Technical Note

Arthroscopic Posterior Bony Bankart Bridge for Posterior Bony Bankart Lesions

Ayham Jaber, M.D., Tyler J. Uppstrom, M.D., Christopher J. Hawryluk, M.B.S., Michael Nocek, B.A., Yazan Jaber, M.D., and Peter J. Millett, M.D., M.Sc.

Abstract: Posterior shoulder instability is increasingly recognized, particularly among athletes and individuals subjected to repetitive posterior loading. Posterior dislocations can result in a posterior bony Bankart lesion, which presents a unique challenge in arthroscopic repair as a result of the bony involvement and the technical challenges associated with the procedure. The arthroscopic posterior bony Bankart Bridge presents a reliable, minimally invasive treatment option.

Posterior shoulder instability is increasingly recognized, particularly among athletes and individuals subjected to repetitive posterior loading.[1] In some instances, the posterior glenoid rim may fracture, resulting in a posterior bony Bankart lesion, which presents unique challenges in arthroscopic repair as the result of the bony involvement and the technical challenges associated with the repair.[2,3]

Traditional arthroscopic techniques for posterior instability have focused primarily on soft-tissue repair.[4] However, in the presence of bony involvement, anatomical reduction, and stable fixation of the glenoid fragment are essential to restore joint congruity and prevent recurrence.[5] Techniques described for anterior bony Bankart lesions, such as the "bony Bankart bridge," have demonstrated reliable outcomes with 2-point fixation and low recurrence rates.[6,7] In this Technical Note, we describe a posterior bony Bankart bridge technique performed arthroscopically to treat posterior bony Bankart lesions. The method is reproducible, minimally invasive, and facilitates early mobilization postoperatively.

Surgical Technique

Patients are placed in the beach-chair position with the index arm positioned in a pneumatic arm holder. A thorough shoulder examination is conducted to verify instability. The surgical area is prepped and draped in the standard sterile manner. Posterior and anterosuperior arthroscopic portals are created to begin diagnostic assessment of the glenoid rim and associated labral structures. An anteroinferior portal is subsequently made to facilitate suture passage. Through this portal—inserted low within the rotator interval and parallel to the glenoid—a 5.0-mm or 8.25-mm cannula is introduced. The arthroscope is then shifted to the anterosuperior portal for better visualization. The posterior bony Bankart lesion is identified. An accessory posteroinferolateral portal is established under direct visualization after localizing the trajectory with a spinal needle, and a 5.0-mm cannula is placed to assist with suture handling and anchor positioning. Appropriate position of this portal is an essential step to allow for appropriate trajectory of anchor placement and suture passage. Surgeons should remember that the more lateral this is placed, the easier it will be to place anchors in the glenoid, whereas the more medial it is placed, the easier it will be to pass sutures using a shuttling instrument. Debridement and mobilization of both the labrum and glenoid, including the fracture fragment, are carried out. The bony Bankart fragment is carefully freed using an elevator, and the glenoid neck is prepared using a shaver, burr, and PowerPick

From the Steadman Philippon Research Institute, Vail, Colorado, U.S.A. (A.J., C.J.H., M.J.N.); Heidelberg University Hospital, Germany (A.J.); The Steadman Clinic, Vail, Colorado, U.S.A. (T.J.U., P.J.M.); and College of Medicine, Almaarefa University, Riyadh, Saudi Arabia (Y.J.).

Received May 14, 2025; accepted June 15, 2025.

Address correspondence to Peter J. Millett, M.D., M.Sc., The Steadman Clinic & Steadman Philippon Research Institute, The Steadman Clinic, 181 West Meadow Dr., Suite 400, Vail, CO 81657, U.S.A. E-mail: drmillett@thesteadmanclinic.com

2212-6287/25932

https://doi.org/10.1016/j.eats.2025.103767

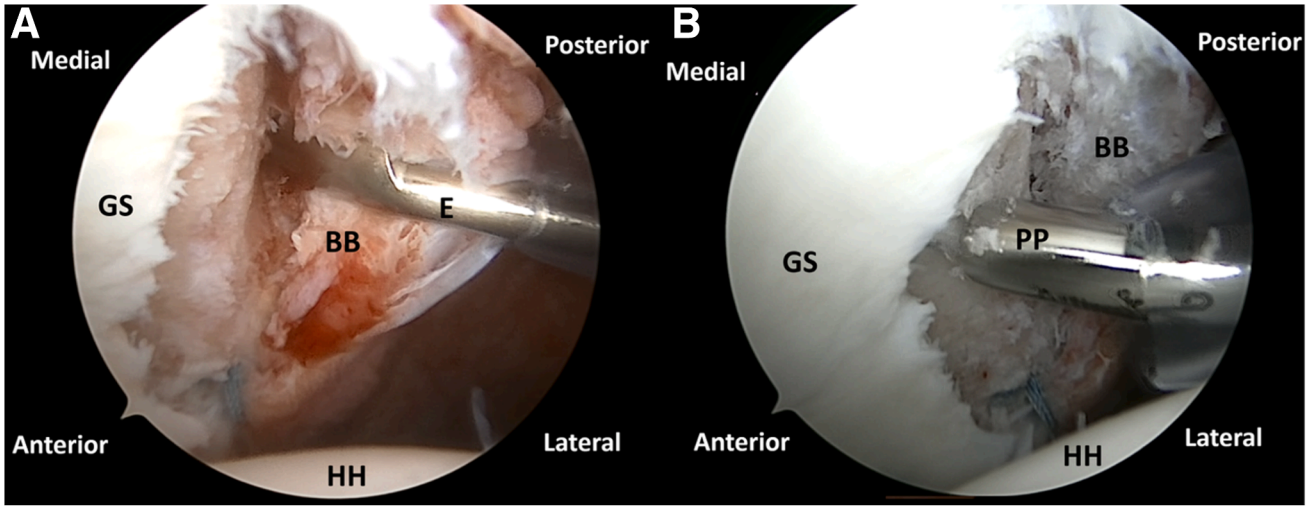

Fig 1. Left shoulder is shown with the arthroscope in the anterosuperior portal. (A) The posterior bony Bankart fragment is meticulously mobilized with an elevator, and the glenoid neck is prepared with a shaver/burr and PowerPick (Arthrex) until a bleeding surface is created to enhance bone-to-bone healing. (BB, bony Bankart; E, elevator; GS, glenoid surface; HH, humeral head; PP, PowerPick.)

(Arthrex, Naples, FL) to ensure a stable cartilage interface, optimizing the potential for bone-to-bone healing (Fig 1).

The posterior capsulolabral tissue and bony fragment are elevated from the posterior aspect of the glenoid to allow for adequate mobilization for repair. The medial anchor on the glenoid for the bridging technique is best inserted through the original posterior portal. A drill guide for a 2.4-mm SutureTak anchor is then inserted through the initial posterior portal and drilled medial to the bony Bankart lesion into the non-articular surface of the glenoid (Fig 2).

The drill guide is then translated laterally around the posterior aspect of the posterior bony Bankart lesion, and the sutures are retrieved intra-articularly and parked. Next, the inferior aspect of the labral tear is repaired with a 1.8-mm Knotless FiberTak anchor (Arthrex), which is inserted into the articular margin of the posteroinferior glenoid at approximately the 6-o'clock position, at the lowest margin of the glenoid fracture. A straight crescent SutureLasso (Arthrex) inserted through the posterolateral portal, is then passed through the capsulolabral tissue and the repair stitch from the anchor is shuttled using the Nitinol

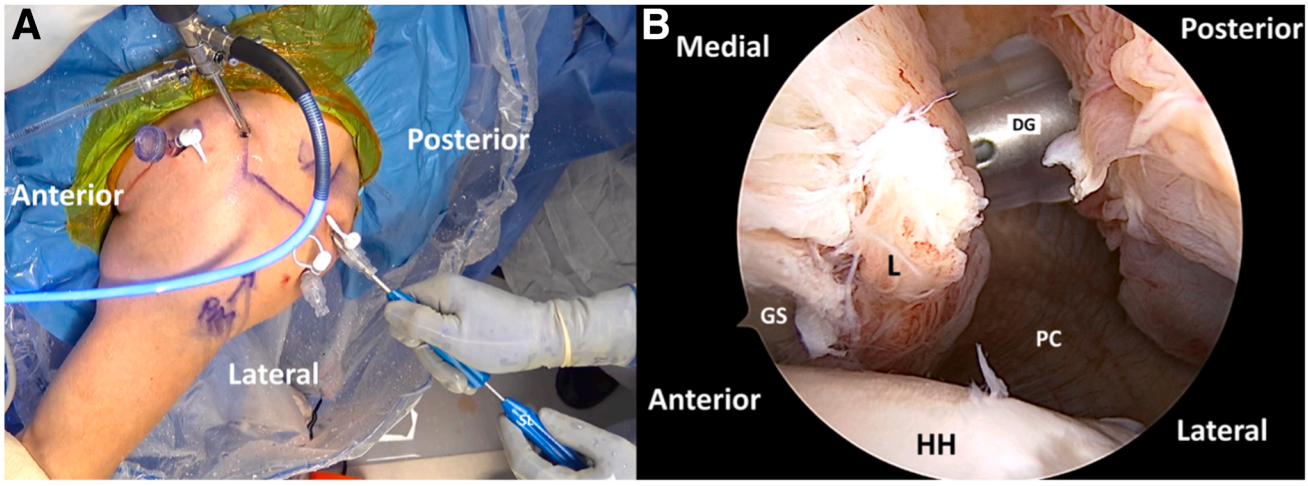

Fig 2. Left shoulder is shown with the arthroscope in the anterosuperior portal. (A-B). A 2.4-mm bioabsorbable suture anchor (SutureTak; Arthrex) is placed medially to the fracture fragment on the glenoid neck via the inferior posterolateral portal. (BB, bony Bankart; DG, drill guide for SutureTak; E, elevator; GS, glenoid surface; HH, humeral head; L, labrum; PC, posterior capsule; PP, PowerPick.)

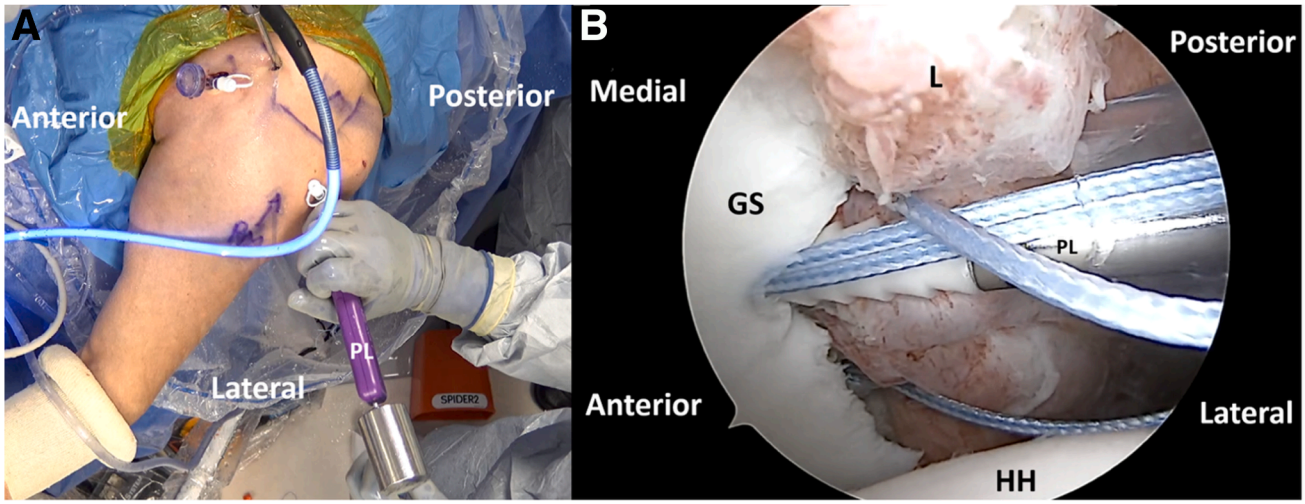

Fig 3. Left shoulder is shown with the arthroscope in the anterosuperior portal. (A-B) The 2 sutures from the SutureTak are inserted into the 2.9-mm PushLock anchor (Arthrex). The PushLock anchor is inserted at the articular margin of the glenoid defect between the 2 previously FiberTak anchors, creating the compression across the lesion, a bony Bankart bridge. (GS, glenoid surface; HH, humeral head; L, labrum; PL, PushLock.)

wire. The repair stitch is then shuttled through the self-locking mechanism of the anchor and tensioned appropriately to reduce and secure the inferiormost aspect of the posterior Bankart lesion to the posterior aspect of the glenoid. A second 1.8-mm knotless FiberTak anchor is then inserted at the superiormost aspect of the glenoid defect to secure and reduce the superior extent of the bony fragment and to restore the capsulolabral tissues. A low-profile crescent SutureLasso is again passed through the capsular labral tissue and the repair stitch is shuttled through the anchor in a similar fashion to the inferior anchor and provisionally tensioned. The repair sutures from the 2 knotless FiberTak anchors can be cut as they are inserted or alternatively, they can be provisionally tensioned, preserved, and then retensioned at the end of the procedure. We have shown in the laboratory in our institute that sequential retensioning provides additional reduction and compression of the posterior capsulolabral tissues.

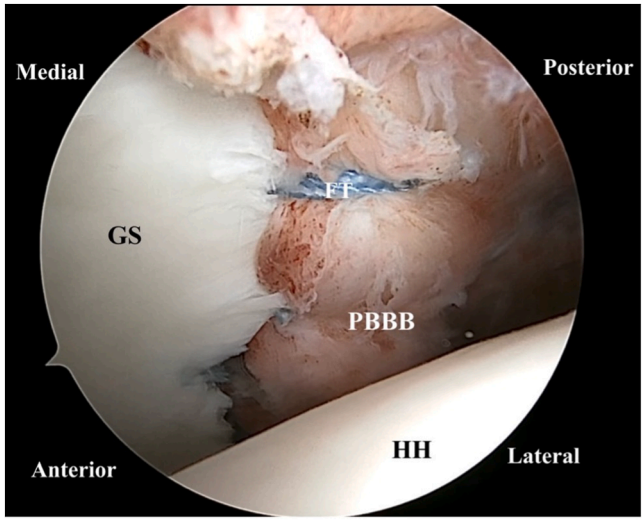

Fig 4. Left shoulder is shown with the arthroscope in the anterosuperior portal. Scope footage showing the final construct of the posterior bony Bankart bridge (PBBB). FiberTak (FT) anchor for labral repair is superior to the PBBB. (GS, glenoid surface; HH, humeral head.)

The bridging construct is now completed. The sutures from the medially placed 2.4-mm SutureTak anchor are then placed into a 2.9-mm PushLock anchor (Arthrex) at the articular margin of the glenoid defect between the 2 previously FiberTak anchors, creating compression across the posterior bony Bankart lesion (Fig 3). The sutures are then cut. The 2 FiberTak repair sutures may be additionally tensioned to provide additional compression. The repair sutures are then cut. In the case presented in Video 1, 2 additional superior 1.8-mm knotless FiberTak anchors are placed to reinforce the posterosuperior capsulolabral tissue. Additional anchors may be placed as needed, depending upon the injury pattern and its extent. The repair construct is then evaluated, and the shoulder is dynamically assessed under direct visualization (Fig 4). The security of the "posterior bony Bankart bridge" construct is tested with a probe. Figures 5 and 6 demonstrate the final construct of the repair.

Postoperatively, patients are placed in a sling for 6 weeks, and passive range of motion is restricted for the first 2 weeks. From weeks 3 to 6, passive motion is restricted to forward elevation less than 120°, external rotation less than 30°, internal rotation to the belly, and abduction less than 90°. After 6 weeks, full passive

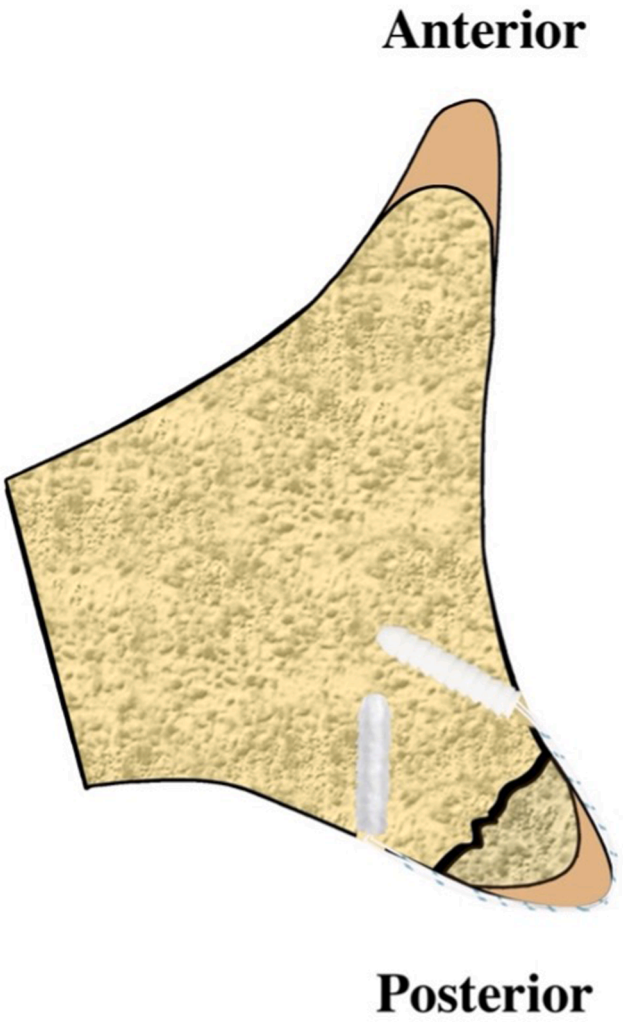

Fig 5. Coronal cross section with anchor placement in relation to the bony Bankart lesion.

and active range of motion are initiated as tolerated. At 8 weeks postoperatively, resistance strengthening is allowed. Return to full activity and recreational activities without restriction is permitted at 4 months postoperatively.

Discussion

The risk of recurrence of posterior shoulder instability increases significantly with glenoid bone loss.[8] Patients, particularly high-level athletes, are at a particularly greater risk for recurrence. The senior author recommends treating posterior glenoid bone defects after first-time dislocations or recurrent instability by restoring the articular surface of the glenoid.[9,10] Multiple techniques have been described in arthroscopic repair of a bony Bankart lesion. These include soft-tissue–only repairs, anchor repairs with transosseous or bridging techniques, and screw fixation.[11-14] Overall, the recurrence rates for arthroscopic repair of posterior bony Bankart lesions regardless of surgical technique are generally low with rates around 5% to 6%.[13]

The bony Bankart bridge technique was initially described by the senior author for surgically treating anterior bony Bankart lesions.[14] The principles of this technique are well established and excellent long-term results have recently been reported.[15] Using this technique for a posterior bony Bankart lesion has been previously mentioned in a case series of 7 patients with a minimum follow-up of 2 years.[7] It showed reliable postoperative shoulder function, good restoration of shoulder stability, high patient satisfaction, and low complication rates. The bony Bankart bridge technique offers robust fixation of the posterior glenoid fragment using a dual-anchor construct that spans the bony defect. This configuration provides both compressive force and rotational stability, while preserving the intact capsulolabral attachments. Anchors placed superiorly and inferiorly to the bridge enhance control of rotational forces, and the bridge itself delivers 2-point fixation, effectively compressing the fragment against the glenoid to maximize surface contact for bone healing, while avoiding tilting or fragmentation of the fragment. Unlike previous arthroscopic methods that rely on single-point fixation, this technique offers improved biomechanical stability through enhanced compression and rotational control. It is a reproducible, minimally invasive approach that also supports early postoperative mobilization. Advantages and disadvantages are summarized in Table 1, and pearls and pitfalls are summarized in Table 2.

Disclosures

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: A.J. reports that financial support, administrative support, article publishing charges, and statistical analysis were provided by the Steadman Philippon Research Institute (SPRI), that they are employed as a research fellow at SPRI, and that SPRI receives support from Arthrex, the Department of Defense Office of Naval Research, DJO, MIB, Ossur, Siemens, Smith & Nephew, and XTRE. C.H. reports that financial support, administrative support, article publishing charges, and statistical analysis were provided by the Steadman Philippon Research Institute (SPRI), and that they are employed as a Research Assistant at SPRI. M.N. reports that financial support, administrative support, article publishing charges, and statistical analysis were provided by the Steadman Philippon Research Institute (SPRI), and that they are employed as a Research Assistant at SPRI. P.J.M. reports that financial support, administrative support, article publishing charges, and statistical analysis were provided by the Steadman Philippon Research Institute (SPRI), that they are a Sports Medicine Physician at The Steadman Clinic

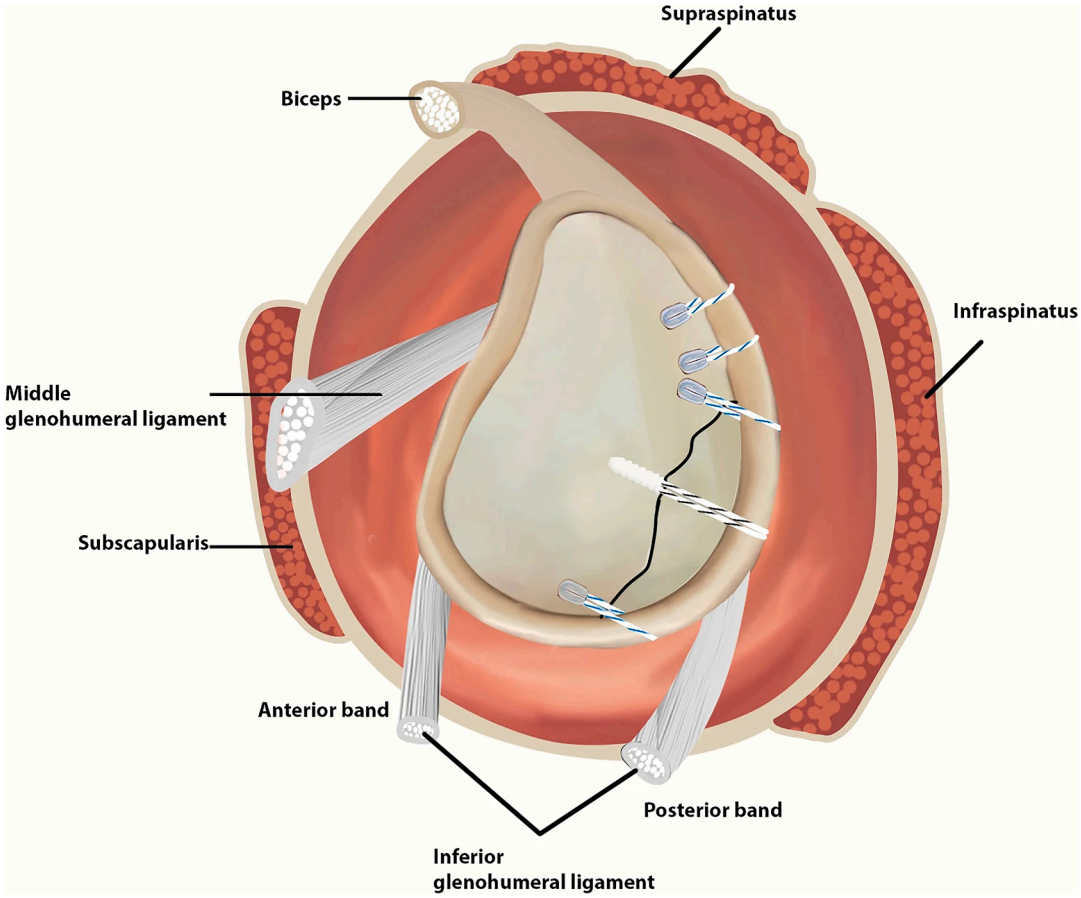

Fig 6. Final repair with reduced posterior bony Bankart fragment, repaired labrum, and shifted capsule and inferior glenohumeral ligament complex.

Table 1. Advantages and Disadvantages

Advantages	Disadvantages
Increased control over bony fragment	Technically challenging
Excellent reduction, avoids fragmentation, avoids tilting	Requires placement of percutaneous anchors with limited visualization
Compression distributed across the entire fracture fragment	Relatively difficult suture passage and management

Table 2. Pearls and Pitfalls

Pearls	Pitfalls
Adequately mobilize fracture fragment for appropriate reduction	Disrupting osseous reduction with overpreparation of fracture edges
Secure double-row sutures last to allow for suture passage in labral repair	Difficulty passing sutures once double-row is fixated
Pass medial-row anchor anteriorly using a drill guide—use the posterior portal for this and use the posterolateral portal to pass the lateral anchor	Take care not to cut or disrupt suture when using a drill guide

(TSC) and SPRI, and that TSC receives support from Arthrex, the Department of Defense Office of Naval Research, DJO, MIB, Ossur, Siemens, Smith & Nephew, and XTRE. T.U. reports that financial support, administrative support, article publishing charges, and statistical analysis were provided by the Steadman Philippon Research Institute (SPRI). Y.J. declares that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

1. Hurley ET, Aman ZS, Doyle TR, et al. Posterior shoulder instability, part I—diagnosis, nonoperative management, and labral repair for posterior shoulder instability—an international expert Delphi consensus statement. *Arthroscopy* 2025;41:166-180.e11.
2. Arner JW, Elrick BP, Nolte PC, Goldenberg B, Dekker TJ, Millett PJ. Posterior glenoid augmentation with extra-articular iliac crest autograft for recurrent posterior shoulder instability. *Arthrosc Tech* 2020;9:e1227-e1233.
3. Waltz RA, Brown J, Brady AW, et al. Biomechanical evaluation of posterior shoulder instability with a clinically relevant posterior glenoid bone loss model. *Am J Sports Med* 2023;51:2443-2453.
4. Dey Hazra ME, Dey Hazra RO, Hanson JA, Millett PJ. Arthroscopic posterior labral repair and capsular closure via single working portal for posterior shoulder instability. *Arthrosc Tech* 2022;11:e1557-e1561.
5. Wolfe JA, Elsenbeck M, Nappo K, et al. Effect of posterior glenoid bone loss and retroversion on arthroscopic posterior glenohumeral stabilization. *Am J Sports Med* 2020;48:2621-2627.
6. Godin JA, Altintas B, Horan MP, et al. Midterm results of the bony Bankart bridge technique for the treatment of bony Bankart lesions. *Am J Sports Med* 2019;47:158-164.
7. Lacheta L, Goldenberg BT, Horan MP, Millett PJ. Posterior bony Bankart bridge technique results in reliable clinical 2-year outcomes and high return to sports rate for the treatment of posterior bony Bankart lesions. *Knee Surg Sports Traumatol Arthrosc* 2021;29:120-126.
8. Nacca C, Gil JA, Badida R, Crisco JJ, Owens BD. Critical glenoid bone loss in posterior shoulder instability. *Am J Sports Med* 2018;46:1058-1063.
9. Livesey MG, Bedrin MD, Kolevar MP, et al. Glenoid bone loss pattern in patients with posterior instability versus anterior instability: A matched cohort study. *Orthop J Sports Med* 2023;11(2).
10. Longo UG, Rizzello G, Locher J, et al. Bone loss in patients with posterior gleno-humeral instability: A systematic review. *Knee Surg Sports Traumatol Arthrosc* 2016;24:612-617.
11. Plath JE, Feucht MJ, Bangoj R, et al. Arthroscopic suture anchor fixation of bony Bankart lesions: Clinical outcome, magnetic resonance imaging results, and return to sports. *Arthroscopy* 2015;31:1472-1481.
12. Spiegl UJ, Smith SD, Todd JN, Coatney GA, Wijdicks CA, Millett PJ. Biomechanical comparison of arthroscopic single-and double-row repair techniques for acute bony Bankart lesions. *Am J Sports Med* 2014;42:1939-1946.
13. Kim YK, Cho SH, Son WS, Moon SH. Arthroscopic repair of small and medium-sized bony Bankart lesions. *Am J Sports Med* 2014;42:86-94.
14. Millett PJ, Braun S. The "bony Bankart bridge" procedure: A new arthroscopic technique for reduction and internal fixation of a bony Bankart lesion. *Arthroscopy* 2009;25:102-105.
15. Hinz M, Kruckeberg BM, Davis CS, et al. Minimum 10-year clinical and functional outcomes after arthroscopic bony Bankart bridge for the treatment of bony Bankart lesions. *J Shoulder Elbow Surg* 2025;34:S57-S63.