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Reviewer A

This study analyzed the outcomes of fourteen consecutive patients with DFF or PDFF treated with a megaprosthesis implant. The mean KSS knee score was 79.5 (\pm 11.2); the mean KSS function score was 69.0 (\pm 17.9). The mean OKS was 31.6 (\pm 8.9). The mean age at intervention was 82.1 (\pm 7.6) years. Two delayed wound closures and one chronic prosthetic joint infection (PJI) were observed. No death was observed at the last follow-up.

In general, this is an interesting study. The authors concluded that megaprosthesis implants could be a suitable option in elderly, arthritic patients diagnosed with complicated DFFs and PDFFs. However, there are a few concerns, which need to be clarified:

1. Among the 9 patients with PDFF, a couple had type 2 fractures. Usually, patients with type 2 fractures should manage with a locking plate and/or cerclage wires. Why had the revision with megaprosthesis implants been chosen instead of?

Reply 1.: Thank you for your suggestion. Patients diagnosed with PDFF are investigated using three different classifications at our institution. We believe that each classification provides valuable information for decision-making and that their integration ensures the best treatment choice. Patients diagnosed with type 2 PDFF in one classification were often classified as type 3 PDFF in the others. In general, residual bone stock and bone quality were crucial, as well as the fracture's characteristics in decision-making. Type 2 fractures treated with megaprosthesis implants were those characterized by insufficient bone stock and poor bone quality, in which a plate could lead to synthesis failure and prolonged immobilization. In contrast, a megaprosthesis implant resulted in rapid mobilization and ROM recovery, reducing the postoperative bed rest period.

See in the text 1.:

“Fourth, in our institution, patients diagnosed with PDFF were examined using three different classification systems, and each classification provides helpful information for decision-making.”

2. Of the 5 patients with DFF, there were two with 33C2 and three with 33C3. Had the megaprosthesis implants been individually designed based on the pre-operative 3D prints?

Reply 2.:

Thank you for your suggestion. Both patients diagnosed with DFF and PDFF were examined with a CT scan of the involved body segment.

See in the text 2.:

“The patient's fractures were evaluated with standard anteroposterior (AP) and lateral X-rays and a targeted computed tomography (CT) scan of the involved body segment. Moreover, 3D CT scans are routinely developed at our institution. Hence, each patient received personalized preoperative planning based on 3D CT scans to correctly determine the resection height, megaprosthesis design, and modular characteristics”.

3. How had the patient with chronic prosthetic joint infection been treated? What were the final outcomes?

Reply 3.: Thank you for your suggestion. We have modified our text as advised.

As shown in the Discussion section, the patient with chronic PJI was initially treated with deep debridement and prolonged targeted antibiotic therapy. However, despite the treatments, chronic PJI led to the limb amputation.

See in the text 3.:

“However, only one patient had a major PJI as a complication that led to limb amputation after several salvage procedures, such as deep debridement and prolonged antibiotic therapy.”

Reviewer B

Good paper. Modest group of patients but lots to be learned from this group.
Just a few changes of words based upon language.

Introduction

Line 105 - rapid "return" to....

Line 108 - "offered" not "prospected"

Reply Introduction:

Thank you for your suggestion. We have modified our text as advised.

See in the text:

“providing a rapid return to daily activities”

“Although the literature has offered some indications”

Methods

Line 149 - "exposure" not “exposition”.

Reply Methods:

Thank you for your suggestion. We have modified our text as advised.

See in the text:

“The surgical access is usually extended from the previous scar, obtaining an extensive exposure”