

What is Orthopaedics?

An Autobiographical Perspective

By Peter A. Cole, M.D., Co-Founder, Scalpel At The Cross

Orthos is a Greek word meaning straight or correct, and pedic also derives from Greek like most medical terminology, and means child. Nicholas Andry was a French physician who first used the term Orthopaedia in the literature in 1741, when he proposed a piece of artwork, The Andry Tree. This symbol depicted on page 7 is characterized by a crooked tree, wrapped to a straight post with a rope which tethers the tree, as if to straighten it out. This is a technique used by botanists and arborists to straighten trees; perhaps you have done the same in your garden. This symbol for Orthopaedic medicine was quite appropriate given that this discipline had its origins in straightening pediatric deformity, often in the feet, though equally relevant to scoliotic deformities and other congenital conditions. Many techniques in orthopaedics are applications of this concept, whether a cast for a broken bone, a splint for a child with hip dysplasia, or even the plate and screws applied to a bone after surgical deformity correction. Our goals are to render "orthos," to straighten or correct. The word bone itself actually translates to Osteo in Latin, so entomologically, orthopaedics doesn't actually contain the meaning for bone, though needless to say the straightening or cor-

recting refers to underlying malalignment of bones. Osteo is found in many common orthopaedic terms such as osteomyelitis referring to bone infection or osteosarcoma referring to bone cancer.

After medical school, one needs to decide what medical specialty upon which to embark, at which time the new medical grad chooses a residency to get extra training. My residency (7 years) was in orthopaedic surgery which in its broadest sense is the discipline addressing the diagnosis and treatment of musculoskeletal pathology. Musculoskeletal includes muscles, tendons, ligaments, bones and joints, which is a broad specialty inclusive of sports medicine, joint replacement, hand and foot surgery, pediatric deformity, bone tumors, spine surgery, and a relatively new specialty (25 years old) called traumatology.

At the end of residency, one can choose to seek extra training in any one of these subspecialties. I chose to do a one year fellowship in the area of orthopaedic traumatology. This is the specialty addressing broken bones (fractures). Generally the extra training teaches the young physician how to manage broken bones in the severely injured patient who

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Modeling God's Love with a Free Gift

by Debra Elmore-Nesheim, September 2009 & January 2010 Team Member

In September 2009, I was working as a Pediatric ICU nurse and was blessed with the opportunity to serve Christ on a mission trip to Peru with Scalpel At The Cross. It was in Pucallpa that I met Alfredo, a 25-year-old paraplegic. He wasn't always paralyzed. In fact, when I met him, it had been only about 45 days since he'd lost the use of his legs in an accident. His story touched my heart.

After being in a motor accident, Alfredo had been taken to the Peruvian equivalent of an Emergency Department. He spent three days lying in the waiting room, paralyzed, before anyone saw him. He was admitted to the hospital, but after two weeks he was told he'd have to leave, because of his lack of insurance or ability to pay. In Peru, few people have insurance or the ability to pay for health care up front. His sister put him in the back of her Gremlin and drove him for many hours to Lima, in hopes of finding someone to care for him. She found no one, and since she had missed about a month's worth of work, she took him back to Pucallpa. They ended up at the Refugio de Esperanza, a rehabilitation clinic on the South American Mission grounds. That's where we, the Scalpel At The Cross team, found Alfredo.

He was lying in the trunk of the car with his limp legs folded up, because the back of the Gremlin was too short for his 6-foot frame. Refugio de Esperanza agreed to give him a bed while alternative plans were sought. We saw him once more that week. He had a fever and was in need of hospital care. Dra. Rosa Escudero, the Peruvian partnering-doctor of Scalpel At The Cross, went to the hospital personally and spoke with the director there. He agreed to take Alfredo! They would help realign his back, and then he would go through rehab so that he would eventually be able to sit up in a wheelchair.

The issues were two-fold: 1. he didn't have wheelchair; and 2. he couldn't afford a wheelchair. I thought about this, and I realized I didn't want this vibrant 25-year-old to miss out on life's oppor-



Alfredo sitting in his new wheelchair surrounded by Chad, Peter and Debra.

tunities because he couldn't afford a wheelchair. This mission trip was about service to others, and God showed me an opportunity to minister in His name and touch someone's life. I was determined to get Alfredo a wheelchair!

Back in the States, I told my family and friends my plans to find Alfredo a wheelchair. My mom works at a Christian college, and said there was a used one in need of repair at the school. She would take it to maintenance to see if they could fix it for Alfredo, and she'd order a new one for the school. Wonderful, except that was where the devil jumped in and tried to discourage us. Once the maintenance team fixed the old chair, they gave it to the Sports Department at the college. They told my mother that it was technically still theirs, and they could do what they wanted to with it.

As it turned out, my mother became determined to find a wheelchair for Alfredo, too! She took Christmas money that she'd set aside for presents, and decided to use it for the chair. Then my sister donated her Christmas funds! And when I told a good friend this story, she sent a check to help fund the purchase! My mother went to a medical supply store and told the manager our reason for buying a wheelchair. He stepped up and sold us one that had been rented out just once! And he sold it to us at a fantastic price.

As it turned out, God had used the obstacle of the loss of the free, but in fair condition, wheelchair to allow others to rise to an occasion of service! My mother was challenged to find a different wheelchair. My sister & I had a chance to sacrifice by forfeiting our Christmas presents and monies. A good friend was able to serve on a mission field through a donation. The medical supply store was able to serve by living its purpose. Alfredo would receive a wheelchair in excellent condition!

In January, I was able to travel with Scalpel At The Cross again, and present the wheelchair to Alfredo. He looked amazing compared to when we saw him in September! He came to our clinic day at Hospital Regional de Pucallpa and was using a chair that belonged to the hospital. When he was presented with his wheelchair, I told him how his story had touched my heart in September. I told him that my family and friends had worked to get him a wheelchair of his own. He was surprised that people who didn't know him personally would think of him in this way. He said now others could take him places and he'd be able to get to church! He said that having a wheelchair would change his life.

That right there made the 3-month-long search for the wheelchair worth every moment and every challenge. As it says in Romans 5:3-5, *"...we rejoice in our suffering, because we know that suffering produces perseverance; perseverance, character; and character, hope. And hope does not disappoint us, because God has poured out his love into our hearts..."* I pray that your heart will be touched by the Spirit at some point in your life, as mine was through the Scalpel At The Cross mission trips. Please pray for Alfredo's health, and that his life will be enhanced regardless of his new physical disability.

Debra is now working as a Maternal Child Health Nurse on the Red Cliff Indian Reservation in Bayfield, WI.

Claudia , Our Ever-Smiling Patient

by Kevin T. Emerson, January 2010 Mission Team Member

Each time I travel to South America as part of the Scalpel At The Cross mission team, I come back with a new appreciation for how easy our lives are in the United States, no moreso than today as I reflect on my recently completed third trip to the country of Peru. It is very hard to describe the things that one experiences, especially to someone who has never visited a third world country before.

Understanding how the medical process works in Peru is complicated and many times infuriating. You see in Peru, the only way to get medical treatment is to pay for that care in advance! If you can't pay you don't get treated; such was the case for seven year-old Claudia, a beautiful smiling little girl. Her loving parents could not afford the cost of proper medical treatment of her right arm which as she grew developed an improper alignment.

During our initial evaluation of Claudia in one of our medical clinics, she captured the hearts of the entire medical team with her infectious smile. We gave each child a toy before their medical examination, but Claudia was more interested in a partial roll of toilet paper on the counter than a toy! You see in this region of the world, toilet paper is very hard to find and is usually stolen from public restrooms within a few minutes on being placed. It is one of those little oddities that makes you shake your head. Each team member is encouraged to take a roll of toilet paper everywhere we go - just in case the need arises. Needless to say, Claudia ended up with both the roll and the toy.

Our mission's purpose is to provide free surgeries to those who cannot afford it. When we see a young patient such as Claudia, we all immediately want to jump in and help improve her quality of life. The challenge is in taking all the surgical supplies, plates, screws, and medications needed with you from the USA to Peru.

The mission is fortunate to have developed a positive relationship with the Hospital Regional de Pucallpa over the past few years, providing us with an operating room and access to anesthesia. Traveling with a group of 10, we are only allowed to check 20 cases,



Claudia's smile brightened everyone's outlook after a long day of surgeries.

packed with 50 pounds each containing those precious supplies, plus a carry-on with all our personal belongings.

Claudia was all smiles as she was wheeled into the operating room knowing that the American doctors were going to fix her arm. Dr. Cole explained in Spanish what he was going to do during the surgery and she just kept on smiling the whole time! The surgery went well and Claudia was wheeled to the recovery room. As she slept, we retrieved a coloring book and crayons for her from our supply trunks, so she could have it when she awoke. You see the children at my church in Peru, Indiana, and many other gracious donors had



collected clothing, toys, school supplies as well as bandages, band-aids, pain relievers and ointments for the trip to distribute to those in need.

When Claudia awoke she was once again all smiles, briefly glancing at bright white cast which now covered her surgically repaired elbow, then lighting up when she saw the new gifts beside her on the gurney. It is amazing what an effect a \$1 coloring book and crayon set can have on a child. Each member of our team had a picture taken with brave little Claudia. When the other young patients cried and screamed before and after their surgeries, Claudia just kept on smiling. She was truly a patient to remember!



Sean Codier with Claudia and her Dad.



Claudia coloring a picture in Post-Op.

¹Blessed is every one who fears the Lord, who walks in His ways. ²When you eat the labor of your hands, you shall be happy, and it shall be well with you. ³... your children like olive plants grow all around your table. ⁴Behold, thus shall the man be blessed who fears the Lord. - Psalm 128:1-4

Scalpel At The Cross

January 14-23, 2010 Mission Trip Report

Pucallpa/Lima, Peru

It is so important to us to keep our friends and donors aware of what God is doing in our mission. We want to share the good news with others of His graciousness. We have hit the ground running in 2010, kicking off the year with a trip that occurred January 14-24. The January mission trip included two orthopaedic surgeons, three registered nurses, a medical student, a Peruvian doctor and three support members. The team evaluated 126 patients in clinic and completed surgical procedures on eighteen patients while in Pucallpa. In addition, in the area of prostheses and orthotics, the team delivered three prostheses and made molds for four amputees. It never ceases to amaze us how God seems to assemble a caseload right before our eyes! What a blessing!!

Below you will find the surgical procedures we performed while in Pucallpa.

Patient 1, Male age 21: Left femur open fracture - SIGN Intramedullary Nail

Patient 2, Male age 27: Right clavicle - Removal of hardware

Patient 3, Male age 45: Right tibial plateau fracture - External Fixator

Patient 4, Male age 43: Left tibial plateau fracture - Plate & Screws

Patient 5, Female age 7: Right elbow malunion - Osteotomy, Plate & Screws

Patient 6, Male age 48: Left ankle fracture - Plate & Screws

Patient 7, Male age 10: Left elbow malunion - Osteotomy, Plate & Screws

Patient 8, Male age 56: Right hip girdlestone reconstruction/arthriodesis - Plate & Screws

Patient 9, Male age 13: Left hip, knee, right foot, infection and septic arthritis - Irrigation & Debridement

Patient 10, Male age 40: Right tibia osteomyelitis - Irrigation & Debridement

Patient 11, Male age 16: Left ankle malunion - Plate & Screws

Patient 12, Male age 20: Right femur delayed union - Plate & Screws

Patient 13, Female age 6: Right elbow malunion - Osteotomy, Plates & Screws

Patient 14, Female age 76: Left hip fracture - Dynamic Hip Screw

Patient 15, Female age 2: Left & Right polydactyl small toe deformity - Excision

Patient 16, Female age 12: Left wrist malunion - Osteotomy, Plate & Screws

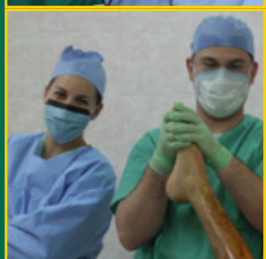
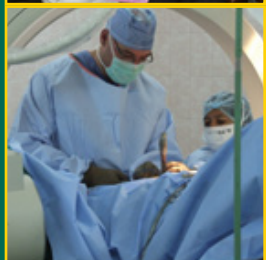
Patient 17, Female age 9: Right elbow malunion - Osteotomy, Plate & Screws

Patient 18, Male age 8: Left wrist malunion - Osteotomy and K-wires

In addition to the medical and surgical work that occurs during our mission trips, you may recall that one team member, Dra. Rosa Escudero de Vera continues our work by following the patients full-time in Peru. To date she has completed over 60 follow-up evaluations and has greatly improved our ability to stay in contact and fully complete the care of our patients. She has also provided some critical general medical care to our patients and their families as best as our resources can permit.

The Lord is faithful in all His words, and gracious in all His deeds.

- Psalm 145:13



Isn't It Amazing!

by Kelli Hooks, Missions Coordinator, Scalpel At The Cross

Have you ever looked back on your teenage years and all the fights you had with your parents and the lecture of “when you are older you will understand!” It never failed to make the teenager (me) madder than I already was. However, by the time I was in my early 20's I realized, WOW, my parents were so right!!!

I have learned through many hard lessons that God's love for me is stronger than anything I could even imagine. He, like my parents, knows what is best, what is right for my life and I am so blessed to have the testimonies to share of that Love.

My first testimony started when I was only a few days old when my birth mother realized that she could not care for me. It so happened that a mutual friend of hers was also friends with my parents. So it came to be in a matter of 2 short weeks I was the daughter of Eldon and Jenean Rager (yeah, those parents that are always right!). The story in its entirety puts most to tears, how Mom and Dad didn't even hesitate to say yes, how I was delivered to them on Mom's birthday, at the drug store no less, and how they have always loved me as theirs as God loves me as His!!

My most recent testimony is that of how I became part of Scalpel At The Cross. It actually began probably 6 years ago when I first met Lisa Schroder (Director of Scalpel) at work. We both happened to work at the same Orthopaedic Company and just so happened to also live in the same town. My entire career at this company was in one department and I saw a lot of people come and go through my twelve years; Lisa was one of those people. She had been in “my department” for about 3 years when she unexpectedly resigned. I was shocked, how could a woman that had that high of a level of leadership and responsibility just take that leap of faith??? Amazing!



Kelli Hooks managing the Home Office in Rochester, Indiana.

It was three years after Lisa was gone that I lost my job. It was absolutely devastating to me and I could not understand why God was allowing this to happen. He knew I held the insurance for the family, He knew our financial issues, how could He do this? I was so angry at myself, at Him, at anyone who came close. It took Lisa several messages to get through to me, as I wasn't talking to anyone, but thanks to the good Lord above, she didn't give up on me!!

Finally she convinced me to come over and she told me her story about leaving the corporate life and how she became part of the mission. She said she felt I, too, was to be part of this awesome work that we do in the Lord's Name, and with His blessings. How did God do this? How did he bring us together again, in such a different “world?” He knew all along that Lisa and I would one day work together, again for Him!!

I have been with the mission for almost 2 years now and have never in my life felt more fulfilled with what I am doing. We are not making someone rich, but we are making other peoples' lives rich, not with money but with the love and compassion that our teams bring to them, to help them with their orthopaedic needs and more importantly to bring them to our Lord and Savior, Jesus Christ. God has brought so many wonderful people into this mission, as board members, as donors, as team members, as a prayer posse. What an honor it is to serve the Lord in this way and to see again in my life just how AMAZING His love is!!



Tarantulas Really Bite!

by Kevin T. Emerson, September 2009 Team Member

While capturing the beauty of the Amazon Jungle with my camera, I had an encounter with one of the jungle's native inhabitants, a tarantula. I was minding my own business, taking pictures of some colorful flowers, when I bent over to get a close up of a pretty red flower. On the way down, my head brushed up against a bush and I thought nothing of it. I took the picture and on the way back up, I felt something brush my head. I assumed it was the same branch I had disturbed earlier, but I was wrong! As I stood up, I felt something rather large scurry beneath the collar of my scrub shirt. While doing a little dance, I lifted the back of my scrubs to show mission director Lisa Schroder, who was standing next to me. "It's a Spider! It's a giant Spider!" she yelled. "Well get it off of me!" I remarked in return.



The story becomes unclear at this point as to who actually knocked the spider off my back, Lisa or I, but what was clear was the burning sensation radiating from the bite the spider gave me before vacating my back. The poor spider then fell to the ground and fell victim to my shoe as his jungle life came to an end.

Fortunately all of this excitement took place next to the Swiss mission and a venom kit was readily available. Within a few moments, with the help of Anita Fehr and Dra. Rosa Escudero, the kit was used to suck out the venom from the wound and the pain and burning sensation gradually subsided. I was told by Lisa, "As a final precaution that a taser should be used on the wound to break down any amino acids from the venom."

The statement itself sounded harmless enough. Upon returning to the Jungle Bunks, Lisa retrieved a taser and test fired it. A massive bolt of electricity arched across the contact points with a magnitude that I felt could have dropped an elephant in his tracks... so I opted to skip the voluntary electrocution! I can now say I have survived a tarantula bite!



Prayer & Praise Points

Scripture instructs that God answers the **PRAYERS** of His people, we therefore prayerfully request:

- That God would blanket our mission travel June 19-28 with His peace and protection as we seek to introduce family members of our board and team to jungle missions firsthand.
- That our relationship with missionaries at Cashibo on the SAM aviation campus as well as those at the Hospital de Pucallpa and Amazonica would be ones of edification, encouragement, and solidarity as we seek to be the "aroma" of Christ across settings.
- That we might successfully reconnect with those surgical patients from January's trip that were already operated on, in addition to those who are yet to be operated on, as we share the Love of Christ through this healing ministry.
- That extensions of our orthopaedic work (i.e., the Ponsetti approach to treating children with clubfoot and the prosthetic's arm of our mission) continue to grow and prosper as the Lord wills.
- That our donor development project will yield fruit for the mission both evangelistically as well as financially.
- That we as a mission would fully appropriate the truth of Psalm 138:3, "*On the day I called, you answered me; my strength of soul you increased,*" such that we find full satisfaction in Him alone as our portion and daily sustenance.



Jason Caron poses with two young patients



has sustained many bodily injuries (i.e. chest, head, abdomen and/or multiple fractures in multiple extremities), which demands different approaches for which there are unique nuances for the critically injured. The extra year of training also focuses on complexities of fractures, such as multifragmented breaks, fractures that enter joints, as well as fractures in bones with complex shapes such as the pelvis, hip socket, midfoot and hindfoot, shoulder blade and elbow bones.

Lastly, orthopaedic traumatologists take care of bones that do not heal properly, such as when they heal crooked or with an infection. Sometimes bones do not heal, manifesting in an entity called nonunion. In the Amazon, there are many patients with bones that never healed after a break, or healed crooked or with infection, because most patients never get to see an orthopaedic doctor.

Just because bones are solid, does not mean they are like wood, rather they are more like trees, in that they are living organs with a blood supply and a dynamic capacity for change on a minute to minute basis, just like the liver or heart. In that sense, orthopaedics is not carpentry. Bones grow, change shape and density over time, from the tiniest embryo to the last breath of a frail elderly patient. They need to be treated as such, both in states of health and pathology. This “organ system” thus provides a wealth of unsolved questions which generate many research projects which I work on with my research team at Regions Hospital and the University of Minnesota.

In the city of Pucallpa, Peru, where our Scalpel At The Cross mission camp is, there are three doctors who call themselves “traumatologos.” There are none in the rest of the surrounding Amazon Basin where countless tribes exist hidden (some undiscovered) deep in the vast rainforest and unconnected to society as we think of it. These “three doctores de traumatologia” serve a population of 300,000 inhabitants sprawling out of this lumber town of Pucallpa on the Ucayali River, and perhaps another few hundred thousand Indians in the surrounding million jungle acres. They work out of three run down, overridden, under resourced hospitals. The need for patient care is beyond anything imaginable in the United States of America.

I chose orthopaedic surgery, and specifically the niche of trauma for many reasons. First, I regard this career decision as a calling. I did

not hear God speak to me audibly, but He gave me a deep conviction that this field was where I belonged, and a relentless perseverance to pursue that path. Furthermore, I prayed to God for my career leading, and sought insight during my study of the Bible, and tried to interpret the doors He would open and close for me. At times He would close doors behind me—no going back! I would seek my wife, Nancy’s wise counsel, as she knew me best. She would maintain an open mind to His leading.

In general terms, I had a sense back in medical school, that this area of medicine aligned with my medical background, my clinical interests, and my personality. First, my medical background included going to medical school at the University of Miami (1986-1990) right during the peak of *Miami Vice*. My rotations at the Jackson Memorial Mega Hospital were highlighted by one 8-week adrenaline rush on the Trauma Surgery service during which time the trauma unit was nonstop whiplash due to the narco-wars which made that era famous, and the city infamous. Had God placed me there for this reason? I went on to residency at Brown University in Providence, Rhode Island, for the next seven years. I was sure that it was by Providence that I landed in Providence, given that I encountered life changing mentors that influenced me further to pursue the field of trauma. This ultimately launched me to the busiest trauma center in the world for fellowship, Harborview Medical Center in Seattle, Washington (1997/98). Second, my clinical interests were characterized by enjoying working with the broadest range of patients: young and old, rich and poor, healthy and sick, male and female. Oddly enough, I enjoyed working with patients who had significant social problems, which are very common amongst trauma patients: alcoholism, drug addiction, abuse victims, suicide. I recall thinking about why I was attracted to this specialty which turns off most surgeons because of all the unseemly patients, “certainly if Jesus were an orthopaedic surgeon, He would have chosen trauma,” and, “if Christians don’t dive in and take on these patients, who will?” Was I crazy? Perhaps! In fact my summer job in medical school was working on a team which researched AIDS populations, during which time I conducted on site interviews with patients, often

at methadone clinics and sometimes crack houses. But certainly not all patients in my field are deviant; trauma cuts across all social strata and accidents sparing no one. An accident can happen to you in the next five minutes. That is why I often explain to people that each one of us should have our eternal life insurance policy in place now. Third, I felt that the field of orthopaedics and trauma suited my personality. I tend to like the unpredictable, and tend to feel that getting routine is like getting into a rut, and I enjoy complexities and building things. When things are broken, I like to fix them. I cannot think of a better field for me than orthopaedic traumatology. Patients tend to be extremely grateful for the care they receive, and I have learned that they recognize their need for God most when they are in a crisis.

Scalpel At The Cross is a medical ministry, and its team members collectively provide orthopaedic care to Peruvian patients and the missionaries who serve them. The seeds of this ministry grew out of subsequent circumstances and elements in the lives of Nancy and I, also which manifested in a calling, and which tell another story unto itself. God is no less than magnificent the way He weaves and propulses our life journeys in miraculous layers of action which synergize in initiatives like Scalpel At The Cross. Though I am humbled by the magnitude of the orthopaedic work in the Amazon jungle, next to the miniscule contribution we make to offset the pain and suffering of bone conditions, I understand that all I am supposed to do is follow Jesus, and let the Lord work one heart at a time. We are merely instruments, but we are His, and so there is joy in knowing that it is not up to us to solve the world’s problems—an absurd thought; rather, in simply knowing that we are simply following, enjoying, and glorifying Him.

The Bible says in Proverbs 17:22, that a cheerful heart is good medicine, but a crushed spirit dries up the bones.

This verse yields powerful imagery, given that the only place one would witness a dry bone is in a skeleton. It acknowledges that bones are meant to be vital. We should seek a cheerful spirit therefore, given that God has provided us with abundantly more than we deserve or need, inclusive of everlasting life through the death of His son. And we ought to cry out to God when our spirits are broken, knowing that if He made us, He can certainly revitalize our bones and restore cheer to our hearts.

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A Christian Medical Mission to the Peruvian Amazon