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## Peer Review File

**Article information:** <http://dx.doi.org/10.21037/aoj-20-73>

### **Review Comments**

Overview: This manuscript evaluated a finite element model to determine the trajectory for a posterior oblique ligament reconstruction tunnel with a concurrent PCL tibial reconstruction tunnel. Overall, the authors evaluated five knees to assess this trajectory. This reviewer feels that it is essential that the authors expand their review of the literature because many pertinent works in high level journals have not been cited that are more relevant to this topic. In particular, the work by Moatshe in AJSM in 2016 evaluated 21 patients with five different tibial reconstruction tunnel grafts to examine the inter-tunnel relationships in the tibia during reconstruction of multiple knee ligaments, and essentially the current study validated the previous study, at least for a portion of it (the POL-PCL part). I believe that the authors are required to update their references to cite more pertinent literature, have more recent reviews of the literature in the Discussion, and acknowledge the previous work by Moatshe on this topic and note that their study validated this, that this study would be acceptable for publication in the Annals of Joint.

Specific Comments:

Comment 1: Line 5: "...reconstruct the posterior cruciate ligament...".

Reply 1: [We have amended the content.](#)

Comment 2: Introduction, Line 36: The presented references do not present some of the more important references on this topic. These references need to include the reference by Terry in AJSM, 25:433-438, 1997; Geeslin, AJSM, 38:350202508, 2010 (both of which note that posterolateral corner injuries are isolated 28% of the time); JOR, 32:485-491, 2014, Lunden, JOSPT, 40:502-516, 2010, and Cooper, Sports Med Arthro Rev, 14:213-220, 2013.

Reply 2: [We have amended the content.](#)

Introduction: It is important that the authors cite the work by Coobs, AJSM, 38:339-347, 2010 which notes on the posterior oblique ligament reconstruction technique as well as the article by Moatshe, AJSM, 44:2864-2869, 2016, which reported on 21 patients and looked at five different reconstruction tunnels, including a transtibial PCL reconstruction tunnel and a posterior root ligament reconstruction tunnel on the tibia. This study should then go on to note that they are attempting to validate this previous study rather than note that their study is the first, because there was already a more comprehensive study published on this topic in a high level journal.

Comment 3: Lines 45 to 47: Please rewrite this to include a purpose and hypothesis.

Reply 3: [We have amended the content.](#)

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Comment 4: Line 59: “Two different configurations...”.

Reply 4: We have amended the typos.

Comment 5: Line 71 to 72: This reviewer is unsure if this is a sufficient statistical analysis for this. I would suggest that this go into more depth.

Reply 5: Dear Reviewer, we are only discussing the PCL tunnel interference with Patellar Tendon, so the data will look simpler.

Comment 6: Discussion Section: This reviewer feels that the discussion section needs to be rewritten to make it acceptable for publication. First, the first paragraph should note what the most important findings were in the study. The most important findings that were found in this study were that it validated the previous study by Moatshe and could offer further guidance as to the trajectory of posterior oblique ligament reconstruction tunnel in relation to Gurdy’s tubercle.

Reply 6: We have amended the content.

Comment 7: Second, more detail on the location and biomechanical function of the posterior oblique ligament, in a succinct manner, should be part of the discussion.

Reply 7: We have amended the content.

Comment 8: In addition, more quantitative anatomic data and reconstruction outcomes for a transtibial PCL reconstruction technique, whether it be single bundle or double bundle, should be provided more in depth in the discussion to make this paper an acceptable review for the readers.

Reply 8: We have amended the content.

Comment 9: Second, for the posterior oblique ligament overview, the anatomic study in JBJS 89:200-210, 2007 which reports on the quantitative location of the posterior oblique ligament should be noted so that the readers know where to place their POL tibial tunnel. In addition, the biomechanical function of the posterior oblique ligament including the study by Griffith, AJSM, 37:1762-1770, 2009 and Part 2 by Wijdicks, AJSM, 37:1771-1776, 2009 on its biomechanical function are important. In addition, the strength of the POL should be noted (AJSM, 38:1638-1646, 2010) as well as the articles by Coobs AJSM, 38:339-347, 2010 and LaPrade, Clinical Orthopedics and Related Research, 470:806-814, 2012 and JOSPT 42:221-223, 2012 should be cited here to note the anatomy, biomechanics, and importance of anatomic location of the posterior oblique ligament reconstruction graft.

Reply 9: We have added the content in discussion (paragraph 2).

Comment 10: Lines 112 to 118: Please omit this paragraph and rewrite it with more current and relevant PCL references. These include the Systematic Review in Arthroscopy (33:2066-2080, 2017) or Double Bundle PCL Reconstruction Outcome Study (AJSM, 46:1809-1818, 2018), The Surgically Relevant Anatomic PCL Landmarks in JBJS (JBJS 94:1936-1945, 2012) as well as The Biomechanically Relevant paper in AJSM (41:35-42, 2013). Also include the article by Wijdicks,

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AJSM, 41:2839-2848, 2013, to provide a more up to date and comprehensive overview.

Reply 10: We have amended the content.

Comment 11: Lines 103 to 111: Please also rewrite this paragraph to make it more relevant to these other peer reviewed articles.

Reply 11: We have amended the content.

Comment 12: Line 119 to 128: Please rewrite this paragraph to note that this study validates the previous study by Moatshe and provides further guidance per tunnel trajectories during a multiple ligament reconstruction.

Reply 12: We have amended the content.

Overall, it appears that it was an oversight that these authors missed a much larger and comprehensive previous study on this. Therefore, the study should attempt to note that this study reinforces the previous study and also update this study to overview more thorough and succinct information about the function of the posterior oblique ligament and more up-to-date anatomical, biomechanical, radiographic and outcome analysis for PCL reconstructions rather than the information they have provided. This would do a much improved service to the reader. I believe that if the authors can do this, then this manuscript should be acceptable for publication.