

Medical Mission to El Salvador 2015: A Resident Perspective

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The Small Steps Medical Mission Trip is the 13th consecutive mission to El Salvador and 23rd annual mission trip to Central and South America. The goal of this mission is to provide high-quality foot and ankle care principally to the children. Surgical services are provided as well as conservative measures like casting and bracing for complex lower extremity deformities. The team was comprised of 30 vital members. Four podiatrists, 1 orthopedic surgeon, 1 anesthesiologist, 3 CRNAs, 4 operating room nurses, 3 recovery nurses, 3 podiatric residents, 2 podiatrists from Spain, 4 college and high school student volunteers, 3 orthotists, and a photographer and administrative coordinator (Figure 1).

El Salvador is the smallest country in Central America, with a size of approximately 8,194 square miles, comparable to the state of New Jersey. Its population was measured to be 6.14 million in 2015, and its capital, San Salvador, has an estimated population of 1.098 million. The population is comprised principally of Mestizos, and the official language is Spanish. It is strategically located on the Pacific coast of Central America, bordered by Guatemala to the West and Honduras to the North and East. El Salvador acquired its independence from Spain in 1821, and from the Central American Federation in 1839.

There is an ongoing problem with drug- and gang-related violence, with an estimation of more than 70,000 gang members in the country (1, 2).

From September 27 to October 3, 2015, the Podiatry Institute and the Healing the Children medical mission team traveled from 5 different US states, Spain, and Guatemala to San Salvador, El Salvador. Our mission took place at the Military Hospital, to which we were escorted at all times by military guards to insure safety of the team.

The day following the arrival was dedicated to screening patients. Our bus arrived at the Military hospital and we immediately saw an impressive crowd composed of patients with their families (Figure 2). Many of the patients traveled from distant cities and neighboring countries in hopes of being chosen for the life-changing surgery. While the operating room and recovery room nurses were setting up our 3 operating rooms and postoperative area, the rest of the team screened a total of 457 patients. We were fortunate to have some translators from the Rotary Club to facilitate communication as well as a general surgery resident, Dr.

Magaña, who aided in communication with the hospital personnel and helped with referrals and prescriptions. The surgeons and residents performed thorough clinical work-ups and the patients who were eligible surgical candidates were sent to the anesthesia team for clearance. A tremendous amount of pathology was seen in one day, each case was more interesting than the previous one (Figures 3-5).



Figure 1. The Medical Mission Team.



Figure 2. Screening day at the Military Hospital. Our view from the bus upon arrival of the patients and their families patiently waiting to be screened.



Figure 3. A 12-year-old girl with cerebral palsy presented with contracted hamstrings. She was scheduled for a bilateral hamstring release by the orthopedic surgeon on the team.



Figure 5. A 10-year-old girl with polydactyly. She was scheduled for a 6th toe amputation.

Some of the patients were not candidates for surgery but could benefit from orthotics and braces. They were sent to our team of orthotists who fitted a total of 200 children (Figure 6).

Due to the massive demand and our limited time in the country, some patients were scheduled for next year's trip. We scheduled 46 patients for surgery and had a waiting list of 10 patients. Careful consideration and discussion among



Figure 4. A 6-year-old boy presented with bilateral neglected talipes equinovarus. He was scheduled for bilateral talectomies.



Figure 6. The orthotists, busy fitting children on the hospital site.

the attending surgeons took place to organize the surgical schedule for the following 4 days.

We were able to perform 46 surgeries on 65 extremities and an additional 3 patients from the waiting list were able to be treated. All of the surgeries were principally done under spinal anesthesia, except for patients that had previous lower back surgery or spina bifida. In these instances, they received monitored anesthesia care. Each patient was admitted to the pediatric department to ensure pain control and observation. The pain medications and muscle relaxants dispensed to the patients were provided by our team. The postoperative instructions were given to the parents, but also written in permanent marker on the cast to make sure that they were not lost. They all had scheduled follow-ups with 3 local orthopedists for proper cast changes, pin removal, and rehabilitation.



Figure 7. Preoperative iatrogenic talipes equinovarus.

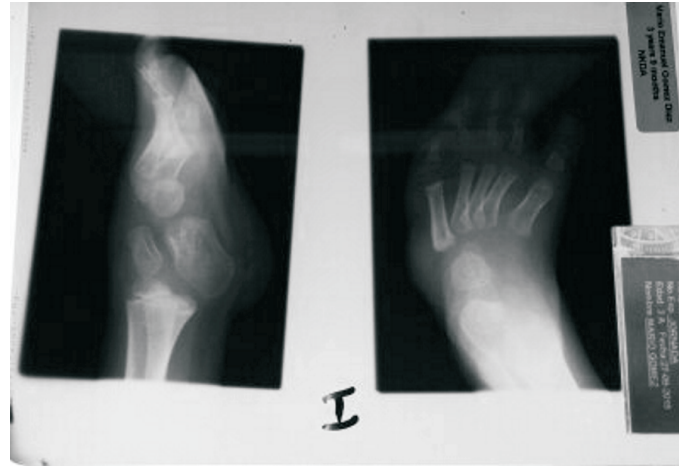


Figure 8. Preoperative radiograph of left talipes equinovarus. We can appreciate the parallel talo-calcaneal angle.

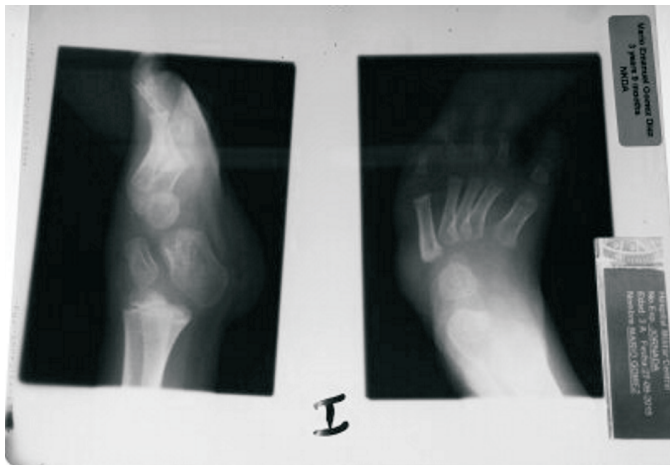


Figure 9. Lateral view of neglected talipes equinovarus.



Figure 10. Modified Turco incisional approach for adequate exposure.

CASE PRESENTATION

A healthy toddler (3 years, 9 months) presented to us with an untreated iatrogenic left talipes equinovarus deformity. After anesthesia clearance and a thorough clinical (Figure 7) and radiographic evaluation (Figures 8, 9), he was scheduled for a left posteromedial release. This procedure was done through a stepwise approach (Figures 10-20). The patient was placed in a cast postoperatively and admitted to the pediatric unit for pain control and observation (Figure 21). He was scheduled in 2 weeks with a local orthopedic surgeon through the military hospital for a cast change and incision evaluation. The Kirschner wires will be pulled at week 8 and the patient will remain in a cast for 3 months total. The orthotist team fitted the patient preoperatively

with a Dennis Browne bar that will be used for 1 year at night time after the cast removal. It is important to mention that surgical treatment of clubfoot is rare in the US because the patients are treated early with Ponseti casting technique. In this specific case, the patient's condition was neglected and effective casting was no longer an option.

There are many valuable lessons to be learned as a Resident. An experience like this one causes you to redefine your practices and fine tune your training. The medical pathways and decision-making skills that have become intrinsic, and the actions that have become part of your muscle memory over the last years must adapt to your new surroundings.

Whether you are well-versed in podopediatrics or are a novice, the experience of assessing a child with a

debilitating neuromuscular disease and speaking to a parent who has traveled many miles and waited all day for your assessment, is a defining one. Your eyes begin to scan the crowd and note countless parents on assessment day pushing wheelchairs or carrying a child in their tired arms, hunched over in the sea of nearly 1,000 people before you. Parenthood is an undying love and devotion for one's child, however, the mothers, fathers and loved ones you encounter have often made the greatest of sacrifices. The fragility of their current state cannot be underestimated - a true test of your communication skills and empathy as a surgeon. Many of these parents have returned for a second or third year in a row with hopes of their child being chosen for surgery. You will be showered with hugs, high pitched wails, wet kisses, tears of utter joy or sadness, and lay eyes on the most unforgettable smiles from children and parents alike; a spectrum of emotions in one day that you may not necessarily encounter in your entire 3 or 4 years of training. Parents place their confidence and trust in your hands without question and appreciate every second you devote to the care of their child - a great responsibility and honor.

For the podopediatric novice, not only are the patient dynamics atypical, but the anatomy is familiar and yet foreign. Bones that you once knew to fit in the palm of your hand are now a quarter of the size and tendons and nerves are thinner and appear more vulnerable. In addition, years of neglect have relocated the anatomy as if you are staring at a disjointed map and trying to recalibrate your compass. With great patience and under the skilled guidance of the attending physicians, navigating the unfamiliar territory is

challenging but rewarding as you appreciate the textbooks and diagrams coming to life.

The luxuries that you have taken for granted in the US jump into focus as you carefully utilize every strand of suture, every glove until it is saturated, and thank your lucky stars for every cc of anesthesia provided for the spinal sedation. You flinch when you realize that there is no fluoroscopy and your Kirschner wire better head right up the pike of that miniature tibia; hopefully, you can celebrate your surgical correction in a few hours when viewing the postoperative radiographs. Every movement in the operating room, moment of tourniquet time, and inch of material is valued to a heightened degree; a paradigm shift from your days back home. Being conscious of all these things while ensuring you provide the best surgical and clinical outcome reminds you as a resident how important it is to reap the true value of each item and cherish every second into creating your end product.

It is difficult to walk away from an experience like this without it changing you in a profound way. At the end of your week-long journey, although you are proud of your work and contribution, a realization washes over you; you have gained far more than you could have ever imagined. The medical team of people you encountered as strangers are now life-long friends. On this trip, you were not a doctor or resident, you were simply Paula, Marie, or Ton. Every person was an integral member who worked toward the same, singular goal: to improve the lives of children who deserve the world and the ability to walk more effectively. And it is with those first Small Steps that the rest of your patient's journey will begin.



Figure 11. A frontal plane tendo-Achilles lengthening is performed first.

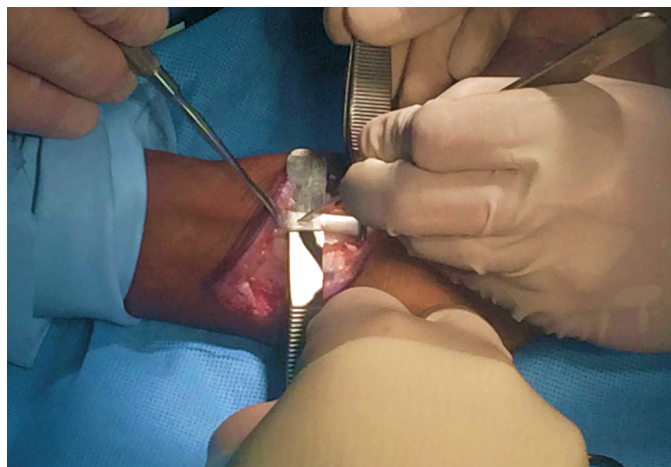


Figure 12. The tight posterior tibialis tendon is identified and a Z-lengthening is performed.

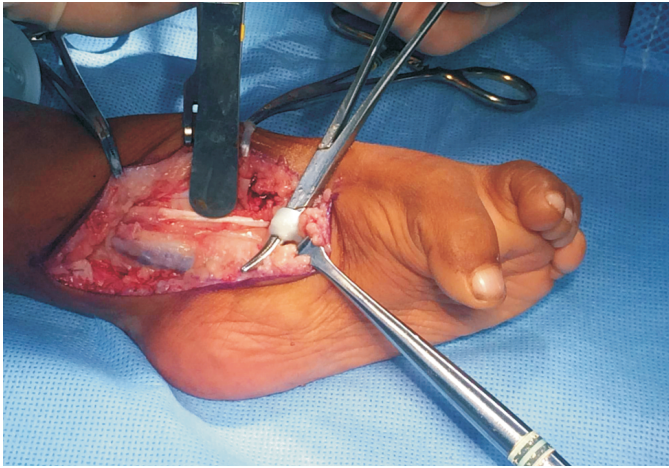


Figure 13. The master knot of Henry is then identified and released.



Figure 14. The small flexor hallucis longus and flexor digitorum brevis are anastomosed and a Z-lengthening is then performed. The neurovascular bundle is easily identifiable.

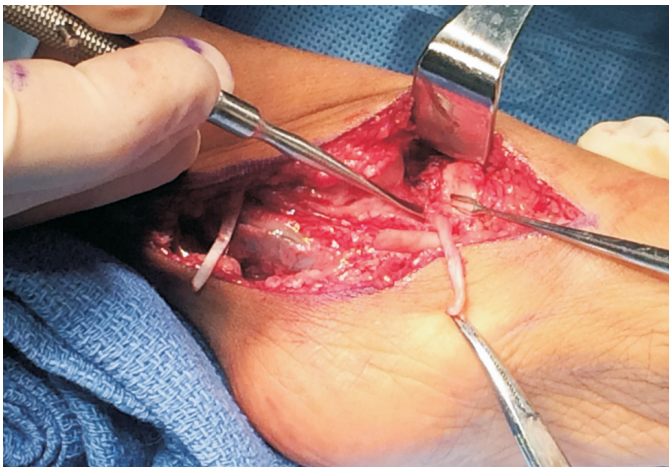


Figure 15. The talo-navicular joint is identified and the capsuloligamentous tissues are released delicately in order to relocate the joint in a proper position.

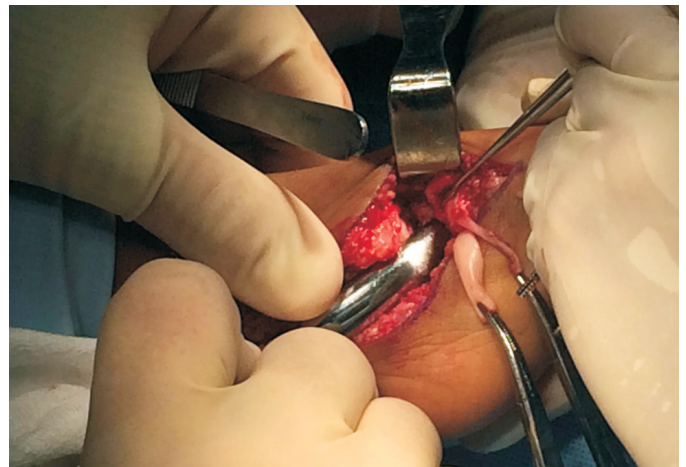


Figure 16. A McGlamry elevator is cautiously utilized to free the tight attachments keeping the talar head in a lateral position.

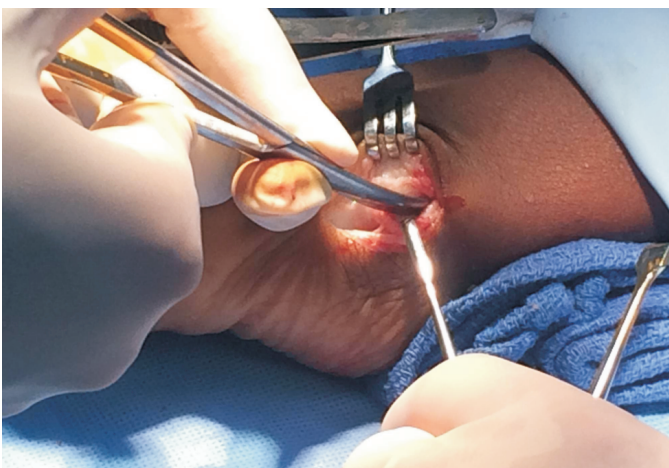


Figure 17. Small lateral incision was made to release the subtalar joint capsule and the interosseous ligament.



Figure 18. Kirschner wires were placed to stabilize the talo-navicular joints and the talus under the tibia.



Figure 19. Lateral view of the foot after surgical correction.



Figure 20. Inferior view of the foot after surgical correction.



Figure 21. The patient was admitted in the pediatric unit for observation.

REFERENCES

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