Primarily Constraining Custom Triflange Patients: Weighing the risks of Instability vs. Fixation

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INTRODUCTION:
Custom triflange acetabular components (CTACs) can be used successfully to manage patients with severe acetabular bone loss. However, instability remains one of the primary reasons for reoperation and revision for these patients. Primarily constraining these patients is an attractive option to minimize the risk of instability but theoretically puts more stress on the implant fixation and leads to subsequent failure. Therefore, the purpose of this study was to compare outcomes between patients managed with standard versus constrained liners at the time of CTAC implantation.
METHODS:
Our retrospective multicenter cohort study identified 81patients treated with a CTAC for severe acetabular bone loss with mean 5-year follow-up. Patients were stratified into two cohorts based on liner constraint, either standard (n=37) or constrained (n=44).

The primary outcome was aseptic CTAC failure which was defined as failure to in-grow requiring explantation. Secondary outcomes included any revision of the CTAC, revision of arthroplasty components distinct from the custom component (head, liner, or femoral component), reoperation for all causes and dislocation. Kaplan-Meier survival estimates were used to compare the two cohorts.
RESULTS:
We found no difference between standard and constrained liners in terms of aseptic CTAC survival (p= 0.7554) or revision of the custom implant for any cause (p=0.70). Furthermore, there were no difference between the cohorts in terms of revision of arthroplasty components distinct from the custom component (p =0.8329), reoperation for all causes (p =0.9365) or dislocation (p=0.16).
DISCUSSION AND CONCLUSION:
Primarily constraining CTACs does not lead to an increase in aseptic failure, component revisions or reoperation. Given this, the use of acute constrained liners represents a safe and appropriate option in patients with substantial risks of instability without increased risk of component failure at mean 5-year follow up. Therefore, we recommend consideration of constrained liners in high-risk instability patients requiring CTAC.