgeons to broaden their indications for arthroscopic approaches. While the exact role of this procedure within the shoulder instability surgical armamentarium will eventually be based on additional high-quality studies, certainly remplissage is here to stay.



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