A Novel Surgical Approach in Treating Moderate to Severe Hallux Rigidus with Combined Cheilectomy, Lapidus Arthrodesis, and Intra-articular Dehydrated Human Umbilical Cord Allograft

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SAWC Spring 2023

OBJECTIVE

Hallux rigidus (HR) is a common arthritic condition involving the foot with a 2:1 inclination for females.[1,2] Narrowing of the first metatarsophalangeal joint (MTPJ), osteophytes on the metatarsal head/proximal phalanx, and decreased range of motion (ROM) are routine. We describe a surgical approach to severe HR via a combined Cheilectomy and Lapidus arthrodesis along with concurrent placement of an intra-articular covering, a dehydrated human umbilical cord (DHUC) allograft. The objective of the combined procedures is to improve postoperative pain, range of motion, and function.

METHODS

The setting of this retrospective case series was a community-based outpatient podiatry center. Informed consent was obtained from all participants. Three patients presented with Stage 2 or 3 HR. Each patient underwent a Cheilectomy and Lapidus arthrodesis plus intra-articular placement of a DHUC allograft as a barrier between the 1st metatarsal head and proximal phalange. Pre- and post-operative assessments of pain, ROM, and function were followed over 14 to 30 months.

RESULTS

Pre-operative ROM was measured at five, two & fifteen degrees of dorsiflexion in patients one, two and three, respectively. All patients reported pain related to their condition. Post-operative ROM increased to 45, 40 & 45 degrees of dorsiflexion, respectively, with no reported pain at first MTPJ at final follow-up. Patients reported they were weight-bearing by four weeks and able to wear regular shoes by twelve weeks. No adverse events were reported.

Figure 1. Hallux Rigidus

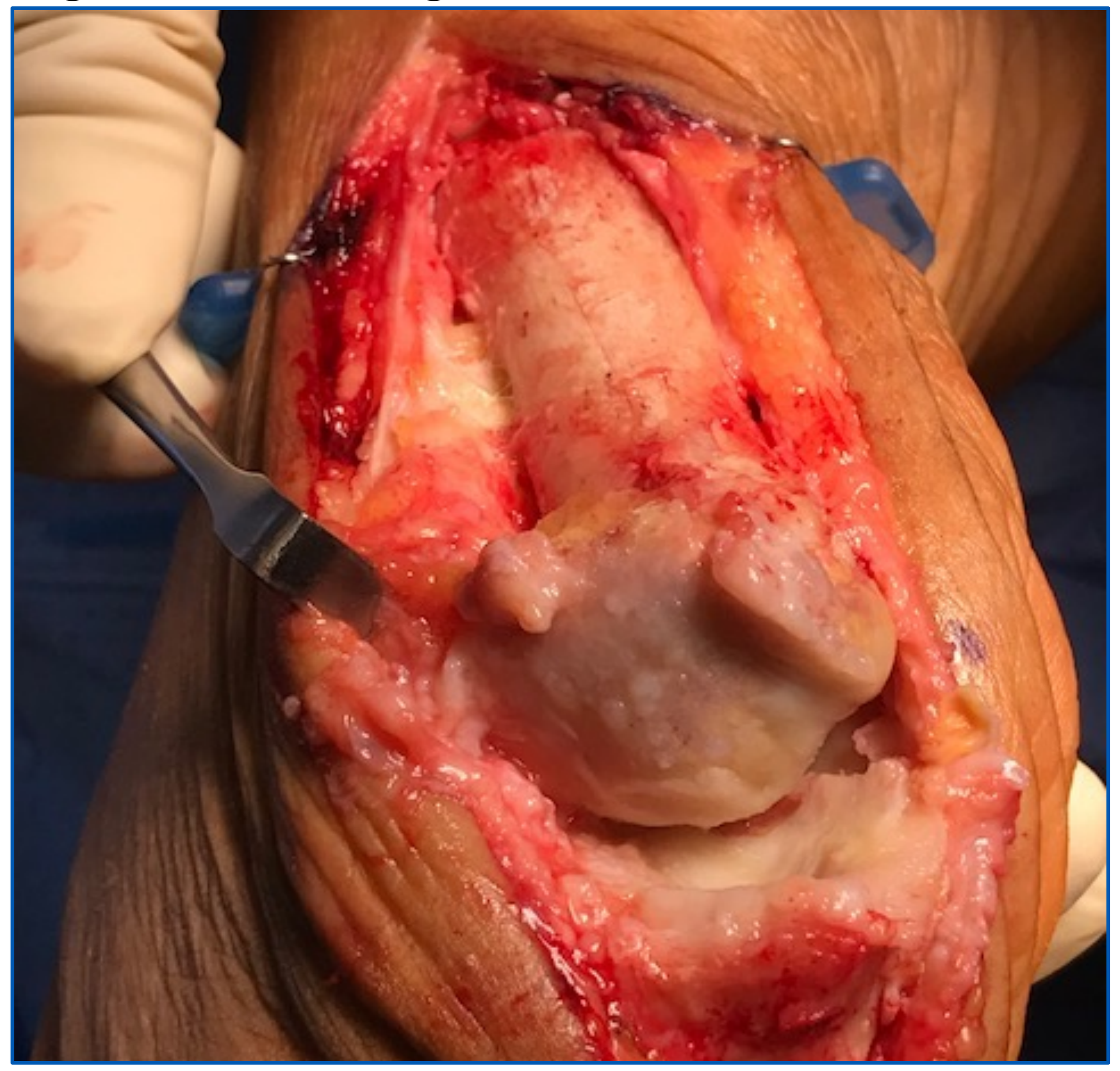
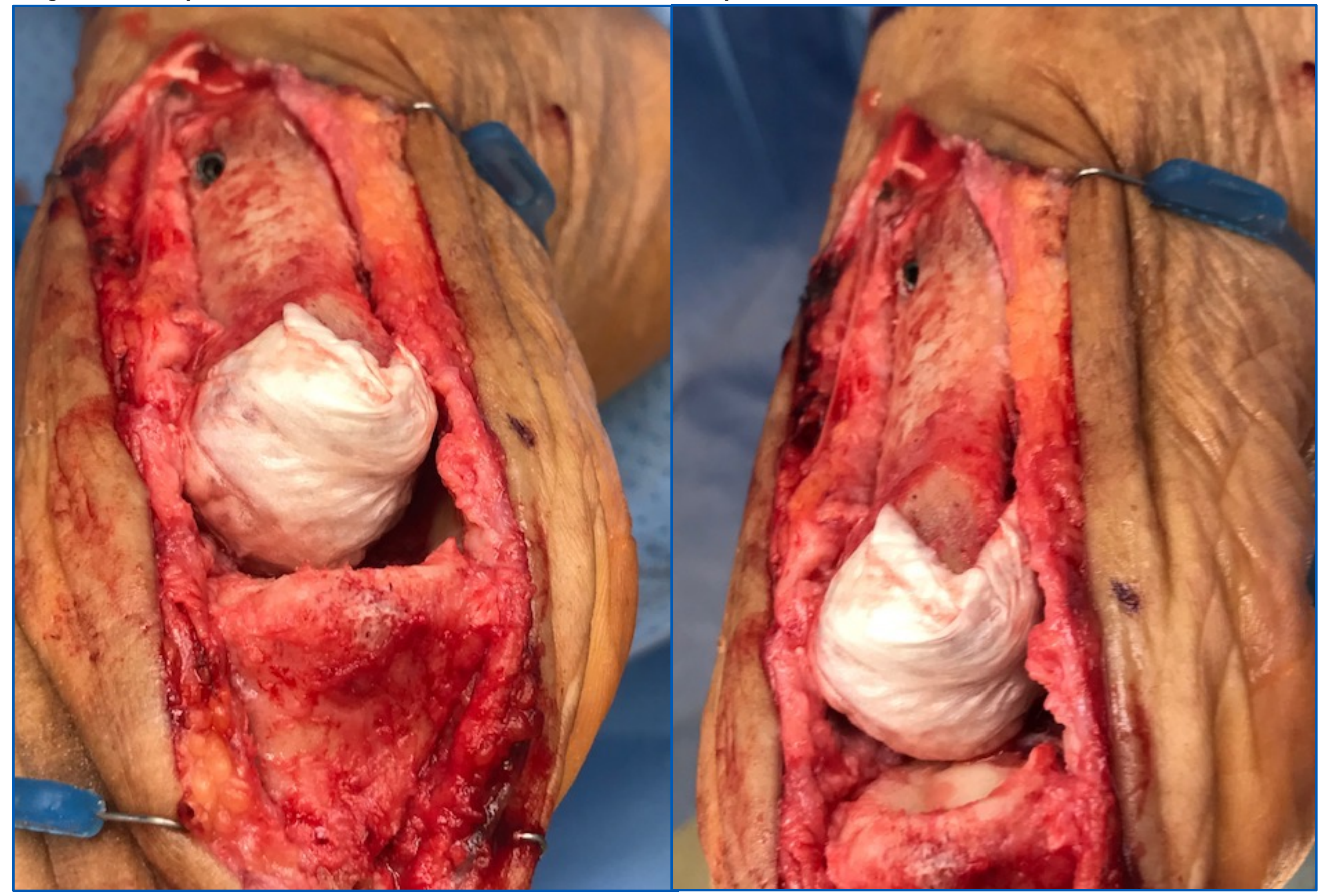


Figure 2. Cheilectomy

Figure 3. Lapidus arthrodesis with intra-articular placement of DHUC



CONCLUSION

The intra-articular placement of DHUC as a barrier between the 1st metatarsal head and the proximal phalange in the surgical correction of moderate to severe HR has shown promise. Post-operatively there were observed increases in ROM and functional outcomes along with observed reductions in post-operative pain, thus allowing for a faster return to normal daily activities without significant adverse events. These findings warrant further investigation.

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References

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2. Razik A, Sott AH. Cheilectomy for Hallux Rigidus. Foot Ankle Clin. 2016 Sep;21(3):451-7. doi: 10.1016/j.fcl.2016.04.006. Epub 2016 May 24. PMID: 27524700.

Format:	Case Series
Length of Follow-up:	14 - 30 months
Level of Evidence:	IV
Classification:	Forefoot Reconstruction

Disclosures: Poster development supported by MIMEDX Group, Inc.