

ACFAP Quarterly

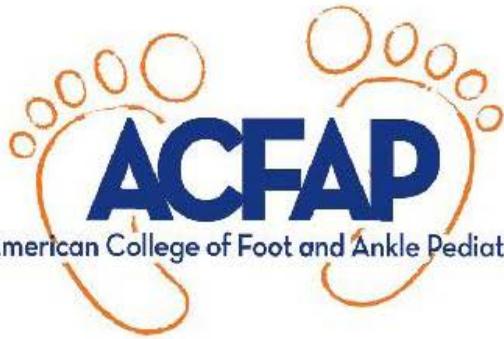
American College of

Foot and Ankle Pediatrics



Spring 2017

www.acfap.org



The American College of Foot & Ankle Pediatrics is excited and proud to announce its 3rd Annual ACFAP Pediatric Foot & Ankle Seminar. The Seminar will take place at Atlantic Oceanside Hotel & Conference Center in Bar Harbor, Maine on June 8-10, 2017.

This CME event will feature leading authorities on pediatric foot & ankle conditions. It will cover topics ranging from pediatric H&P, flatfoot, equinus, sports medicine, surgery, and rotational conditions. The meeting will be preceded on Thursday June 8 by a one day national park excursion.

Featured at this meeting will be spectacular Acadia National Park.

At the Conclusion of this meeting, the attendee shall be able to:

- Develop effective Protocols for treating the pediatric patient.
- Effectively evaluate surgical vs. non-surgical options for many common Pediatric foot & ankle pathologies.
- Improve patient outcomes in the pediatric patient for common conditions such as flatfeet, juvenile HAV, and Equinus.

For Conference details or to register online: please go to acfap.org/events.html

Approved for 11.75 CE Contact Hours

No commercial interest provided financial support for this continuing education activity

Lecture Schedule

Friday June 9

7:00-7:45 am	Registration, Breakfast & Visit Exhibitors
7:45-8:00 am	Louis J. DeCaro, DPM Welcome Address
8:00-8:35 am	Louis J. DeCaro, DPM Pediatric Foot Typing
8:35-9:10 am	Patrick Deheer, DPM Juvenile HAV & Other Common Surgical Procedures for the Child
9:10-9:45 am	Frank Santopietro, DPM How The Foot Affects the Leg, Knee and Hip
9:45-10:20 am	Russell Volpe, DPM Pediatric Precursors of Posterior Tibial Dysfunction
10:20-10:50 am	Visit Exhibitors
10:50-11:25 am	Patrick Agnew, DPM Metatarsus Adductus
11:25-12:00 pm	Ed Harris, DPM Polydactyly
12:00-12:35 pm	Tracey Vlahovic, DPM Plantar Warts, Onychomycosis , Ingrowns, Dermatology in Children
12:35-1:30 pm	Lunch & Visit Exhibitors
1:30-2:05 pm	Nicholas Bolognini, DPM The Clubfoot

Lecture Schedule (cont.)

Friday June 9 (cont.)

- 2:05-2:40 pm **Patrick Deheer, DPM** The importance of Equinus in the Pediatric Foot
- 2:40-3:15 pm **Michael Graham, DPM** Pediatric Flatfeet: What's the big deal?
- 3:15-3:50 pm **John Grady, DPM** Pediatric Sports Fractures
- 3:50-4:20 pm **Break & Visit Exhibitors**
- 4:20-4:55 pm **Marc Benard, DPM** Tendon Transfers Relative to Gait & Biomechanics
- 4:55-5:55 pm **Patrick Deheer, DPM, Michael Graham, DPM and Roberta Nole, MA, PT, CPed** The Great Flatfoot Debate
- 5:55-6:35 pm **All Speakers Q&A**

Not an ACFAP Member?

Becoming a member of ACFAP for \$150 instantly saves \$150 off the conference registration fee

[Go to acfap.org/membership.html](http://acfap.org/membership.html)

Lecture Schedule (cont.)

Saturday June 10

- 7:00-7:45 am **Breakfast & Visit Exhibitors**
- 7:45-8:45 am **Jason Kraus**, The Uniqueness of Treating The Child
- 8:45-9:45 am **Louis J. DeCaro, DPM & Panel** Pediatric Practice Management
- 9:45-10:15 am **Visit Exhibitors**
- 10:15-11:00 am **Matt Werd, DPM & Panel** Taping of the Pediatric Athlete (Workshop)
- 11:00-11:45 am **Nicholas Bolognini, DPM & Panel** Ponsetti Casting (Workshop)
- 11:45-12:30 pm **Nick Pagano, DPM & Panel** Measuring the Child (Workshop)
- 12:30-1:30 pm **Lunch & Visit Exhibitors**

This conference is intended for podiatric physicians and other medical specialties dealing with the pediatric lower extremity. No prerequisite levels of skill, knowledge, or experience required of learners.

This activity has been planned and implemented in accordance with the standards and requirements for approval of providers of continuing education in podiatric medicine through a joint provider agreement between the William L. Goldfarb Foundation as a provider of continuing education in podiatric medicine. The William L. Goldfarb Foundation has approved this activity for a maximum of 8 continuing education contact hours

In the event of cancellation ACFAP is unable to assume risk or responsibility for the exhibitor's and/or registrants time or expenses should an act of God, government action, disaster, weather or other force beyond ACFAP's control make it inadvisable or impossible to conduct this event. The exhibitor and/or registrant may wish to consider purchasing personal travel insurance to insure their expenses.

What is ACFAP?

The American College of Foot and Ankle Pediatrics is the American Podiatric Medical Association's only recognized group of experts in the subspecialty of Podopediatrics. As an affiliate clinical interest group, under the APMA, our goal is to educate both our colleagues and the general public on the importance of caring for children's feet.

Mission Statement

The American College of Foot and Ankle Pediatrics strives to disseminate new and advanced information on the latest techniques in pediatric foot and ankle care. This is done through our participation in seminars, lectures, publications and digital media.

What we do

We dispense information to the public on the proper care of their child's feet. We promote commitment to, and excellence in, the medical and surgical management of pediatric foot and ankle pathologies.

For more information please contact:

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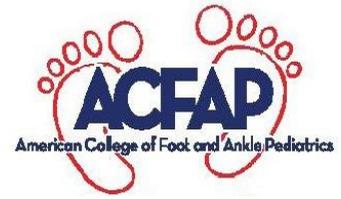
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Presidents Message



“It is easier to build strong children than it is to repair broken men.”
- Frederick Douglass

Hello fellow ACFAP members! I love that quote, don't you?

I recently promised you all that 2017 for ACFAP was going to be the “year of pediatric education” throughout our profession. Well, through our efforts to introduce pediatric foot and ankle education across the country, we've been able to accomplish just that! ACFAP has, in some capacity, attended over 20 seminars in the past year. I myself have also lectured about pediatrics on behalf of ACFAP at the majority of those seminars. We have not only grown our membership and corporate sponsorship, but most importantly inspired so many to think again about treating more pediatric patients.

Recently ACFAP was represented both at the North Carolina Seminar and SAM in Florida. Upcoming, ACFAP will be present at AAPPM in Tampa, the Midwest in Chicago, and APMA National in Nashville. As well, for the first time ever, ACFAP will be presenting at the 4th annual stand-alone Sports Medicine Society meeting in Chicago.

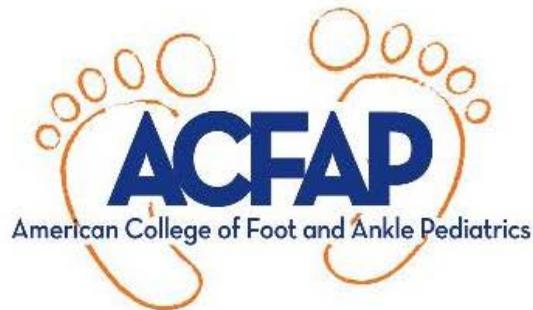
ACFAP 2017 Annual Scientific Meeting is only a few months away! We are continuing the National Park “tradition” at the Atlantic Oceanside Resort, Acadia National Park, Bar Harbor, ME June 8-10 2017. Once again we will precede the meeting with a group outing in Acadia on the 8th. We have lined up a professional photographer as our tour guide, Mr. Don Toothaker (toothakerphoto.com) who has conducted expeditions in Acadia over 20 times.

The scientific part of the conference will take place at Acadia National Park on Friday and Saturday June 9-10, 2017. This CME (11.75 CME's) event will feature leading authorities on pediatric foot and ankle conditions. It will cover topics both conservative and surgical. As well the seminar will feature new and exciting panels and workshops. There will be the “Great flatfoot Debate” consisting of a panel of docs representing surgical, orthotic, and conservative care point of views. Workshops and panels will include Ponsetti casting, practice management, and how to guides to “measuring” the pediatric patient. Please go to our website acfap.org for more information.

Our meetings are designed to educate, innovate, and build tremendous camaraderie within our membership. An overall experience unparalleled in the podiatric world. The “Can't Miss” meetings of the year, located in one of those “Can't Miss” spots!

I want to again welcome all past, future, and current members of the American College of Foot and Ankle pediatrics to this new era not only in this organization, but also in the education of pediatric foot and ankle medicine. Thank you to each and every one of you for making this all possible!

Louis J. DeCaro, DPM
President, ACFAP
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YOUR CHECK!**

One membership certificate is included in your dues once per lifetime, however additional certificates can be ordered at \$15.00 per certificate. Thank you for your attention in this matter and for your continued support of the College.

All members of ACFAP must be current APMA members.

Prematurely Symptomatic Tarsal Coalition with Peroneal Spasm in a 2 year old

Robert L. van Brederode, DPM, FACFAS

Abstract

Peroneal spastic flatfoot has often been associated with tarsal coalition. This case report presents a 2 year old girl with a fibrous coalition at the calcaneonavicular joint that became symptomatic with peroneal spasm after an inversion ankle injury. The premature onset of calcaneonavicular coalition symptoms combined with the 6 year follow-up after successful conservative treatment with plaster cast make this case unique.

Keywords

Tarsal Coalition, Peroneal Spasm

Introduction

Calcaneonavicular and talocalcaneal coalitions account for most cases of peroneal spastic flatfoot¹. In a study of 3,619 army recruits in Canada, Harris and Beath found 74 cases (2%) with associated peroneal spastic flatfoot². Peroneal spastic flatfoot can be a sequela associated with a tarsal coalition³. This is likely a subconscious measure by the peroneus brevis tendon to reduce the painful joint motion.

The cause of tarsal coalition is unknown. A calcaneonavicular coalition most commonly becomes symptomatic in the 2nd decade of life between 8-12 years old.⁴ Coalitions may be classified as a synostosis (osseous union), or a syndesmosis (fibrous union), or a synchondrosis (cartilaginous union). Combinations of these may exist as well. A cartilaginous or fibrous union may later develop into an osseous union.⁵ This case was rare in the sense that the patient

became symptomatic much earlier in life than usual, and 6 year follow-up allowed for long term observation of the patient.

Case Report

A one year and nine month old female presented to clinic in September of 2009 and had twisted her left ankle in the direction of inversion 6 months before. She had symptoms of aching and mild swelling with activity along the lateral aspect of the left foot per the patient's parents since the injury. Due to the chronic foot pain and mild swelling, her pediatrician was having her evaluated for Juvenile Rheumatoid Arthritis when she was also referred to our clinic. Her past medical history, medications, and allergies were all unremarkable. Pertinent family history included arthritis and hypertension. Pertinent surgical history included removal of tissue from her right foot by another surgeon that was pathologically identified as synovitis.

Physical examination revealed a mild limp and increased flattening of her left foot with prolonged walking. The patient clearly had limited ROM at the STJ and midfoot. With repetitive eversion of the foot, a stutter-like tonic spasming of the peroneal tendon was clearly evident, and increased as more eversion was exerted. The foot also took on a more valgus position with the tonic spasming. Normal ROM was evident on the contralateral limb.

An MRI was obtained to evaluate for potential tarsal coalition. The MRI findings were consistent with a fibrous coalition at the calcaneonavicular articulation with edematous changes in the adjacent osseous

structures. Surgical intervention was discussed, but initial treatment was instigated with plaster cast application to rest the area. After four weeks of cast immobilization, she was returned to sneakers with an OTC arch support. At her follow-up visit four weeks later, she was walking normally and without any symptoms subjectively or on exam. Peroneal spasm could not be recreated on exam.

The patient returned to clinic yearly for four years and then was followed up by telephone for the past two years and there has not been any return of the bothersome symptoms with peroneal spasm or limping. About two years after the cast immobilization, she began using a custom foot orthotic to control the foot biomechanics. She has been asymptomatic and able to participate in regular childhood activities including dance, recreational soccer, and running without any complications to this point.

Discussion

Medical literature identifies calcaneonavicular coalitions being symptomatic between ages 8-12. This unique case is presented of a one year and nine month old developing a symptomatic calcaneonavicular fibrous coalition with peroneal spasm secondary to trauma. The coalition was diagnosed by clinical findings and MRI. After treatment of four weeks of cast immobilization and follow-up treatment with orthotics over the past six years, the patient has been able to continue comfortably with high level activities. It appears that conservative therapy has been successful thus far in reducing pain from her tarsal coalition with peroneal spasm. It will be important to observe if the tarsal coalition becomes symptomatic later in life when the patient reaches 8-12 years of age.

Acknowledgements

I appreciate my friend and colleague, Kurt A. Massey, DPM, FACFAS allowing me

to discuss this patient with him as I initially provided her care. I also recognize the fine work by the radiologists at the Johnson City Medical Center, Johnson City, TN with the patients imaging.

References

1. Tachjian M O. "The Foot and Leg", Pediatric Orthopedics. p. 1346, W.B. Saunders Co., Philadelphia, 1972.
2. Harris R I, and Beath T Army Foot Survey. Ottawa. National Research Council of Canada, 44, 1947.
3. Downey M S. "Tarsal Coalition", Comprehensive Textbook of Foot Surgery. p.899, edited by McGlamry E D, Banks A S, Downey M S. Williams & Wilkins, Baltimore, 1992.
4. Downey M S. "Tarsal Coalition", Comprehensive Textbook of Foot Surgery. p.904, edited by McGlamry E D, Banks A S, Downey M S. Williams & Wilkins, Baltimore, 1992.
5. Downey M S. "Tarsal Coalition", Comprehensive Textbook of Foot Surgery. p.901, edited by McGlamry E D, Banks A S, Downey M S. Williams & Wilkins, Baltimore, 1992.

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Treatment of recalcitrant verruca plantaris with a combination of surgical autoimmunization and CO2 laser: A case study

Shawn Echard, DPM

There are many modalities available to treat and eliminate plantar verrucae. This can be as anecdotal as duct tape, the use of OTC salicylic acids, topical canthindrin or fluoruracil products, oral Cimetidine, to more aggressive approaches such as intralesional bleomycin sulfate injections, sublesional interferon, surgical excision or the use of various lasers. However, this study focuses on those patients, pediatric or adult, in which several treatments have been performed either through self care, by a physician or combination, and the condition proves to be recalcitrant causing significant pain and frustration by the patient and caregivers.

The human papilloma virus (HPV, a DNA Papillomavirus) is the underlying cause of ver-

ruca plantaris, specifically subtypes 1,2,or 4. The virus will affect the keratinocytes in the basal layer of the epidermis where it is perfused with a rich blood supply from the dermal layer. No vaccine currently exists to treat verrucae. However, it is believed that an autoimmunization procedure of implanting a small portion of verrucous tissue into the abductor muscle belly will cause a cell-mediated immune response clearing the HPV. Cellular immune reaction occurs when helper T-cells produce lymphokines. The lymphokines promote phagocytosis destroying the cells affected with the HPV. While it is common for clinicians to see spontaneous remission of verrucae plantaris generally in 50-60% of healthy patients 1-2 years of initial onset, this technique will generally allow complete clearing



Figure 1. The sub 4th metatarsal head lesion serves as the donor site.

Figure 2. Standard excision of lesion.



in 2-3 months.

Procedure

Prior to the procedure, it is essential to have a thorough consultation with the parents/guardians of the patient. Oral and written explanation of why this combination procedure is being considered. (I generally provide parents with literature and journal articles explaining the approach and physiology behind why I am implanting a wart into a healthy muscle in their child's arch). Be clear in discussing the risks, the benefits, the type and anesthesia that will be used, the recovery period, and what to expect their child to be able to do the first several days post operatively. Care, thoroughness, and reassurance now will decrease anxiety the day of surgery and in the postoperative period.

Following IV sedation, the lesions and recipient area are infiltrated with 1% lidocaine plain. The foot is prepped and draped in a sterile fashion, as is the surgeon. A single lesion should be

selected that is generally over 5mm in diameter. This is to assure adequate tissue sample for later implantation. The lesion can be excised in the usual fashion by circumscribing the lesion with a 15 blade and excochleating the lesion with a bone curette to the basement membrane. The sample is then placed on the back table for later use. A CO2 laser is then utilized to vaporize additional lesions to the foot using an 8-watt setting in continuous mode. Portions of the verruca can then be debrided and samples can then be sent, per physician preference, to pathology.

Attention should then be directed to the medial arch. I generally palpate the 1st metatarsal head and base of the 1st metatarsal and choose the midpoint. A 1.0 to 1.5 incision is then made over the abductor hallucis muscle. The incision is deepened through the skin and subcutaneous layer with a small hemostat. Again, care should be taken to avoid neurovascular structures in this area. The donor verruca is then prepared by removing the keratin layer with a 15 blade. Given the generally round shape of the donor

tissue the author recommends placing it on a malleable retractor as base for the debridement of the keratin laser with a 15 blade. Again, only a small amount of the donor tissue is needed. The donor tissue is then imbedded within the muscle belly. The area is flushed with saline and the skin reapproximated with either a simple or horizontal mattress suture. Xeroform is placed over the recipient site as well as the areas treated with the CO2 laser. A dry sterile dressing is then applied over the surgical sites and secured with coban.

The patient is allowed full weightbearing in a surgical shoe post operatively. The patient is then seen after 7-10 days and the suture removed. Granulation of the vaporized areas should be examined and the recipient area checked for localized erythema or complication. It is recommended the patient only wash the areas with soap and water and do local wound

care. Parents/guardians should be educated on wound care and avoid soaking their child's feet in Epson salts or other anecdotal treatments such as hydrogen peroxide. Discussion should then be done describing the expectations of healing over the next several weeks.

Discussion

The procedure is straightforward in execution and allows full weightbearing immediately post operatively. This procedure has been adapted to imbedding the donor tissue. This procedure can also be done in which the donor tissue is sutured/secured with an absorbable suture to the abductor muscle. The author noted this technique lead to a higher incidence of epidermal cyst and attributed it to the larger amount of donor tissue being needed. Using a smaller amount of tissue, imbedding it within the muscle belly has produced excellent results with much less pruritis



Figure 3. The lesions after CO2 laser ablation and debridement.

Figure 4. Donor lesion after debridement of keratin layer of the superficial epidermis. Note the donor lesion remaining on 15 blade.

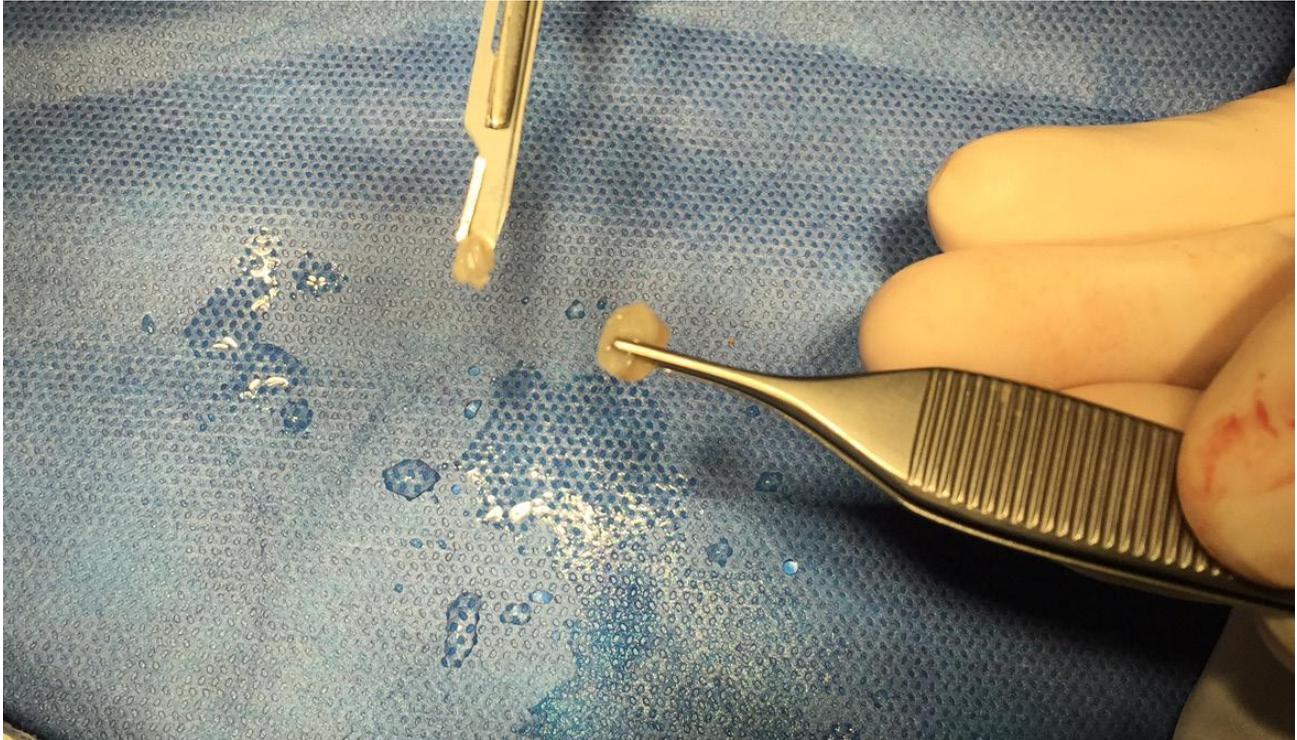


Figure 5. Incision made over the abductor hallucis brevis muscle.

Figure 6. After the deep fascia is incised, the donor lesion is imbedded into the muscle belly of the abductor hallucis brevis muscle.



Figure 7. Closure of area with 4.0 ethilon suture.

Figure 8. Final dressing of forefoot.



and no epidermal inclusion cysts to date. This procedure can also be used as an isolated procedure in those patients with numerous plantar lesions without the use of laser to other lesions sites. Again during the surgical consultation the patient and parents/guardians should be informed of the risk of epidermal cyst, which would then involve excision. Localized erythema is expected to not only the recipient site but also to the laser treated areas. If possible antibiotics and topical steroids should be avoided in the postoperative period as these could affect the immune response.

References

Evaluating the success of ND:YAG laser ablation in the treatment of recalcitrant verruca plantaris. Smith EA, Patel SB, Whiteley MS. *J Eur Acad Dermatol Venereol*. 2015 Mar;29 (3):463-7.

Successful treatment of verruca plantaris with a single sublesional injection of interferon – alpha 2a. Aksakal AB, Ozden MG, Atahan C, Onder M. *Clin Exp Dermatol* 2009 Jan;34(1): 16-9

Intralesional bleomycin sulfate injection for the treatment of verruca plantaris. Salk R, Douglas TS. *J Am Podiatric Med Assoc*. 2006 May-June; 96(3):220-5.

Treatment of verruca plantaris with a combination of topical fluorouracil and salicylic acid. Young S, Cohen GE. *J Am Podiatric Med Assoc*. 2005 July-Aug;95(4):366-9.

Cimetidine as a first line therapy for pedal

verruca:eight year retrospective analysis. Mullen BR, Gulianna JV, Nesheiwat F. *J Am Podiatric Med Assoc*. 2005 May-June; 95(3):229-34.

Surgical autoimmunization against verruca:Approach and expectations. Harton FM. Update 2001 The proceedings of the annual meeting of the podiatry institute. Chapter 30, pages 159-161.

Pulsed-dye laser versus conventional therapy in the treatment of warts: a prospective randomized trial. Robson KJ, Cunningham NM, Kruzan KL, Patel DS, Kreiter CD, O'Donnell MJ, Arpey CJ. *J Amer Acad Dermatol* 2000 Aug; 43(2 pt 1): 275-80.

The efficacy of laser surgery for verruca plantaris: report of a study. Lavery LA, Cutler JM, Galinski AW, Gastwirth BW. *Clin Podiatric Med Surg* 1988 Apr; 5(2):377-83.

CO2 laser techniques in destruction of verrucae plantaris: discussion of the blister technique, a more complete method of wart ablation. Markus T, Krell B, Reinherz R. *J Foot Surg* 1988 May-Jun ; 27(3):217-21.

Surgical autoimmunization against verruca plantaris via autogenic graft of papilloma in situ. Panacos N, Velarde HH, Seinwill MR. *Current Podiatry* 23:23, 1980.

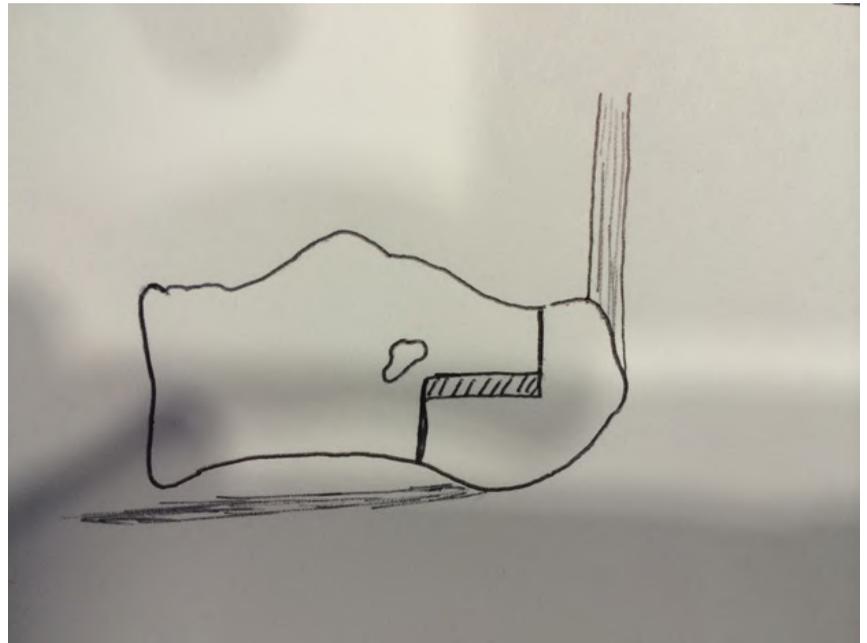
Calcaneal Z-osteotomy for varus deformities

Jimmy Foster, DPM

Lee M. Hlad, DPM

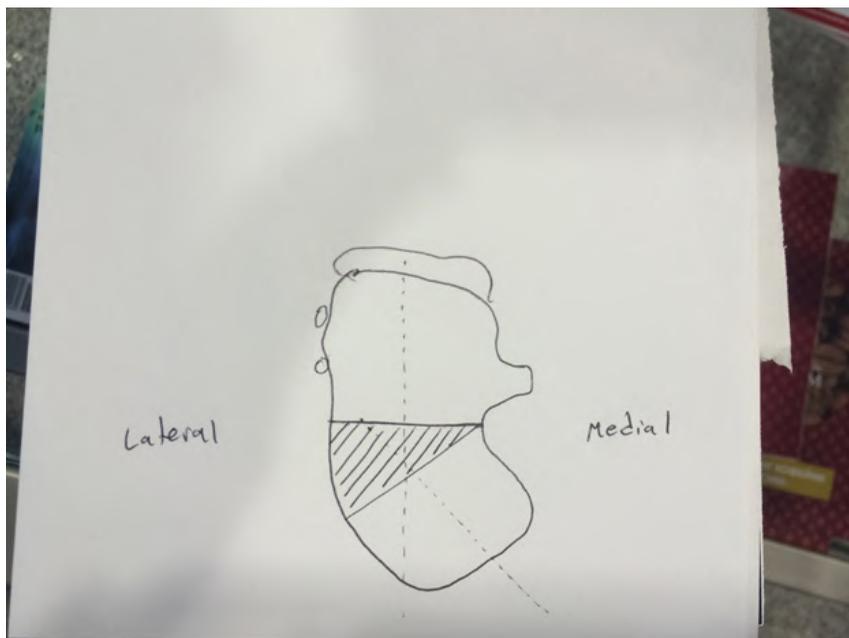
Cavus foot deformity is a common problem encountered by foot and ankle surgeons and is often a result of multi-level deformity. Prolonged varus can lead to ankle pain or instability, lateral forefoot overload, tendinopathy, and metatarsalgia. Cavovarus deformities can be caused by neurologic etiologies, such as, cerebral palsy, charcot marie tooth, post-traumatic etiologies, or recurrent clubfoot. Workup and treatment of these deformities can include a combination of soft tissue and tendon releases, transfers, and can require bony osteotomies as well.¹

There have been a variety of calcaneal osteotomies described in the literature for treatment of hindfoot varus, many of which were developed for the treatment of deformity resulting from poliomyelitis.² The Dwyer lateral closing wedge osteotomy corrects for frontal plane rotation.

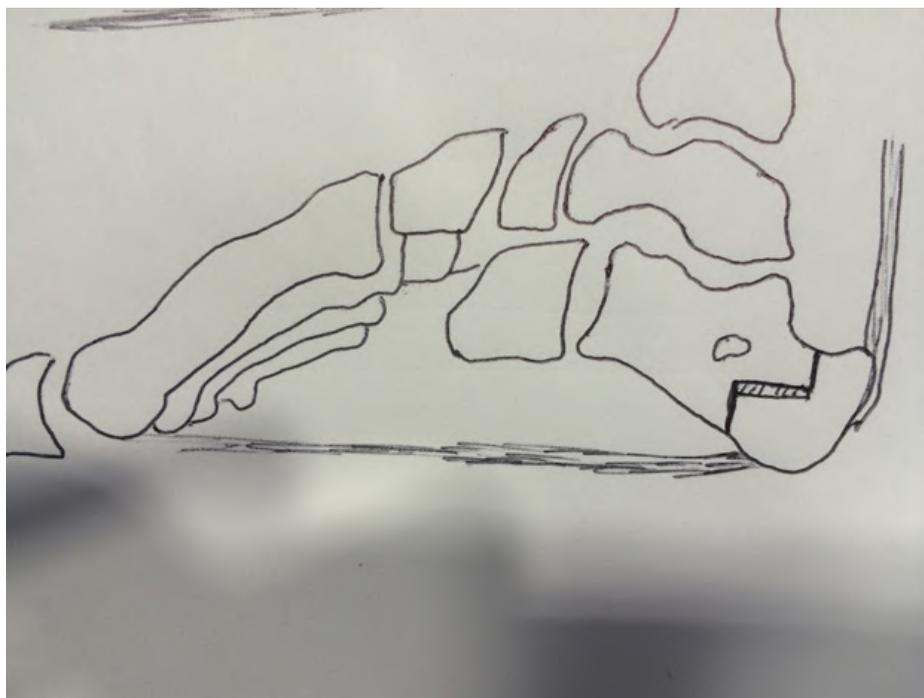


The lateralizing calcaneal osteotomy, is designed to correct in the transverse plane but can also correct some sagittal plan pathology as well. This osteotomy is described as an oblique osteotomy, and the tuberosity is shifted posteriorly and superiorly to improve

the moment arm of the Achilles to correct the hindfoot varus.⁴ A crescentic calcaneal osteotomy for treatment of hindfoot varus has also been described, but may be technically demanding.⁵ Many of these osteotomies have shown good mid to long term results.^{6,10,11}



In complex deformities sometimes single plane osteotomies often cannot provide enough correction. Knupp et al described a tri-planar osteotomy to address all aspects of the cavovarus deformity and termed this a “Z” osteotomy, which theoretically allows for correction in frontal,



ated from the superior central tuberosity to the inferior tuberosity and should end just distal to the tubercles of the calcaneus. The skin is incised and then blunt dissection is taken down to the lateral wall of the calc. care is taken to identify the sural nerve if found within the incision. The senior author then takes two short Steinman pins and places these on the axis of the Z as pictured (Figure 1). These wires are placed perpendicular to each other. The author then creates a Z periosteal incision. Centrally the superior cut is made in line with the long axis of the leg. The inferior portion of the central cut is made

transverse, and sagittal planes. This is achieved by removing a wedge laterally, and the nature of the osteotomy allows for lateral translation and rotation in the transverse plane if desired. They showed 17 of 18 patients had good correction in multiple planes without shortening of the calcaneus. 1 The Z-shaped osteotomy proved to have the greatest effect on shifting point of contact when compared to other lateralizing calcaneal osteotomies. This also showed improved tibio-talar contact pressures.⁸ However, due to the complex nature of the osteotomy, this is a more difficult osteotomy to create and fixate. Often as described it may require larger incision and more dissection which could increase chances of wound problems and possible injury to the sural nerve.⁹

in line with the weight bearing surface of the foot. This is very important in ensuring proper frontal plane rotation of the posterior fragment. One can keep the medial cortex

Case/Technique:

The patient is positioned as necessary for procedures at hand. The senior author often times will perform the bony osteotomy as one of the first procedures and then perform tendon transfers or release after. For placement of the incision fluoroscopy is used and an oblique line is marked just posterior to course of the peroneal tendons within the tuberosity. Then a 4cm incision is cre-



Figure 1



Figure 2

intact if desired or one can penetrate and laterally displace the fragment. For fixation, the Senior author uses either two 5.5mm screws or uses two staples. Guides are shown in Figure 2 with temporary fixation with Steinman pin. Certain companies do have offset staples to accommodate shifting of the calc. It is important when making the plantar arm that one stays in front of the tuberosity's but not too distal to disturb the peroneal tubercle. Adjunct procedures are then performed.

Postop Course-

Post operatively patient is casted and will be NWB for 6-8 weeks. They will then be transitioned to weight bearing and advanced per physician through physical therapy.

Discussion:

Calcaneal Z osteotomy is a powerful procedure but can be technically demanding and requires proper skin incision placement.

It important to take tarsal tunnel syndrome into account after a calcaneal osteotomy. Bruce et al studied the effect of medial and lateral calcaneal osteotomies on the tarsal tunnel in a cadaveric study. MRI was used to measure the volume of the tarsal canal before and after each of the osteotomies. The proximity of the osteotomy cut was also measured. There was a significant decrease in the tarsal tunnel found associated with lateral shifting of the tuber, independently of whether the

osteotomy was anteriorly or posteriorly displaced. They also note the anterior cut of the Z-osteotomy put neurovascular structures of



the medial ankle more at risk than the posterior cut.¹² Knupp et al also demonstrated 4 of 18 patients with positive neurological exam finding following their Z-osteotomy .¹ The senior author will often perform modified tarsal tunnel with Steindler stripping or fascial release if needed.

Conclusion:

In the purpose of this paper is to illustrate the clinical approach and provide a technical guide to surgical correction of calcaneal varus utilizing a Z osteotomy. It's important to augment this procedure with soft tissue and tendon balancing based on the etiology of the foot type and severity of deformity. The calcaneal Z osteotomy provides tri-planar correction, and improves point of contact and tibio-talar contact pressures. The Senior author recommends a modified prophylactic tarsal tunnel release in any Z-type lateralizing calcaneal osteotomy.

References:

1. Bariteau et al. What is the Role and Limit of Calcaneal Osteotomy in the Cavovarus foot? *Foot Ankle Clin N Am.* 2013; 18: 697-714.
2. Dwyer F. Osteotomy of the calcaneum for pes cavus. *J Bone Joint Surg Br.* 1959; 41(1): 80-86.
3. Dwyer F. The present status of the problem of pes cavus. *Clin Orthop Relat Res.* 1975; 106: 254-275.
4. Mitchell GP. Posterior displacement osteotomy of the calcaneus. *J Bone Joint Surg Br* 1977; 59(2):233-235.
5. Samilson et al. Cavus, cavovarus, and calcaneocavus. An update. *Clin Orthop Relat Res* 1983; 177:125-132.
6. Knupp et al. A new z-shaped calcaneal osteotomy for 3-place correction of severe varus deformity of the hindfoot. *Tech Foot Ankle Surg.* 2008; 7(2):90-95.
7. Malerba et al. Calcaneal osteotomies. *Foot Ankle Clin.* 2005; 10(3):523-540.
8. Krause et al. Ankle joint pressure

changes in pes cavovarus model after lateralizing calcaneal osteotomies. *Foot Ankle Int.* 2010; 31(9):741-746.

9. Vermeulen et al. Relationship of the Scarf valgus-inducing osteotomy of the calcaneus to the medial neurovascular structures. *Foot Ankle Int.* 2011; 32(5): S540-544.
10. Ayres et al. Dwyer osteotomy: a retrospective study. *J Foot Surg.* 1987; 26(4):322-328.
11. Sammarco et al. Combined calcaneal and metatarsal osteotomies for the treatment of cavus foot. *Foot Ankle Clin.* 2001; 6(3): 533-543.
12. Bruce et al. The Effect of Medial and Lateral Calcaneal Osteotomies on the Tarsal Tunnel. *Foot Ankle Int.* 2014; 35(4): 383-388.

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Seeing Double

Jamie Settles Carter, DPM

Having kids is stressful. From the moment you find out you're pregnant, until the day you die, you are constantly stressed out about something to do with your children. Well, what if you were told that you were having 2 kids at once?!?!?

That's double the stress for double the years!

Well, that's exactly what happened to me. As soon as the doctor said "Congratulations, you're having twins" I immediately started thinking of all the things I would soon need two of. And medical problems are no exception. Whether it is two kids with runny noses, two kids with flat feet, or two kids with sprained ankles sustained during a basketball game, there is always the potential to see double.

How to pay for all these complications can also cause some undue stress to moms and dads alike. Kids are often unpredictable and you never know when an unforeseen expense is going to arise. However, one thing you can be certain of is that kids are going to grow.

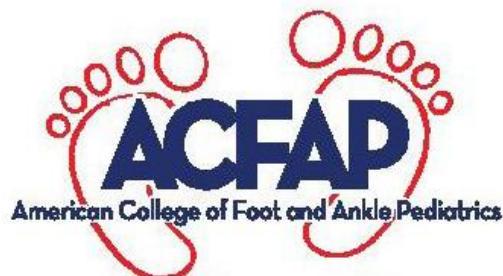
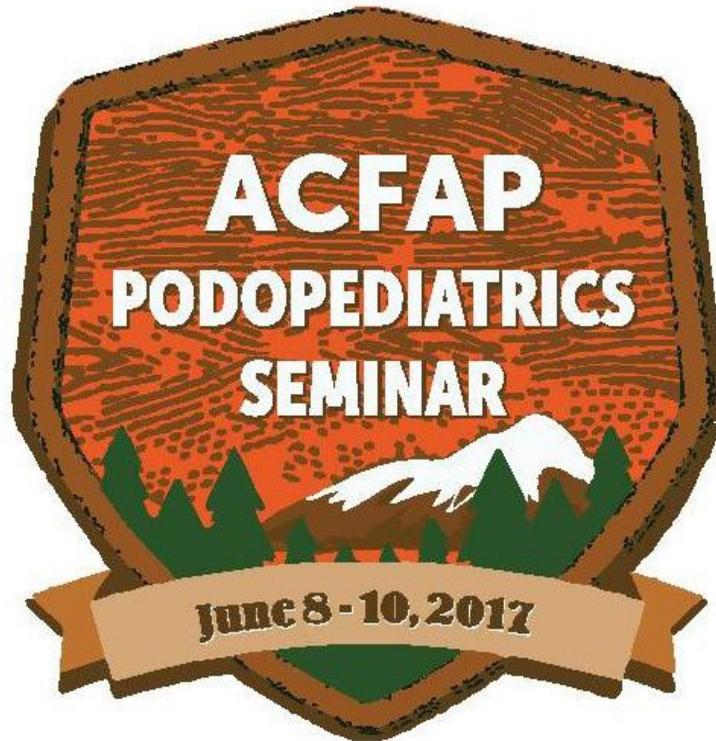
Sometimes it's one shoe size a year and sometimes its 5 sizes in a few months. So, when mom and dad have concerns about paying hundreds of dollars for a pair of custom orthotics for their children that may only be able to use them for one 6 months, it is understandable.

- At this point it is extremely important to let the parents know that you understand how expensive children are, but you also understand the ramifications that can occur if treatment isn't rendered quickly and appropriately. By fully explaining the consequences of lack of appropriate treatment for children, such as worsening of their flat feet leading to ankle and knee pain for the majority of their adult life, parents are more likely to respond with a "do whatever it takes" attitude.
- It would also be important to thoroughly

educate parents on the specific "grow out plan" that your office and orthotic company provide.

- This also leads to the importance of having an exceptional OTC device that can take the temporary place of a custom orthotic. Something like "Little Steps" are much more cost efficient and do a really good job of not only treating painful feet, but also preventing debilitating future complications. This may be a lifesaving alternative to parents that are looking at having to purchase 2 or more pair within a one year period of time.
- Care credit, care credit, care credit. There are options out there that take can reduce sticker shock and make a seemingly daunting financial expense less detrimental to the monthly budget.
- It is always important to let the kids and parents know that you are concerned only about the best interest of the child. You are definitely not their financial planner, so present them with the facts, give them your professional opinion, and let them be a part in choosing the appropriate treatment for their child.

I'm telling you – it doesn't matter if it's preventative or corrective. It's still going to be a stressful discussion for a parent of twins. Remember to be calm and answer all questions as best you can and have printed patient education to be sent home as well and the parents and twins will be set up for success!



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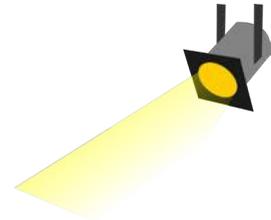
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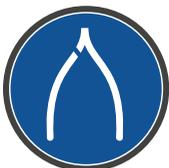
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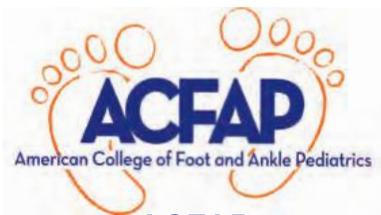
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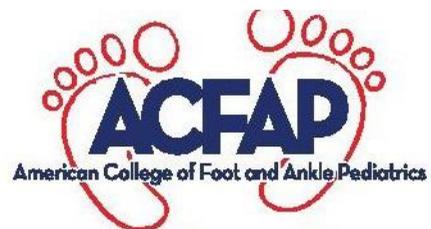
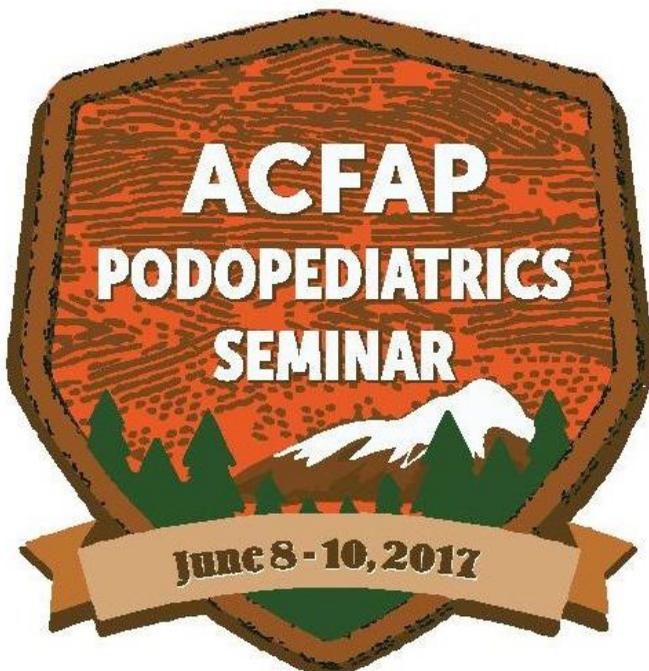
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