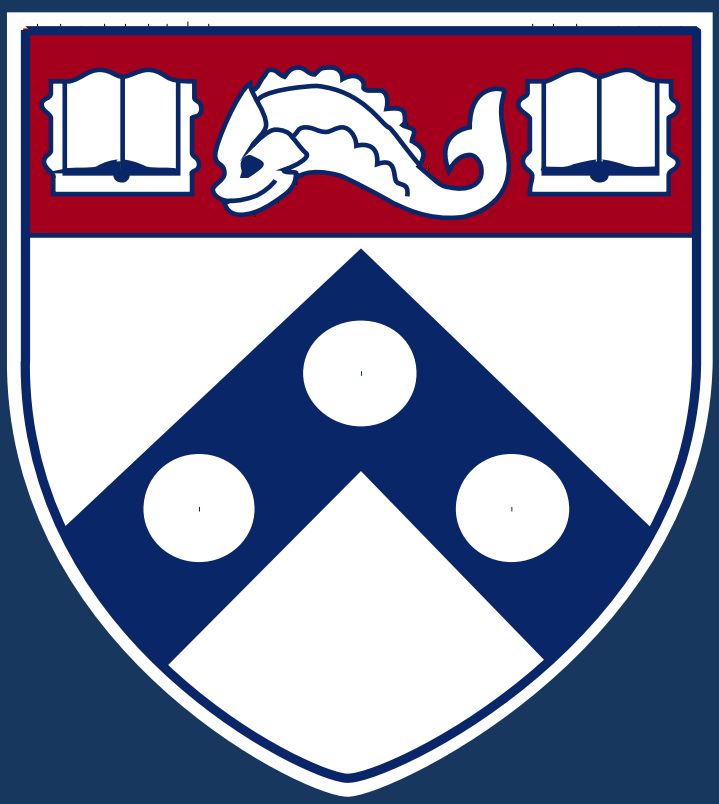




DIGITAL PLANNING AND IMPLEMENTATION FOR A PREDICTABLE OUTCOME IN FULL-ARCH IMPLANT SURGERY USING THE STAR CONCEPT: CASE REPORT

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Introduction

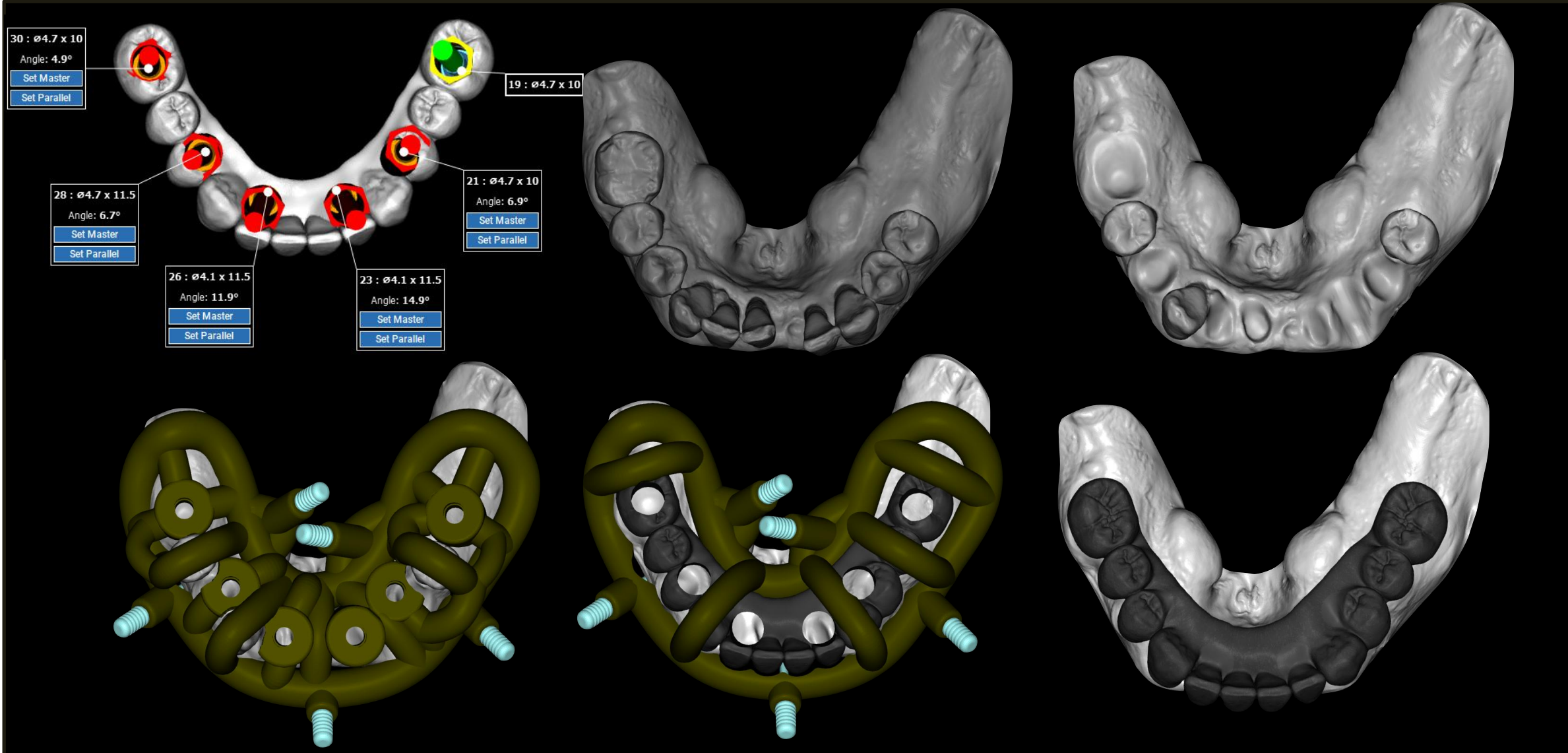
Full-arch implant rehabilitation delivers predictable function, esthetics, and long-term stability for edentulism or terminal dentition. Digital workflows, incorporating the STAR concept, reference denture technique, prosthetically driven planning, guided implant surgery, and CAD/CAM restorative design, can improve accuracy and efficiency by following a chairside conversion and postoperative adjustments. This case report describes a staged approach for a 54-year-old male prioritizing rapid mandibular function and esthetics before an upcoming life event.

Case Report

A 54-year-old male presented with an edentulous maxilla and periodontally compromised mandibular dentition. Chief complaint: “I’m getting married in three months and I need my teeth to be fixed.” The patient was satisfied with his existing maxillary denture. Examination and imaging showed Stage IV Grade C periodontitis in the mandible with poor prognosis. The treatment plan was a staged full-arch rehabilitation: (1) Mandible: fully guided surgery and immediate fixed provisional; (2) Maxilla: new interim denture. The reference denture established vertical dimension, occlusion, and esthetic parameters and was utilized for guide fabrication, expediting surgical execution and provisionalization.



Picture 1. Pre-treatment photographs and panoramic radiograph.



Picture 2. Implant Surgical Planning.

Surgical & Prosthetic Approach

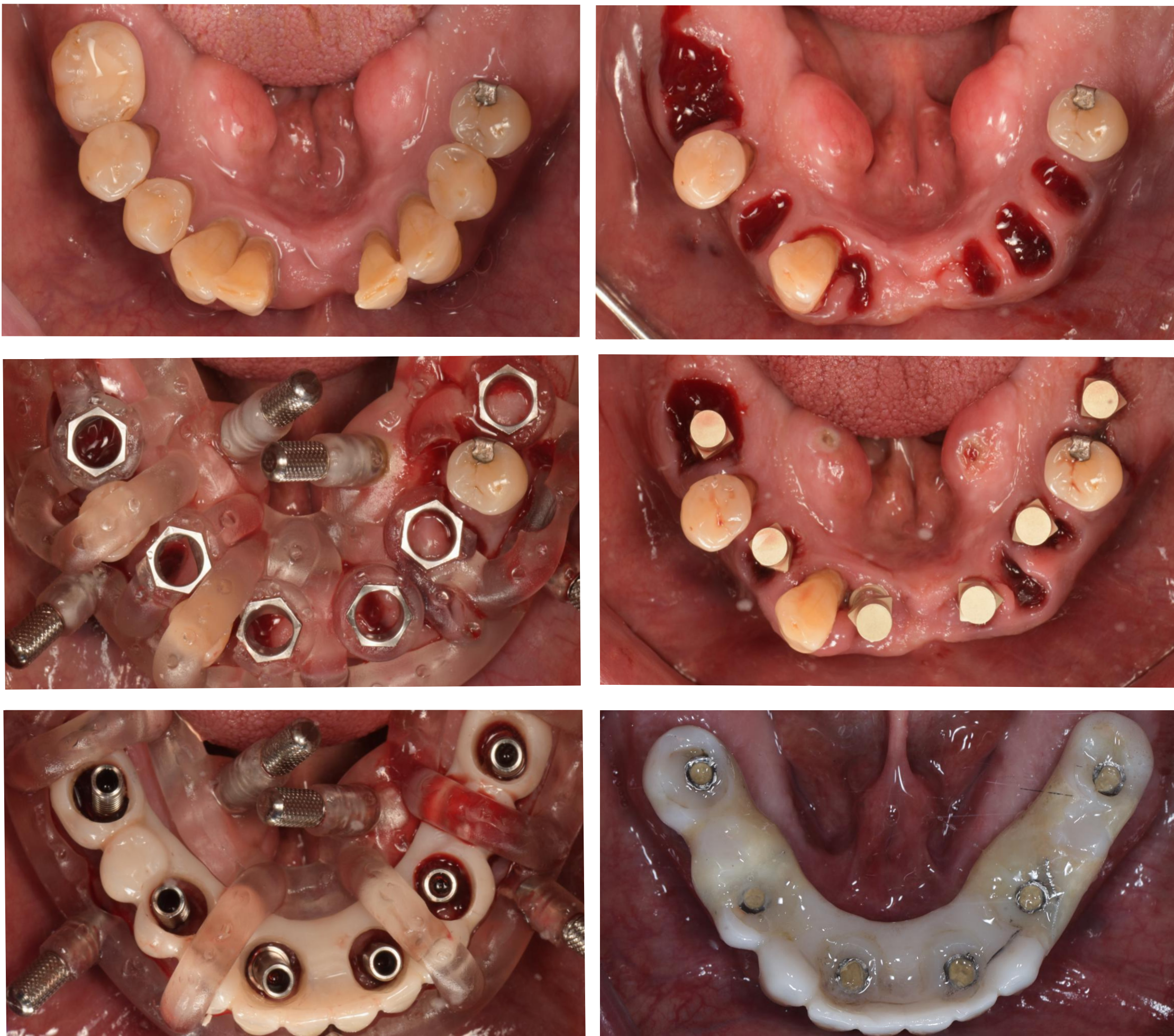
Mandible: Selective extractions were performed, retaining three teeth to seat the fully guided surgical template. Six implants were placed per the prosthetic plan. A pickup guide transferred implant positions to a pre-fabricated prototype, enabling immediate loading with a screw-retained provisional hybrid.
Maxilla (Pending): A new interim denture was fabricated to optimize function/occlusion; guided implant placement is planned after adaptation and mandibular integration.

Results

Mandibular implants achieved excellent primary stability with uneventful healing and no signs of infection or mobility. The immediate provisional provided stable occlusion, improved comfort, and esthetics. The new maxillary interim denture improved function and served as a reference for the future fixed phase. The patient reported high satisfaction and resumed normal activities while integration is monitored.

Discussion

Utilizing the STAR concept and reference denture technique to dictate vertical dimension and esthetics, the fully guided protocol minimized intraoperative variability and shortened conversion time. Retaining three teeth enhanced guide stability and accuracy. Staging the maxilla reduced risk while occlusion matured against the mandibular provisional. Current limitation: interim prostheses; longitudinal peri-implant and prosthetic outcomes are pending, including function.



Picture 3. Surgical Treatment.



Picture 4. Post-op Photos with the designed prostheses.

Conclusions

Using the STAR concept with fully guided workflow, selective extractions, guided placement of six mandibular implants, and pickup-guide conversion to an immediate screw-retained provisional—we achieved precise positioning, fewer intraoperative adjustments, and reduced chair time. A new maxillary interim denture optimized occlusion during healing. Function and esthetics were restored immediately, allowing the patient to eat, speak, and smile confidently in a short time for his wedding, with clear gains in comfort and quality of life.

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