

The Use of Lyophilized, Tri-layer Human Amnion/Chorion Membrane (LHACM) as a Barrier Membrane Undergoing Lapiplasty 3D Bunion Correction Surgery

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OBJECTIVE

The following case studies evaluated the effectiveness of using LHACM as a barrier membrane over hardware in patients undergoing Lapiplasty 3D Bunion Correction surgery. The goal was to examine the impact of LHACM* as it pertains to improved range of motion (ROM) and postoperative complication risks commonly associated with this procedure, such as infection, pain and neurological deficits.¹

METHODS

Patients received conservative care for chronic and progressive pain in a first metatarsal phalangeal joint (MTPJ). Failure of conservative care for approximately 6 months led to the decision for surgical intervention. The technique involved an incision to expose of the first ray segments and the Treace hardware device was inserted and fixated.¹ LHACM was then placed over the hardware, ensuring complete coverage of the hardware, and the incision was then closed in layers (Figure 1).

Case 1

62 year-old female patient presented with chronic and progressive pain in left, first MTPJ. Severe hallux valgus was confirmed with clinical evaluation and imaging studies. Patient's BMI was 32.4 and had no other relevant previous medical history; however, the presence of soft osteoporotic bone was noted during the procedure.

Case 2

29 year-old female patient presented with chronic and progressive pain in left, first MTPJ, arch and ball of foot. Severe hallux valgus and metatarsal adductus were confirmed with clinical evaluation and imaging studies. Patient's BMI was 33.3 and had no other relevant previous medical history.

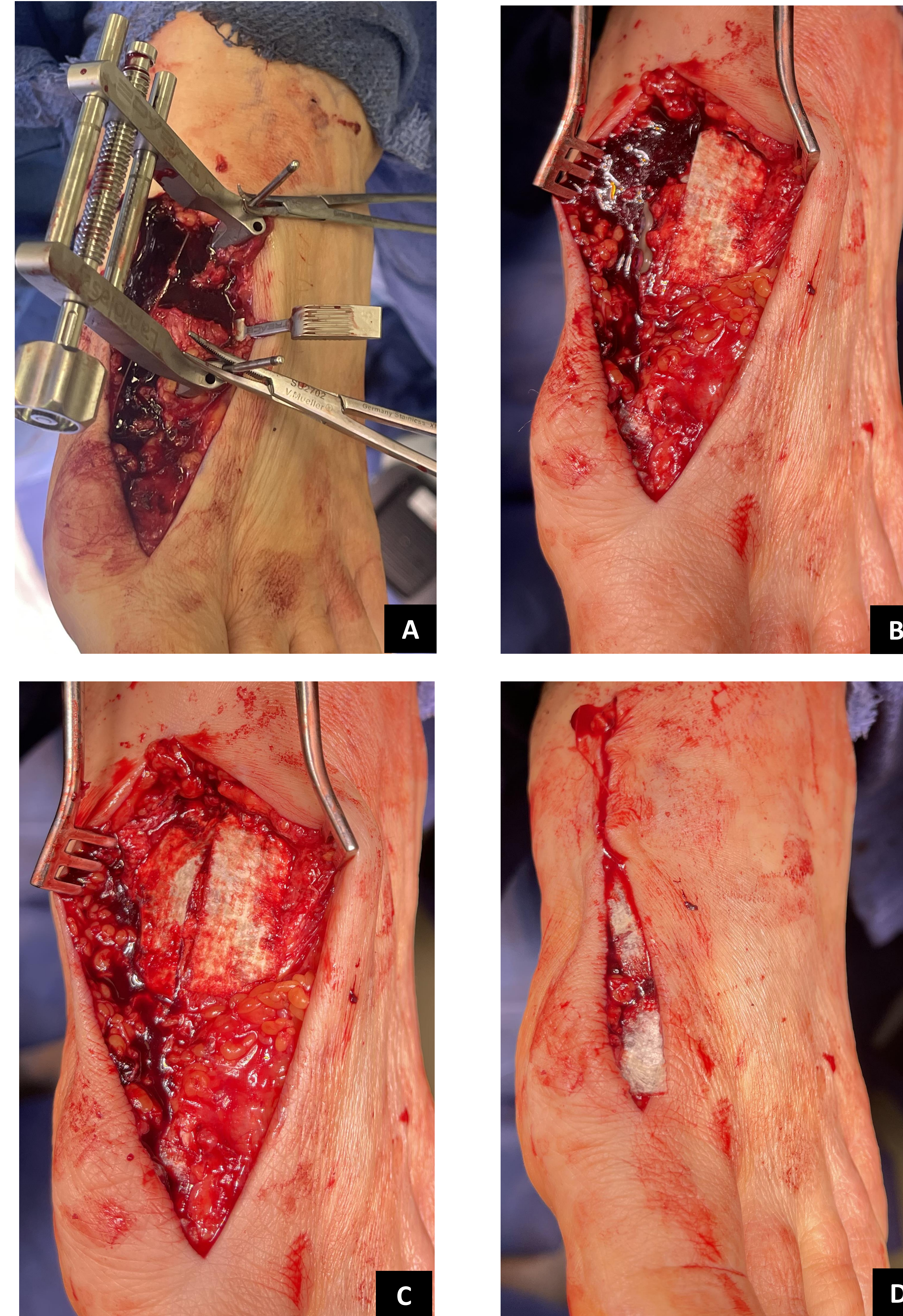


Figure 1. Representative case using the Treace Lapiplasty 3D Bunion Correction hardware. Placement of hardware system(A) and final placement of LHACM over hardware and under incision (B, C, D).

RESULTS

All patients were followed up at approximately 1 week, 4 weeks, 6 weeks, 10 weeks, 14 weeks and 6 months post-operatively. At each follow-up visit, patients were evaluated for signs of pain, ROM, incisional healing quality and neurological deficits. Patients transitioned to a CAM boot by week 3 and were full weight bearing by week 6. Post-operative pain scores improved to patient reported scores of 1 out of 10 by week 6. Noted improvements in ROM at approximately 3 months were measured at 30 degrees dorsiflexion and 20 degrees plantarflexion in both patients. Incisional healing progressed normally with no reported surgical site occurrences (SSOs) and healed with no signs of swelling or scar tissue by week 12. No neurological deficits reported.

CONCLUSION

The use of LHACM as a barrier membrane during Lapiplasty 3D Bunion Correction surgery is an effective strategy to improve surgical outcomes. This surgeon's experience totals over 25 patients to date with reported outcomes similar to the patients described herein. Larger studies are warranted and necessary to confirm these findings.

References

1. Liu GT, Chhabra A, Dayton MJ, et al. One- and Two-Year Analysis of a Five-Year Prospective Multicenter Study Assessing Radiographic and Patient-Reported Outcomes Following Triplanar First Tarsometatarsal Arthrodesis With Early Weightbearing for Symptomatic Hallux Valgus [published online ahead of print, 2022 Apr 27]. *J Foot Ankle Surg.* 2022;S1067-2516(22)00118-1. doi:10.1053/j.fas.2022.04.008

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Disclosures:

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*LHACM = AmnioEffect (Mimedx Group, Inc, Marietta, GA)