Reviewer's report

Title: Asian-Specific Total Knee System: 5-14 year Follow-up Study

Version: 3 Date: 7 August 2011

Reviewer: John Cooper

Reviewer's report:

The manuscript is suitable for peer review and falls within the scope of this journal. The authors have successfully reported mid-term results of a specific implant in a large cohort of patients, which to my knowledge have not been previously reported. The title and abstract are appropriate and accurately describe the authors’ research, and with several minor text corrections, have placed it into the proper context to the existing literature. Any ethical issues have been appropriately addressed by the authors, and other than a few methodological questions which I have outlined below, they have performed the study in a sound scientific manner. The discussion and conclusions are well-balanced and are supported by the data. This study represents an advance in the literature, and should serve as a solid reference for surgeons who use this type of prosthesis. Although there are several questions that need to be addressed, I congratulate the authors on this effort, and look forward to their published manuscript.

Recommend text corrections as follows:

Major Compulsory Revisions:

1. p10, statistical analysis: I’m unclear as to why the authors use a Wilcoxon signed-rank test (if this is correct?) for part of the statistical analysis versus a student t-test for another part. The former is a test for non-parametric data and the later for parametric data. If the authors feel this is the correct methodology, they should offer an explanation as to why some of the data is parametric and other data is non-parametric.

Minor Essential Revisions:

1. p5, 1st paragraph of Materials & Methods: The time period over which the study group was implanted with TKA should be listed (ex: “Of those, we investigated a consecutive series of 1055 knees in 595 patients (522 females and 73 males) who had undergone TKA between (month, year) and (month, year). All study patients had a minimum of 5 years follow-up. The preoperative diagnosis…”)

2. p5 line 3: change “implanted in 1801 patients with 3143 knees” to “implanted in 3143 knees in 1801 patients”

3. p5, line 9: List how many surgeons performed the procedures, as this allows a
better interpretation of the data (ex: “Procedures were performed by ___ surgeons, including senior authors.”)

4. p7, line 12: change “cement” to “cemented”

5. p7, line 14: change to “bone cuts were performed by”

6. p9, lines 1-2: “femoral tibia angle” should be changed to “femorotibial angle”

7. p10, line 9: Wilcoxon t-test = Wilcoxon signed-rank test?

8. p10, line 16: change “followed” to “follows” (as well as 3 more times in the following sentences).

9. p11, line 6: change “The angle of knees” to “Range of motion”

10. p12, line 6: change “The incidence of radiolucent lines was noted in…” to “Radiolucent lines were noted in..”

11. p12, line 7: I don’t follow how the incidence of radiolucent lines is 5.6%. By my calculations, 93/817 = 11.4%. Please explain. (see also p16, line 1)

12. p13, line 2: please explain what is meant by “patellar lateralization”

13. p13, line 11: “cumulative success rate” should be rewritten as “cumulative survival rate”, as survival can be quite a different outcome measurement than success. (same for p14, line 1).

14. p13, line 12: the comma is in the wrong place “95%, CI”

15. p16, line 5: It’s unclear what the author means by “this model can also correspond to a severe transformation”

16. p17, Conclusion line 1: Asiand is misspelled

17. p26. Gender should refer to “male and female” rather than “man and female”

18. p28. No 2 should either state “severe pain” or “severely painful” and No 7 should state “recurrent hemarthroses”

19. Figure 5: the Y-axis should be labeled.

Discretionary Revisions:

1. Line numbers are always helpful in review of any manuscript, and it is recommended these should be added to future manuscript submissions.

2. Background: The authors should indicate whether results of the FNK prosthesis have or have not been previously reported. If not, this would make this paper more meaningful.

3. p6, line 5-6: This sentence is not needed and should be removed: “The FNK provides high coverage of the Japanese distal femur.”
4. p6, line 8: “about 4mm” – approximate measurements should not be used in this type of description. Also see figure legends.

5. p7, line 6: I don’t understand the author’s description of the lateral parapatellar point.

6. p8, line 6: Recommend that this first sentence be removed, as it is not pertinent to the research design, and none of these results are reported. Begin this paragraph with “From January to December 2009…”

7. p8, last paragraph: Should be rewritten for clarity: “Clinical evaluation was performed with use of the knee and function scores of the Knee Society clinical rating system [8]. Patients were grouped based on scores as Excellent (>90), Good (80-89), Fair (70-79), or Poor (<70). Range of motion (ROM) was measured preoperatively and at final follow-up by _____ (the surgeon, fellow, research assistant?) using a goniometer.”

8. p11, radiographic evaluation, 2nd sentence: should be rewritten to read: “A neutral knee axis was defined as an FTA between 170-175°, a varus knee was defined as an FTA > 175°, and a valgus knee was defined as an FTA < 170°.

9. p14, line 4: change “The femoral distal size” to “Distal femoral morphology”

10. p16, line 6: “this implant” should be changed to “this type of constrained implant”, as the referenced study does not discuss specifically the FNK PS implant.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.