SUMMER 2015

http://www.acfap.org

ACFAP Quarterly

American College of Foot and Ankle Pediatrics

2015 Everglades Annual Meeting Recap

2016 Yosemite Annual Meeting Announcement



Benefiting the APMA Government Education Fund September 9–13, 2015



Reynolds Plantation, A Ritz-Carlton Resort Lake Oconee, GA

Multiple package options available, starting around \$2,000/person.

Sign up today! www.apma.org/KCF Hope you can join us!



Features:

5

6

President's Message Louis J. DeCaro, DPM

ACFAP 2015 Conference Thank You and Snapshot

8 Children and Their Feet: Preventing Small

Problems from Becoming Big Ones Patricia Pande, MClScPT, CPED, CSCS, Power Pilates instructor

Ilizarov frame reduction in Mature Talipes Equino Varus Charles C. Southerland Jr. DPM, FACFAS, DAB-PM, CWS, DABDA

18

12

Understanding Developmental Disability Terms Susan M. Wright DPM

20

Apophysitis - Keeping Kids in the Game Patrick A. DeHeer, DPM

22

Sponsor Spotlight: The Manta Group Raymond F. Posa

23

ACFAP Sponsors

Editor Dr. Mary Clare Zavada mczacfap@gmail.com

Layout Editor Andrew Gromada

Contributing Editor Sara Gromada

AAPPM FALL CONFERENCE Providing the Solutions You Need in Today's Changing Healthcare Environment

NOVEMBER 5-8, 2015 RENAISSANCE HOTEL | NASHVILLE, TN

REGISTER ONLINE at **AAPPM.ORG**

THURSDAY, NOVEMBER 5, 2015 | 8:00 AM - 11:30 AM

The American College of Foot & Ankle Pediatrics (ACFAP) along with AAPPM are proud to announce an exclusive podopediatrics track which will be taking place during the AAPPM Fall Conference on November 5, 2015. We have assembled a panel of podopediatric specialists to help guide you through the workshop. Attendees will learn the ins and outs of the art and science of running a successful podopediatric practice.

8:00 AM- 8:30 AM NICK PAGANO, DPM

MANAGING KIDS-FROM PARENTS TO PAIN

special opediatrics

This lecture talks about no only how to deal with pediatric patients but also how to easily and effectively deal with the dreaded "parents". The practitioner will learn ways to conduct and reconstruct an office to make it a welcoming place for kids and their parents alike!

8:30 AM- 9:30 AM LOUIS DECARO, DPM

THE ART & SCIENCE OF PEDIATRIC PRACTICE MANAGEMENT This lecture keys in two important practice management tools with regards to podopediatrics. It focuses on ways to utilize existing adult patients and link the genetics of their conditions to their kids. It also explains the evolution of "the look" and presentation of a particular foot as it evolves from childhood to adult stature.

9:30 AM- 10:00 AM CHAD SCHWARZ

DEVELOPING A PODOPEDIATRIC CENTER OF EXCELLENCE How can you create a "Podopediatric Center of Excellence" within your practice so the medical and non-medical community understands and utilizes you for podiatric care for children of all ages. Here in lies something powerful; opportunity! In this presentation, we will discuss components of your practice to highlight or integrate to appeal to local pediatricians, businesses and organizations focused on children and of course, the parents who are making all of the decisions relative to their child or children's health and wellness. Along with this, we will discuss marketing and public relation strategies to create strong awareness for your "Podopediatric Center of Excellence" in and around your community.

10:00 AM- 10:15 AM

BREAK AND VISIT EXHIBITORS

10:15 AM- 11:00 AM ROBERTA NOLE, PT

GAIT VIDEO ANALYSIS: PREVENTING PEDIATRIC GROWING PAINS & SPORTS INJURIES

Learn to identify 6 functional foot groups using an easy to learn 4-step method of gait assessment. Learn specific pathologies and sports related injuries common to each of the 6 functional groups. Learn the best biomechanical orthotic designs to optimally manage each functional group. Learn that it is important to biomechanically manage the adolescent athletebefore the injury happens!

11:00 AM- 11:30 AM TRACEY TOBACK, DPM

PEDIATRIC PATIENTS AND CUSTOM FUNCTIONAL ORTHOTICS: HOW AND WHY IT IS ESSENTIAL TO YOUR PRACTICE Review the effective pathologies in which custom functional orthotics have successful outcomes in the pediatric patient. Learn to effectively discuss with parents how their investment in custom orthotics will benefit their child. Establish the pediatric patient into your practice long term to effectively reach long term goals of conservatively achieving best possible foot function.

American Academy of Podiatric Practice Management | 1000 West St. Joseph Hwy, Suite 200 | Lansing, MI 48915 | 517-484-1930



Presidents Message

My first year as president of ACFAP has been an exciting and rewarding experience. We have seen our paying membership triple, experienced significant corporate sponsorship growth, and launched our annual conference. As well, educational initiatives, such as this newsletter and the growth of our board have strengthened our organization. Moving forward my promise to all of you is to not lose that momentum!

As you all know The American College of Foot & Ankle Pediatrics (ACFAP) hosted its Annual Conference at Barry University School of Podiatric Medicine March 27-28, 2015. The conference featured a National Park outing



combined with exceptional CME lectures. Dr. Nicholas Pagano and Tracey Toback were appointed as ACFAP's newest board members.

I am extremely proud that almost 100 podiatric physicians decided to join ACFAP in Miami. What they experienced was priceless: dedicated enthusiastic speakers, engaged attendees, supportive sponsors, and an overall sense of commitment to the advancement of pediatric foot and ankle education. I heard from so many of you at the meeting that the seminar was truly priceless. In fact the speaker surveys were virtually perfect with such positive and constructive suggestions for future conference topics. Vendors were also raving about their experience. In the weeks following, as word got out to other members, I received multiple emails from many of you (who didn't attend) "promising" not to miss next years! Reading those responses was so gratifying.

I am NOW over the top excited to announce that we have secured a spot for ACFAP 2016 Annual Scientific Meeting. We are continuing the National Park "tradition" at Tenaya Lodge - Yosemite National Park on April 8 – 9, 2016. We will once again conduct a one-day educational conference on the 9th preceded by a group outing in Yosemite on the 8th. Tentatively we will be offering 7-8 CME's at a conference registration rate of \$149 for members and \$299 for non-members.

Yosemite National Park is an amazing place. Not only is it absolutely surreal in it's beauty, it is a great family destination. Arriving is not as daunting as one would think. There are two airports, which both have major airport connections available, are each within two hours driving distance of the park.

Prior to our Annual Conference ACFAP will also be participating in several conferences around the country. Two examples include both joining APMA 2015 Annual Scientific Meeting (The National) in Orlando, FL for a ¹/₂ day track, and continuing our half-day tracks at AAPPM Nashville, TN in November.

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. If you are interested in podopediatrics, currently treat children in your office or are interested in helping to advance the profession, please join us (or continue to join us) in our mission to educate both our colleagues and the public.

Thank you to each and every one of you for making this all possible!

Louis J. DeCaro, DPM President, ACFAP

Important P.S. - Make sure you book your Yosemite trip ASAP. We have been able to reserve a limited number of rooms at special group rate of \$189/night for Friday and Saturday nights. As well our group rate has been extended both 3 nights prior and 3 nights post show based on availability. Average room cost at the "non-group rate" is about \$400/night. Mention the "American College of Foot & Ankle Pediatrics," or use group code 31073U when reserving by phone @ 800-635-5807.

A BIG THANK YOU To All For Making ACFAP 2015 A Smashing Success!

The American College of Foot & Ankle Pediatrics (ACFAP) hosted its 1st Annual conference at Barry University School of Podiatric Medicine March 27-28, 2015. It was a huge success! The conference featured a National Park outing combined with exceptional CME lectures. Dr. Nicholas Pagano & Dr. Tracey Toback were appointed as ACFAP's newest board members. Almost 100 doctors decided to join ACFAP in Miami.

What they experienced was priceless: dedicated enthusiastic speakers, engaged attendees, supportive sponsors, and an overall sense of commitment to the advancement of Pediatric Foot & Ankle education.

If you missed it, don't you dare miss next years!!!!

ACFAP 2016 will be held at Tenaya Lodge (Yosemite National Park) April 8-9, 2016

Abstracts are currently being accepted @ ljdacfap@gmail.com

Join ACFAP on Facebook for updates.

Pictured Below: At ACFAP 2015 Annual Conference: Dr. Joseph D'Amico, Dr. Dock Dockery, Dr. Patrick Agnew, Patricia Pande, Dr. Louis J. DeCaro, Dr. Patrick Deheer. Dr. Nicholas Pagano & Dr. Tracey Toback.























ACFAP 2015 Conference Snapshot









- Top athletes have flat feet without a limitations.
- Military recruits have flat feet and perform better than high arched fe



Children and Their Feet: Preventing Small Problems from Becoming Big Ones

Patricia Pande, MClScPT, CPED, CSCS, Power Pilates instructor

Children begin life without a defined arch to their foot. Arches usually develop at some point between the ages of three and five, but the exact time is often influenced by footwear, obesity and gender. As arches gain definition, children with flexible flat feet – those that are flat when standing but show an arch when seated – should be evaluated and monitored. Treatment may be necessary if the condition worsens or becomes symptomatic.

Flexible flat feet as well as torsional abnormalities of the lower extremity are often associated with generalized hypermobility or ligamentous laxity. Beighton scores for hypermobility, however, often over-classify its presence in the pediatric population. The lower limb assessment scale is more selective of pathology in the foot and ankle (Ferrari et al. 2005; Evans et al. 2012).

Outcome studies on orthoses for early intervention in children are limited, but research shows that orthoses have improved function and reduced pain in symptomatic flat foot (Yagerman et al. 2011; Evans AM 2008; Rome et al. 2010). Studies demonstrating favorable change in the resting calcaneal stance position and improvement in foot posture further support the use of orthoses in this group (Evans and Rome 2011).

Exercise and balance training introduce global movements for high-risk groups. Heavy resistance exercise is beneficial for children over 13 years old with Ehlers Danlos to improve balance, postural sway and functional strength (Moller et al 2014).

McClinton et al. (2013) advocate for an approach to flexible flat foot that combines podiatric treatment with early exercise (flat foot and toe spread exercises), but more research is needed, as the rationale for using prevention in high risk groups (scoliosis) is not new.



Figure 1

The pediatric foot exercise program may be done with the following sequence:

1. Toe Spread Exercises using balls, spacers or other similar objects (figure 1)

2. Short Foot Exercises using theraputty or squeaky toys for sensory feedback (figure 2)



Figure 2





Figure 3

Figure 4

As the child's arch begins to form, various exercises for full lower extremity and core strengthening should be introduced along with the intrinsic muscles.

The following are examples of of multidirectional and global exercises.

1. Monster Squats with stuffed animal (or other soft toy) allow proprioceptive influence to the arch muscle while improving the triple triad of foot pronation, genu valgum and pelvic anterior rotation (figure 3)

2. Lunges with arch

- 3.Lunges with overhead arms and arch (figure 4)
- 4. Lunges with twist and arch
- 5. Squats with bands

In the case of poor or challenged balance, children can do core exercises in the hand and knee position with arched or pointed toe. Examples include:

Hands and knees ball roll out with arch (figure





Figure 5

2. Hurdler stretch ball roll outs

Intoeoing Gait Program:

Into eing may present with various muscle imbalances related to the primary cause of the intoed gait. A proper differentiation distinguishes between femoral antetorsion, tibial torsion and metatarsus adductus.

The presence of femoral antetorsion requires positioning and postures that activate the external rotators of the hips and posterior tilt of the pelvis.

Sample antetorsion exercise:

Figure 6

1.Kneel stands with heels together and knees apart (figure 6)

Exercises for internal tibial torsion work the core, the hip rotational muscles and those that cross the knee.

1. Sit up and lateral leg reach (figure 7)

Summary:

A new paradigm calls for assessing children and their families for generalized ligamentous laxity, foot posture, balance and use of appropriate foot

10 ACFAP Quarterly Summer 2015

enhance muscle activity and improve fitness levels. The public health consequences are huge.

Baseline evaluations combined with a team-led, non-invasive yet comprehensive approach may prevent small problems from becoming very BIG ONES.



Figure 7

muscles during gait. This screening allows for a more comprehensive approach to children with a genetic predisposition to flexible and progressive flat foot along with the injurious sequelae.

Intervention at various stages of the child's development with foot/balance posture and core exercises, avoidance of aggravating activities, intervention with appropriate footwear and orthoses or inserts along with gait retraining should reduce lower extremity injuries in a high risk population.

This approach educates all members of the foot and ankle "team" and fulfills a consumer/patient-driven desire to learn how to protect family members from negative ramifications of untreated flexible flat foot.

Appropriate footwear in tandem with proper fitting and sizing throughout childhood growth spurts may allow for appropriate use of muscles. Judicious stretches of the achilles, peroneals and hips may also Patricia Pande, founder of FootCentric, is a Physical Therapist, Pedorthist and Strength and Conditioning Specialist who has practiced as a foot and pedorthic expert at the University of North Carolina Physical Therapy Faculty Clinic and Kinetic Institute of Physical Therapy. For over thirty five years, Patricia has educated professionals on topics related to sports medicine, fitness training, biomechanics and injury prevention. In addition to practicing in hospitals as a team leader and clinic manager, Pat has served on the faculties of multiple universities teaching rehabilitation and exercise skills and conducting a variety of research studies. She is the owner of Foot Centric LLC a continuing education company with a nonprofit arm devoted to educating professionals in foot treatment and conservative care. Proceeds from Foot Centric are used to provide footwear and foot care to needy individuals across the United States and especially in the rural areas of North Carolina.

Ilizarov frame reduction in Mature Talipes Equino Varus

Charles C. Southerland Jr., DPM, FACFAS, DABPM, CWS, DABDA

Treatment of Club foot (Talipes Equino Varus - TEV) has transitioned through several eras over the last ¹/₂ century. From the primarily anecdotal surgical resolutions proposed by Kite, Turco, MacKay and others^{1,2,3,4} to more recently confirmed Ponsetti cast reduction algorithms validated by repeated outcome studies⁵ . Certainly, for Juvenile TEV, the Ponsetti method of deformity reduction is the established sine qua non of treatment⁶. Appropriately administered Ponsetti casting technique has virtually nullified archaic notions of "reducible vs. irreducible clubfoot" 7. Aggressive surgical interventions to attempt to resolve Talipes Equino Varus are presently considered an outdated and ineffective method of reliable deformity reduction⁸. However, as the human foot matures, transitions evolve between the relatively chondroplastic newborn foot and the fully osseous adult foot form. This leads to a less responsive maturing physiology for TEV correction using serial casting methods. Ignacio Ponsetti proposed an age range response of neonate-4 years post partum as a window in which to anticipate successful outcomes in the Ponsetti reduction technique⁹ . Morcuendi has published out comes which extend that window to ~ 7 years post partum, although he acknowledges a longer correction cycle and higher incidence of deformity relapse occur with treatment delayed to greater ages of skeletal maturity. All studies seem to agree that, deformities which have not undergone serial casting by the age of 7 years fall outside the realm of less invasive, serial casting correction¹⁰. Clubfoot deformities of greater than 7 years are referred to as "mature" clubfoot deformities. It is generally agreed that such deformities will usually require more aggressive surgical interventions in order to effect a reduction.

For nearly 20 years, Russian Ilizarov protocols have advocated the treatment of all forms of TEV by Ilizarov correction techniques¹¹. While the application of tensioned wires to infant anatomy may seem overly aggressive by western standards, particularly in contrast with excellent results from serial casting, the Ilizarov process is certainly less aggressive than most other proposed open surgical interventions that have been discussed with respect to "mature" clubfoot¹² . Accordingly, Ilizarov correction of Talipes Equino Varus should be considered a viable option within the gamut of pathomechanical solutions for mature Talipes Equino Varus ¹³.

Tensioned Ilizarov correction of TEV involves a two part system, moving on at least 2 axes. The more proximal portion of the system is composed of a fixation block consisting of 2 or 2 ½ rings connected by threaded rods. These serve as a stable proximal reference block for a distal fixation block segment consisting of a vertical or coronal ½ ring securing the forefoot, along with a horizontal, transverse plane ring to secure the rearfoot. The forefoot coronal ½ ring should be supplemented with an extended, sliding "T" bar that allows for long axis wiring of each of the 5 rays



of the forefoot. There are four movements built in to at least two engines constructed within the frame. There is an engine to invert the forefoot on the rearfoot, an engine to evert the rearfoot, an engine to reduce equinus and an engine to abduct the forefoot on the rearfoot. There is in essence one engine to reduce equinus and the other engine reduces the rest of the forefoot to



rearfoot relationships simultaneously. Abduction of the forefoot on the rearfoot occurs via transverse sliding of the forefoot apparatus and so this might be considered to be a third engine, albeit one that is intrinsic to the forefoot/rearfoot engine complex. To follow are a series of photos taken on a 7 year old child with TEV, who underwent Ilizarov frame correction applied at the Russian Ilizarov Scientific Center in Kurgan Russia while the author was attending a fellowship there in 2001.

The child remained in this frame with daily incremental corrections applied over 6 weeks. The final position was one of slight overcorrection. This remained in place for another 4 weeks. Thereafter the frame was removed, and physiotherapy commenced. Upon the conclusion of therapy, the child was fully ambulatory, without apparent deformity at ~ 3 months post frame application.

It is important to understand that NO WIRES CROSS THE TN joint in applying this frame. The Talo-Navicular articulation is the essential enarthrodial joint necessary to induce triplanar correction within the foot. The forefoot underwent correction through movement of the axial K-Wires, which reduced deformity at the Tarso-Metatarso joints (Lis Franc's Joint). No K-Wires crossed any Tarso-Metatarso articulation in this, merely interphalangeal and phalangeal metatarsal articulations. Wires do transfix Cuneiforms and Cuboid articulations, as well as the calcaneus. In more severe deformities, it may be appropriate to fix the talus with a ½ ring and impose an additional engine to evert the calcaneus on the talus.

Since 2005, Ilizarov Correction of Mature Clubfoot has been an approved practice within the Yucatan Crippled Children's Project. To date, the procedure has been performed on at least 5 extremities in 4 patients, ranging in age from 12 to 15 years. Sample cases and outcomes are reviewed below.

Case #1(unilateral)-AP: In September, 2005 A 9 year old male, born with left sided TEV, unattended to during earlier developmental years, presents with parents complaining of difficulty in ambulation on the left side.









Although the parents were very cooperative about reducing the varus and equinus components of the deformity, The bar on the front of the foot segment was not abducted per directions. Therefore, 2 months later, the reduction appeared as below: Note that reduction of the equinus and foot varus are complete. However, the forefoot remains quite adducted on the rearfoot. Accordingly, the patient was taken back to the operating room and a Lichtblau procedure was performed along with frame abduction reduction as noted below:





The frame remained in place ~ 3 months and was thereafter removed. The patient was placed in a posterior splint and physiotherapy commenced. By 6 months after the initial procedure, the patient was ambulating without difficulty. Case #2 (bilateral): Initially presenting as a 13 y/o male with a history of bilateral clubfoot, apparent since birth. No prior intervention had been offered to the patient or the family in consequence of poor economic circumstance.









A first stage correction was performed on the left foot in January 2008.



In July of 2008, the frame was removed from the left foot with complete correction noted.



At the same time, a similar frame was placed on the right foot. This was removed in a shorter period of time, ~ 4 months. By November, 2009, the patient had completed Physical therapy and returned to normal activities, becoming socially active at the age of 16, following a long reclusive pre-adolescence.





To date, the results of these interventions have been very gratifying for both patients and practitioners. On the above, bilateral case presentation, it appears that the left foot was overcorrected (in keeping with Russian protocols), and has retained this overcorrection. The right foot was corrected to a rectus position and removed earlier than the left. The correction seems to be more pleasing on the right than on the left. To date, there have been several transient superficial pin tract infections, none of which have penetrated to deep bone, or caused any major issues with healing. All patients were followed in Mexico, by an Orthopedic Surgeon assigned to the Yucatan Crippled Children's Project for follow up.

The use of Ilizarov methodology for treating mature clubfoot is discussed. In the small series we have been able to follow using this method, results have been satisfactory. Patients and family members surveyed have unanimously asserted satisfaction with the outcomes, although parents note emotional difficulty in dealing with having the frames on their children during the reduction periods.

Ilizarov methodology should be considered a viable option in the treatment of mature clubfoot.

References

1. Kite JH (1964) The clubfoot. Grune & Stratton, New York 2. Turco VJ. Resistant congenital club foot--one-stage posteromedial release with internal fixation. A follow-up report of a fifteenyear experience. Journal of Bone & Joint Surgery - American Volume 1979; 61(6A): 805-14.

3. McKay DW (1982) New concept of approach to clubfoot treatment. Section 1—principles and morbid anatomy. J Pediatr Orthop 2(4):347–356

4. Nather A, Bose K (1987) Conservative and surgical treatment of clubfoot. J Pediatr Orthop 7(1):42–48

5. Rijal R1, Shrestha BP, Singh GK, Singh M, Nepal P, Khanal GP, Rai P; Indian J Orthop. 2010 Apr;44(2):202-7. doi: 10.4103/0019-5413.61941. Comparison of Ponseti and Kite's method of treatment for idiopathic clubfoot.

6. European Orthopaedics and Traumatology September 2012, Volume 3, Issue 3, pp 183-187 Date: 22 Jul 2012 Is Ponseti's method superior to Kite's for clubfoot treatment?

7. Cooper DM, Dietz FR (1995) Treatment of idiopathic clubfoota 30-year follow-up note. J Bone Joint Surg 77-A(10):1477–1489 8. Morceunde JA, Dolan LA, Dietz FR, Ponseti IV (2004) Radical reduction in treatment of extensive corrective surgery for clubfoot using the Ponseti method. Pediatrics 113:376–380

9. Morceunde JA, Abbasi D, LA Dolan, Ponseti IV (2005) Results of an accelerated Ponseti protocol for club foot. J Pediatr Orthop 25(5):623–626 10. Herzenberg JE, Radler C, Bor N (2002) Ponseti versus traditional method of casting for idiopathic clubfoot. J Pediatr Orthop 22(4):517–520

11. DE LA HUERTA, FERNANDO M.D.,Correction of the Neglected Clubfoot by the Ilizarov Method.Clinical Orthopaedics & Related Research: April 1994 SECTION I: SYMPOSIUM: BIO-LOGICAL AND CLINICAL EVALUATION OF DISTRACTION HISTOGENESIS:

12. Freedman, Jason A. MD*; Watts, Hugh MD†; Otsuka, Nor man Y. MD† The Ilizarov Method for the Treatment of Resistant Clubfoot: Is It an Effective Solution? Journal of Pediatric Orthopaedics: July/August 2006 - Volume 26 - Issue 4 - pp 432-437 13. Hani El-Mowafi, MD, , Barakat El-Alfy, MD, Mohammed Refai: Functional outcome of salvage of residual and recurrent deformities of clubfoot with Ilizarov technique, Foot & Ankle Surgery; Volume 15, Issue 1, 2009, Pages 3–6

Additional References:

Kite JH (1935) The treatment of congenital clubfoot. Surg Gynaecol Obstet 61:190–200

Kite JH (1939) Principles involved in the treatment of congenital clubfoot. J Bone Joint Surg 21:595–606

Kite JH (1972) Non operative treatment of congenital clubfoot. Clin Orthop 84:29–38 [PubMed]

Morceunde JA, Dolan LA, Dietz FR, Ponseti IV (2004) Radical reduction in threat of extensive corrective surgery for clubfoot

using the Ponseti method. Pediatrics 113:376-380

Charles C. Southerland Jr. DPM, FACFAS, DABPM, CWS, DABDA Professor of Podiatric Orthopedics & Biomechanics Barry University School of Podiatric Medicine Director – Yucatan Crippled Children's Project

Understanding Developmental Disability Terms

Susan M. Wright, DPM

It has been estimated in 2008 that 15% of children ages 3-17 have a developmental disability ^{1,2}. The center for Disease Control and Prevention in March physical, emotional, learning, self-help losses or limitations and or a combination of all of these ⁴.

center for Disease Cont. 28, 2014/63 (SSO2): 1-21 studied 11 sites in the United states and estimated one in 68 children at age 8 falls into the Autistic Spectrum Disorder (ASD) ³.

Through the Developmental Disabilities Assistance and Bill of Rights Act a definition was established. A developmen-

tal disability is a chronic impairment that may last a lifetime; manifests itself before age 22 and may include



It has been estimated in 2008 that 15% of children ages 3-17 have a developmental disability First included in the amendments were mental retardation, cerebral palsy, and epilepsy. Autism was included later.

When an infant is first identified as having a developmental disability, she may be referred

to a team of specialists. Included are: developmental pediatrician, speech therapist, occupational therapist, physical therapist and usually an MSC (Medicaid service coordinator). An IFSP (Individualized Family Service Plan) is set into play after all team reports are in and evaluated. In Buffalo, NY area, services for IFSP may be affiliated with an agency or provided in the individual's home. Early intervention is considered critical. Services may include adaptive equipment, transportation, support services for family and care takers. The goal is to maximize the potential and independence of the child.

As school age approaches, the recommendations of the IFSP will be delivered to the child's school district. For NYS school district information visit http://DATA.NYSED.GOV . The CSE (Committee on Special Education) will meet with the parents, school board members, teacher and advocates to develop an IEP (individual education program). At this meeting, services will be decided and classroom. The goal is to provide the least restrictive setting. The classroom size and setting is determined. Some students may be



placed in a BOCES (Board of Cooperative Educational Services), others in inclusion class, others mainstreamed. The committee will decide on speech, physical therapy and occupational therapy. These therapies may be individual or group. A personal care aid, transportation needed and possible RN at school site will be discussed at this meeting. Physical education and or adaptations will be addressed. The CSE meets annually but amendments to an IEP may occur anytime. A child may stay in school till age 21.

If the child leaves the parents home during school years and moves to an IRA (Individualized Residential Alternative) and/or Children's Residential Service an ISP (Individualized Service Plan) is required. The ISP meets every 6 months and should include the IEP from the CSE. The PM (Program Manager) and the MSC as well as parents will attend the CSE for the IEP. The ISP focuses on the individual's need, wants and goals. In NYS, Medicaid requires ISP. During the CSE meetings, the goals of the IEP and ISP should be coordinated.

As podiatrists we need to be aware of these developments and have an input into the education system and IRA. We may be consultants in the school system and IRAS. Familiarize yourself with PNO (Physician Notes and Orders) from IRA or ICF (Intermediate Care Facilities). Be an advocate. References:

1. Boyle CA, Boulet S, Schieve LA, et al. Trends in the prevalence of developmental disabilities in U.S. children, 1997-2008. Pediatrics 2011; 127:1034-42. 2. Screening for Developmental Delays Among Young Children-National Survey of Children's Health, United States, 2007 Center for Disease Control and Prevention, Supplements September 12,2014/63(02); 27-35 3. Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years-Autism and developmental disabilities Monitoring Network, 11 sites, United states, 2010 Surveillance Summaries March 28, 2014/63(SS02); 1-21 corresponding author: Jon Baio, EdS, National Center on Birth defects and developmental Disabilities, CDC telephone: 404-498-3873 Developmental Disabilities Assistance and Bill 4. of Rights Act of 2000. Pub.L. No.106-402.114 Stat 11 (October 30, 2000).

Dr. Susan M. Wright is a Fellow of the American College of Foot and Ankle Pediatrics and in private practice in Buffalo, New York

Apophysitis - Keeping Kids in the Game

Patrick A. DeHeer, DPM

Quality of life issues are not commonplace in pediatric foot and ankle pathologies, but when you are an eight-year-old boy that can't play the sport you love your quality of life most certainly is affected. This is why understanding Sever's disease and treating it aggressively is so important.

Sever's disease was originally described by Haglund in 1907 and later by Sever in 1912^{1,2}. The definition of apophysitis is inflammation of the calcaneal apophysis and has most accurately been described by Kvist in 1991 and Kim in 1999^{3,4}.

Historically, Sever's disease presents in males between the ages of 10 and 14 years who are going through a growth spurt and starting sport's season that complains of heel pain on one or both heels ^{3,5,6,7,8}. There have been many associated findings with Sever's disease such as limited ankle joint dorsiflexion, an underlying biomechanical deformity, increased activity worsens the pain and the child may limp ^{2,5,6,7,8,9,10,11,12,13}.

The incidence of Sever's disease in the literature ranges from 2% to 15% of pediatric musculoskeletal injuries ¹⁴. The pathophysiology of Sever's disease must begin with an understanding of the anatomy.



The epiphysis opens is girls about age 5 years and boys about age 7 or 8 years. It fuses in girls at approximately age 13 years and boys at approximately age 15 years. Proximal to the epiphysis is the apophysis, which severs as the attachment for the Achilles tendon. Both the epiphysis and apophysis are under tremendous stress from the Achilles and plantar fascia. Sever's disease is most commonly described as an overuse syndrome from repetitive micro-trauma due to increased traction on the apophysis ^{6,7,11,15,16,17}. However, there is no substantial evidence in the literature for the presence of an inflammatory process through either histologic or radiographic means¹⁴. Growth spurts have been associated with Sever's disease because muscle grows slower than bone ^{7,18, 19}. Over 18 studies have discussed the relationship of equinus and Sever's disease due to the increased traction on the apophysis ¹⁴. In a study conducted by Vallejo et al 100% of the 22 patients with Sever's disease had equinus, while 21 of 24 subjects in control group did not²⁰. Although biomechanical abnormalities (excessive pronation or supination) have been associated with Sever's disease there is no evidence-based medicine to support this assumption.

In Perhamre et al showed 50% of the patients in their study experienced pain for more than 6 months, 57% reduced sports activity due to pain, and the average pain level on a visual analog scale (VAS) was 7/10 ²¹. Diagnostically, pain standing on one leg was positive for 100% of the patients; pain during with side-toside pressure was noted to be positive 97% of the time; and pain with palpation was positive 80% of the time. This study like others showed no diagnostic reliability of radiographs for Sever's disease.

Table 1 lists the treatments described in the literature with the number of citations ¹⁴.

Achilles Stretching/Extensor Strengthening32Heel Lifts29Modified Rest/Sports Cessation26

Padding/Strapping Heel	23
Orthoses (All Types) 18	
Inflammation Reduction	18
Immobilization 14	
Plantar Fascia Stretching	4
Apophysis Removal 1	

Scharfbillig et al examined the quality of life in patients with Sever's disease and concluded, "The significant differences detected between the two groups suggests that Sever's disease has a real and tangible effect on patient's quality of life and should be treated as efficiently and effectively as possible."²²

This study provides the basis for aggressive treatment for patients with Sever's disease. I typically utilize bracing therapy to treat any equinus deformity, treat the inflammation with a short-term dose of oral steroids, and utilize a soft shock-absorbing heel cup. Pending the patient's response over a 2 to 4 week period of time, orthotic therapy may be also prescribed. I try to only use rest and sports cessation when the patient is not responding to any of the prior mentioned treatments. The child with Sever's disease quality of life can be significantly improved if they can continue their normal activities.

Reference:

1. HAGLUND P: Ueber Fractur des Epiphysenkerns des Calcaneus, nebst allgemeinen Bemerkungen ueber einige aehnliche juvenile Knochenkernverletzungen. Archiv fur klinische Chirurgie 82: 922, 1907.

SEVER JW: Apophysitis of the os calcis. NY Med J 95: 1025, 1912.

3. KVIST MH, HEINONEN OJ: Calcaneal apophysitis (Sever's disease): a common cause of heel pain in young athletes. Sci J Med Sci Sport 1: 235, 1991.

4. Kim, C. W., K. Shea, and H. G. Chambers. "Heel pain in children. Diagnosis and treatment." Journal of the American Podiatric Medical Association 89.2 (1999): 67-74.

5. McKenzie DC, Taunton JE, Clement DB, et al: Calcaneal apophysitis in adolescent athletes. Can J Appl Sport Sci 6: 123, 1981.

6. MICHELI LJ, IRELAND ML: Prevention and management of calcaneal apophysitis in children: an overuse syndrome. J Pediatr Orthop 7: 34, 1987.

7. MICHELI LJ, FEHLANDT AF: Overuse injuries to tendons and apophyses in children and adolescents. Clin Sports Med 11: 713, 1992.

8. MADDEN CC, MELLION MB: Sever's disease and other causes of heel pain in adolescents. Am Fam Phys 54: 1995, 1996.

9. LEWIN P: Apophysitis of the os calcis. Surg Gynecol Obstet 41: 578, 1925.

10. HAUSER EDW: Diseases of the Foot, p 172, WB Saunders, Philadelphia, 1939.

11. KRANTZ MK: Calcaneal apophysitis: a clinical and roentgenologic study. JAPMA 55: 801, 1965. 12. SZAMES SE, FORMAN WH, OSTER J, ET AL: Sever's disease and its relationship to equinus: a statistical analysis. Clin Podiatr Med Surg 7: 377, 1990.

13. ROZENBLAT M, BAUCHOT G: Sever's disease: a new therapeutic approach in a series of 68 athletes. J Traumatol Sport 11: 90, 1994.

 SCHARFBILLIG RW, JONES S, SCUTTER SD: Sever's disease: what does the literature really tell us? JAPMA 98: 212, 2008.
KATZ JF: Nonarticular osteochondroses. Clin Orthop Relat Res 158: 70, 1981.

16. Kaeding, Christopher C., and Robert Whitehead. "Musculoskeletal injuries in adolescents." Primary Care: Clinics in Office Practice 25.1 (1998): 211-223.

 Brantigan, C. O. "Calcaneal apophysitis. One of the growing pains of adolescence." Rocky Mountain medical journal 69.8 (1972): 59.

 MICHELI LJ, IRELAND ML: Prevention and management of calcaneal apophysitis in children: an overuse syndrome. J Pediatr Orthop 7: 34, 1987.

19. PECK DM: Apophyseal injuries in the young athlete. Am Fam Physician 51: 1891, 1995.

20. Becerro de Bengoa Vallejo, Ricardo, et al. "Plantar pressures in children with and without Sever's disease." Journal of the American Podiatric Medical Association 101.1 (2011): 17-24.

21. Perhamre, Stefan, et al. "Sever's Injury: A Clinical Diagnosis." Journal of the American Podiatric Medical Association 103.5 (2013): 361-368.

 Scharfbillig, Rolf Wilhelm, Sara Jones, and Sheila Scutter.
"Sever's disease—Does it effect quality of life?." The foot 19.1 (2009): 36-43.

Dr. Patrick A. DeHeer, DPM is a member of the American Podiatric Medical Association (APMA), and a fellow of American Society of Podiatric Surgeons (ASPS), American College of Foot and Ankle Pediatrics, and American College of Foot and Ankle Surgeons (ACFAS), Diplomat of American Board of Foot & Ankle He is in private practice in Central Indiana, and is the team podiatrist for the Indiana Pacers and Indiana Fever. Dr. DeHeer is on the Editorial Board of Podiatry Today and a regular blogger for Podiatry Today, Guest Editor for Clinics in Podiatric Medicine and Surgery Pediatric Edition 2013, Guest Editor for Foot and Ankle Quarterly Clubfoot Edition 2014. He is the inventor of the EQ/IQ brace and several other medical inventions. He is the President and Founder of Step-By-Step Haiti and a medical missionary with over 25 trips worldwide. Dr. DeHeer serves as a Trustee on the APMA Board of Trustees. Dr. DeHeer is past President of the Indiana Podiatric Medical Association and serves as continuing education chairperson. Dr. DeHeer has served on the APMA PAC Board of Directors, the American Society of Podiatric Surgeons Board of Directors and the American College of Foot and Ankle Pediatrics Board of Directors.

ACFAP Sponsors

We would like to show appreciation to our sponsors:



SPONSOR SPOTLIGHT





The Manta Group was founded by Raymond F Posa, MBA. The Manta Group is a HIPAA and Technology consulting firm with over 30 years' experience; based in Farmingdale, NJ. Mr. Posa holds a Master's Degree in Business Administration in Information Systems. He served as the Technology Advisor to the American Academy of Podiatric Practice Management (AAPPM) for over 15 years; he is a Fellow with the AAPPM and served two terms on the Board of Trustees of the AAPPM. Mr. Posa has written numerous articles on HIPAA and Technology, is a frequent contributor to PM News and is a highly recognized National Speaker on these topics.

Mr. Posa comes from a background in the Aviation and Military Defense Industries. After receiving a BS in Airport Management and an MBA in Information Systems, Mr. Posa spent several years as a database programmer and project manager for several military projects. It was this background that helped hone a unique skill set of analyzing the operations of small companies and medical practices and applying appropriate technological solutions.

Mr. Posa's company was awarded the 1999 Circle of Excellence Award for best small business in Monmouth County, NJ, by the Western Monmouth Chamber of Commerce and recognized by the New Jersey State Legislature for this accomplishment. Professionalism, dedication, and attention to detail are what have separated us from the rest of the pack. When we take on a client, we become an integral part of their operation. We establish long-term relationships with our clients and help them evolve as the technologies evolve. In an era of lean mean corporate machines, Mr. Posa shows small and medium sized medical practices how to leverage today's technology to give them the competitive edge. With an extensive background in computer security from the military, Mr. Posa has emerged as a HIPAA expert and shows medical practices how to leverage the requirements of HIPAA into improved office efficiency and security.

The Manta Group offers full HIPAA compliance services and has a 100% audit success rate to date!

Contact The Manta Group to get your practice compliant now.

Raymond F Posa, MBA President The Manta Group











is proud to present the



to be held at

