

Peer Review File

Article information: <https://dx.doi.org/10.21037/aoj-23-31>

Review Comments

Comment: The article is well written. There are only minor typos (for example 258: typo, six instead of fix). It can be published without additional modifications’.

Reply: Thank you for taking the time to evaluate our manuscript. In line 258, six has been modified to fix.

Editorial Comments

Introduction

Comment 1: ‘We suggest authors add a paragraph at the very beginning to briefly introduce the background of "Total Hip Arthroplasty". This would effectively avoid younger peers from getting lost’.

Reply 1: We have modified the first paragraph accordingly, line 80:

‘Total hip arthroplasty (THA) is a procedure that is used when the cartilage in the joint is damaged and leads to excessive pain and decreased function. The first successful modern day THR was performed by Sir John Charnley at Wrightington Hospital and it was designed as a low friction arthroplasty. Technology and surgical techniques have improved since that time and it has now’

Comment 2: The introduction should point out why the authors need to write this article, what has been previously reviewed but not discussed (so this review needs to be discussed), and what value this article has to the practice. In brief, a structured informative introduction is necessary (structured in three parts): a) Background, b) Rationale and knowledge gap, c) Objective.

Reply 2: The authors have modified the manuscript to reflect the changes suggested. The introduction has been split into Background- line 79, Rationale and knowledge Gap- line 95 and Objective- line 104. The purpose of the manuscript has also been added- line 112.

‘The purpose of this review is to summarise the existing evidence and present the best evidence available to aid surgeons with regards implant decision making in the challenging scenario of femoral bone loss’.

Main Body

Comment 3: Please cite the reference for this sentence and check the entire manuscript to address similar concerns. For example:

- Lines 61-62: "the quantity and quality of the bone dictates implant selection and reconstructive options".

Reply: The appropriate reference has been added- line 166.

- Lines 130-131: "In most of these cases cancellous bone is missing, and therefore cemented fixation is not reliable, and should only be used in the very elderly with a limited life expectancy".

Reply: The appropriate reference has been added- line 142.

- Line 180: "Line 180: "A study by Duncan et al. (2009)"

Reply: The appropriate reference has been added- line 216.

Comment 4: Line 109: "(American Academy of Orthopaedic Surgeons)" should be "(American Academy of Orthopaedic Surgeons, AAOS)".

Reply 4: This has been modified accordingly- line 144

Comment 5: Line 470: The title of Ref. 14 should be "Management of femoral bone loss in revision total hip arthroplasty".

Reply 5: The title has been modified accordingly – reference 14

Comment 6: Table 1 is almost the same as in Ref. 14. Tables 2-3 are from a previous article (PMID: 24084434). We suggest the authors delete the three tables and only keep the description in the text (citing original references) due to the copyright issue and necessity.

Reply 6: Whilst these are universal classifications and well known, we thank the editor for the comments and completely understand the need to remove all references to the tables and the tables. Themselves. Lines 16, 138, 145 and 150. We have also removed the tables at the end of the document.

Comment 7: We recommend including a separate section on the STRENGTHS and LIMITATIONS of this review to promote a more intellectual interpretation.

Reply 7: We have added a what we believe to be the strengths and weakness of the article.

Line 418.

'Strengths and Limitations

We believe this is a robust analysis of the current evidence available on the topic. A wide variety of subject matter is presented with inclusion of seminal papers and more novel approaches. The evidence presented here represents the best current practice and it has been condensed to help shape opinion and decision making. Though, we appreciate there are limitations. There does appear to be some heterogeneity in the literature which makes direct comparisons more challenging. There is a paucity of randomized controlled trials and studies would ideally increase sample sizes in order to reduce type II errors on statistical analyses. We suggest greater work on the subject in order to drive the gold standard'.

Minor Suggestions

Title

Comment 8: In the title, please clearly identify this manuscript as a Clinical Practice Review. E.g. "Treatment of Femoral Bone Loss in Revision Total Hip Arthroplasty: A Clinical Practice Review".

Reply 8: We have included this in the title- line 3

Abstract

Comment 9: In the abstract, please refine this unstructured abstract (200-350 words max). For example, specify the rationale for publishing this review and the clinical importance of this clinical review. Of note, the Clinical Practice Review does not require a Highlight Box and the Highlight Box (lines 31-46) should not be in the Abstract.

Reply 9: The authors have modified the abstract to flow in a more traditional manner and describes the objective of the article and the benefits of it. Word count 289. No highlight box exists.

'Patient and implant selection is essential to optimize outcome. Femoral bone loss classifications such as the AAOS, Gross, and Paprosky classifications permit surgeons to systematically manage bone stock deficiencies and guide implant selection. Here we provide a comprehensive report on the pitfalls and management of this reconstructive challenge.

Preoperative planning remains vital to the treatment of femoral bone loss in revision hip arthroplasty and the authors believe it is essential and should include the entire femur. This

commonly includes imaging for bone loss such as Judet views or CT scan and must include the entire femur though additional radiographs such as Judet views apply more for acetabular bone loss as opposed to femoral bone loss. All patients should have pre-operative work up to exclude infection. If any of these results area elevated, an aspirate and sampling is required to guide microbiological management.

Classically with regards femoral revision surgery, uncemented fixation has proven to give the best outcomes but surgeons must remain flexible and use cemented fixation when necessary. Adequate proximal bone stock permits the use of implants used in primary joint surgery. Implants with proximal modularity can be used in cases where bone stock allows for superb proximal bone support. The vast majority of femoral revisions have inadequate proximal bone stock, thus distally fixed stems should be used and have been shown to provide both axial and rotational stability provided there is an intact isthmus. Taper fluted stems can provide good outcomes even in cases of major bone loss. However, with severe bony loss, impaction grating or the use of a megaprotsthesis is sometimes necessary and is down to surgeon choice and preference.

This article has been written as a guide for management and summarises the best evidence available.

Format

Comment 10: Please kindly revise the reference formatting as indicated (<https://pm.amegroups.com/pages/view/guidelines-for-authors#content-3-6>).

Reply 10: The references have been modified accordingly including removal of the any additional authors beyond 3 and ensuing Vancouver style followed. References section and changes tracked.

Comment 11: Please define all abbreviations mentioned for the first time, such as "THA" (line 55). Please check the entire manuscript to address similar concerns.

Reply 11: We have modified accordingly and changed to THA, line 63