

Peer Review File

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Review Comments

Reviewer A

The authors should be commended for a well-written, comprehensive review of an important topic.

Comment 1: Lines 37-41: This is a good place to define the concepts of "on/off track" and "distance to dislocation".

Reply 1: *Thank you for the comment,*

Changes in the text: *lines 30-36 added:*

Classically, "off-track" lesions have been described as those Hill-Sachs Interval (HSI) greater than the glenoid track, and have been shown to result in higher rates of re-instability when addressed nonoperatively or with Bankart repair alone. More recently, further attention has been given to "on-track" lesions (HSI < glenoid track). The new concept of "distance to dislocation" (DTD) has gained popularity. DTD is calculated as the difference between the glenoid track and HSI, and literature evaluating DTD suggests that not all "on-track" lesions should be treated in the same manner.

Comment 2: Lines 44-47: Here you should clearly indicate that this is a concept review article.

Reply 2: *Added lines 37: "The purpose of this concept review article is twofold..."*

Comment 3: Line 72: Eliminate "situations of both"

Reply 3: *Done.*

Comment 4: Line 75: Eliminate "situations", add "scan" following CT

Reply 4: *Done.*

Comment 5: Line 79: Eliminate "the use of"

Reply 5: Done.

Comment 6: Line 130: sensitivity and specificity for what

Reply 6: *Sensitivity and specificity have been removed.*

Changes in the text: *CT is widely considered the "gold standard" imaging modality due to superior bony resolution and availability(33), yet recent studies suggest that 2D and 3D MRI is equivalent to 3D CT in evaluating bone loss.(38-41)*

Comment 7: Line 205: Eliminate "all"

Reply 7: Done.

Comment 8: Line 210: Eliminate "approaching"

Reply 8: Done.

Comment 9: Line 235: Eliminate "as demonstrated above"

Reply 9: Done.

Comment 10: Lines 280-283: Re-phrase for clarity

Reply 10: *Added lines 312-314: While the glenoid track concept has been monumental in assessing and quantifying bipolar bone loss, current research has further classified "on-track" lesions, as these lesions should not all be viewed equally.*

Comment 11: Line 286: Eliminate "as discussed"

Reply 11: Done.

Changes in the text: *Lines 302-306: Stating that studies are "underway" doesn't add to the work. "Unpublished work is currently examining" - does this mean the work is complete but unpublished because all work that is currently underway is obviously unpublished.*

Changed lines 340-342: Furthermore, research currently examining the effects of hyperlaxity, Hill-Sachs's lesion location, and DTD in patients with subcritical bone loss and those who've experienced recurrent instability after Latarjet procedure is underway.

Comment 12: Line 314: Eliminate "as described above"

Reply 12: Removed.

Comment 13: Lines 324-326: Re-phrase for clarity

Reply 13: *Done. Please see below comment.*

Comment 14: Lines 328-330: Re-phrase for clarity

Reply 14: *Done.*

Changes in the text: *Lines 359-374 updated: Bone loss in shoulder instability drives treatment algorithms and patient outcomes. Humeral- and glenoid-sided bone loss must be measured and addressed in the unstable shoulder to promote the most successful outcomes. The new concept of DTD introduces an additional dimension to the glenoid track concept and has been proven as a predictor of failure after arthroscopic stabilization. As the body of literature continues to grow on DTD, the concept will provide necessary information for surgeons, offering support for specific management options following anterior shoulder instability.*

Comment 15: The figures are appropriate and well described. A graphic depicting the glenoid track and on/off track would add value.

Reply 15: *Thank you for the comment, we feel that glenoid track, HSI, on/off track, and DTD calculations were described in figures 1-3. These calculations were also described in the body of the manuscript.*

Reviewer B

Comment 16: Overall this is an excellent review of the topic. It is comprehensive in nature and covers all the current controversies in shoulder instability. It is well referenced and also highlights upcoming research. My only suggestion would be to add either in the body of the text or in an appendix any details of the search and method by which the relevant articles were included in this narrative review.

Reply 16: *Thank you for the comment, meticulous searches of Pubmed and Scopus were performed to provide the most comprehensive and up-to-date references on glenoid*

bone loss, humeral bone loss, and bipolar bone loss. Some current research at our institution was also included as it applies to bipolar bone loss and distance to dislocation. We did add the following into the introduction portion of this review.

Changes in the text: *Lines 66-69: Meticulous review of the current available literature was assessed, and the purpose of this article is twofold: 1) describe glenoid, humeral, and bipolar bone loss in the setting of anterior shoulder instability and 2) elaborate on the new concept of “distance to dislocation” and its use in guidance of management.*