

December 7, 2020

Dear Editor, Editorial Review Board, & esteemed reviewers,

Please find submitted, our manuscript entitled, “Lateral Unicompartmental Knee Arthroplasty: A Review”, as a revised version of the former submission with incorporation of each of the reviewers comments and suggestions. Comments/changes to each individual response can be found below with accompanying yellow highlights within the manuscript.

Thank you in advance for your consideration and please do not hesitate to contact me with any questions or concerns.

Regards,

Richard S. Yoon, MD
Director, Orthopaedic Research
Division of Orthopaedic Trauma & Adult Reconstruction
Department of Orthopaedic Surgery
Jersey City Medical Center – RWJBarnabas Health
377 Jersey Ave, Suite 280A
Jersey City, NJ 07302
P: 201-716-5850
F: 201-915-2424
E: yoornrich@gmail.com

REVIEWER #1

This is a good and well-structured overview concerning lateral UKA. Despite this, I suggest the author to deepen the outcome section by considering also the different tibial design (i.e. all poly vs metal backed).

- **Thank you for your comment. Much of the literature comparing metal back vs. all poly tibial components is in reference to medial UKA and not lateral. I included a sentence explaining this and indicated that there is no difference between the two designs in the few studies that do in fact focus on LUKA. Line 244-248.**

REVIEWER #2

Nice abstract but there is no mention (and for that, nowhere in the manuscript) of the incidence/prevalence of isolated osteoarthritis of the lateral compartment of the knee. Please provide some detail (with reference) on this issue in the abstract and manuscript. This will allow readers to place the topic of LUKA in the proper context.

- **Thank you for your comment. I included information regarding the prevalence of isolated lateral compartment osteoarthritis and included a citation. This information can be found in lines 2-4 in the abstract as well as lines 35-37 in the introduction. The citation is made in the references section.**

Also, it is stated (lines 16-17) that the LUKA survivorship is comparable to MUKA. MUKA survivorship however is notably varied, depending on the source of information (registry data, independent research publication or developer associated publications). It would strengthen the manuscript if this was pointed out, rather than just stating that LUKA is comparable to MUKA.

- **A statement was included in order to inform the reader that outcomes following MUKA have been varied. This can be found in lines 19-21.**

Core tip: There is no data provided about the under-utilization of LUKA. The number of patients with isolated osteoarthritis of the lateral compartment of the knee is small and should be compared to the number of LUKA procedures to back up this statement.

- **Thank you for your comment. The sentence was changed to “Lateral unicompartmental knee arthroplasty (LUKA) is an uncommon procedure, that when indicated appropriately, shows promising results for patients with isolated lateral compartment osteoarthritis.” This is reflected in lines 31-33.**

Review, expanding indications Line 139: Although this section focusses on the outcome comparison between different age groups, for knee arthroplasty patients with a mean age between 61-72, a long term survivorship upwards of 85% can be considered to be mediocre. The authors should provide a bit more insight in this statement.

- **We adjusted the references in response to your comment. We included the reference by Lustig that showed 100% survivorship at 5 and 10 years. In addition, Xing et al. also showed that outcome was not influenced by age. This information can be found in lines 145-148.**

Line 161: I suggest the authors add to the sentence: ‘While this study does show promising results of a LUKA in an ACL deficient knee, 3 patients is not enough to offer strong conclusions regarding its efficacy’ that this is the case in a selected population (only 70 years and older).

- **We changed the sentence and added “..., and has only been found in a specific patient population of patients over age 70.” This is reflected in lines 167-170.**

Review, pre operative assessment Lines 177-178: this is stated too general. What is this detailed patient history and thorough physical examination? What questions should certainly be asked and what tests should not be omitted from any examination. Please provide more detail

- **We expanded upon the general preoperative assessment to include what each patient should be asked about and what physical exam findings would be beneficial during the exam. We added: “In addition, the patient should be questioned about knee stiffness, mechanical instability, progression of functional**

limitations, and daily functional demands. On physical exam, evaluation should consist of overall limb alignment with comparisons made with the opposite knee. Range of motion, gait analysis, and presence or absence of effusion should also be evaluated during the initial exam.”. This can be found in lines 190-194.

Line 263-264: might there be much selection bias present? What type of study was used: RCT, matched cohort, cases series? Please provide more detail

- **We included more detail in this section to provide more context of the study. More information was added and is as follows: “In a retrospective study comparing robotic assisted LUKA with a conventional technique, Canetti et al. showed that a robotic assisted surgical technique provided a quicker return to sports at an average of 4.2 months vs. 10.5 months for the conventional technique (i.e hiking, cycling, swimming, skiing).^[51] While this was a small cohort of 28 patients who underwent LUKA, both groups were comparable preoperatively. Decisions about whether to use robot assisted technique vs. conventional were determined by robot availability as opposed to patient specific differences. The overall return to sports was high and comparable between both groups.”. This can be found in lines 276-284.**

Line 281-282: the authors find that mobile bearing LUKA is not doing very well and that fixed bearing LUKA should be preferred. In general, the manuscript states that LUKA can be quite successful without mentioning that this is the case for fixed bearing LUKA only. I think that in other sections of the manuscript this also should be emphasized, for example in the conclusion section.

- **The authors of that study, Gunther et al., had reports a high failure rate and a high rate of bearing dislocation. We feel it was important to include this as a possible cause for revisions however more recent studies have not shown this same high failure rate or high rate of dislocations. We added a sentence to clarify as follows “While this is cause for concern, this high failure rate in mobile**

bearing components has not been reproduced in more recent studies.^[48]”. This is reflected in lines 300-302.