

Adult Foot Macroductyly: A Staged-Approach Case Report for the Great and 2nd Toes

Casie Blanton, DPM; Bryan Hall, DPM
University of Cincinnati Medical Center - Cincinnati, Ohio

Statement of

Macroductyly is a rare congenital malformation characterized by enlargement of skin, subcutaneous tissue, nerve, joint, and bone. Amputation is often performed over procedures that would be more cosmetic and functionally pleasing, especially in the skeletally mature. The purpose of this study is to show an alternative for treatment of macroductyly that preserves the toe(s) and is more satisfying to the patient overall.

Literature Review

There are few literature reviews discussing the treatment for macroductyly, however de-bulking, epiphysiodesis, transverse and longitudinal osteotomies, toe amputation, and metatarsal ray amputations have been described.

Case Study

A 29-year-old Vietnamese female with no significant past medical history presented to our clinic for surgical reconstruction of macroductyly involving the great and 2nd toe of the right foot. Pre-operative x-rays were obtained which revealed enlargement of the 1st and 2nd digit globally, as well as one large accessory ossicle. Patient underwent a staged procedural approach to avoid compromising the vascularity of the toes. Stage 1 included accessory bone excision, multiple exostectomies of digits 1 & 2, middle phalangectomy, 2nd digit interphalangeal joint (IPJ) arthrodesis, hallux IPJ arthrodesis, and soft tissue de-bulking of both digits. Stage 2 (8 months later) included 1st distal metatarsal osteotomy, reverse akin osteotomy of hallux, and serial soft tissue de-bulking of digits.



Figure 1. (Above) Clinical presentation prior to reconstruction.



Figure 2. (Above) Pre-operative radiographs.



Figure 3. (Left) 2 weeks post-operative clinical presentation after stage 1.



Figure 4. (Right) 2 months post-operative clinical presentation after stage 1.



Figure 5. (Left) Immediate post-operative clinical presentation after stage 2.



Figure 6. (Below) 16 months post-operative radiographs and clinical pictures obtained after stage 2.

Results

The patient was very satisfied with the results cosmetically and functionally as a result of selecting an alternative toe-salvaging procedure in a skeletally mature patient.

Discussion

Concerning macroductyly, the goal of treatment is to make a functional and cosmetically pleasing foot which can accommodate regular shoe wear. Epiphysiodesis is not an option with the skeletally mature, therefore surgeons are left with de-bulking as procedure of choice when attempting toe-salvage. When considering soft tissue de-bulking, it is important to respect the anatomy and to be able to discern when you should stop and consider a staged-approach to not risk necrosis of the toe due to compromising the vascularity. This case report is a good example of an alternative to amputation in the skeletally mature and how we chose to respect the anatomy by electing for a staged-approach management.

References

1. C Sever et al. Adult Foot Macroductyly: A Case Report and Review of Literature. Archives of Clinical Experimental Surgery 2014;3:123-128
2. Kregel S et al. Macroductyly: report of eight cases and review of literature. Pediatr Dermatol 2000;17:270-276
3. Fengdong Z et al. Macroductyly of the great toe for thirty-five years. J Plast Reconstr Aesthet Surg 2009;62:e520-522.
4. Chang CH et al. Macroductyly of the foot. J Bone Joint Surg Am 2002;84-A(7):1189-1194.
5. Hop MJ et al. Ray reduction of the foot in the treatment of macroductyly and review of literature. J Foot Ankle Surg. 2011;50:434-438.

Financial Disclosures

None