

Orthopedic Mission to Jinotega, Nicaragua January 21-28, 2012

A Report

Carried out under the auspices of

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Team Members

Dahners Laurence Orthopedic Surgeon trauma
Leo, Jan Orthopedic Surgeon hand
McNamara, Gerald Orthopedic Surgeon general/sports
Tennant, Joshua Orthopedic Surgeon resident
Moore, Vicki Anesthesiologist
Kim, Young Ae Anesthetist
Hoffman, Jules RN
Tennant, Melissa RN
Beale, Paul Surgical assistant
McSkimmings, Michelle Surgical technologist
Flores, Luz Surgical technologist
Skwerer, David, Biomedical engineer
Abimbola, Obafunto Medical student
Pickard, Tim Volunteer
Hoffman, Randy, Volunteer

Contacts in Jinotega

Dr. Felix Gonzales (Ortopedista Hospital Victoria Motta)
Dr. Felipe Paredes (Ortopedista Hospital Victoria Motta)
Dr. Raphael Trujillo (Ortopedista Hospital Victoria Motta)

The Location

Nicaragua was very poor as a result of the 1980s Sandinista war but continues to recover with significant improvements noted each year when we return. Jinotega (the city of the mists) is located about 100 kilometers north of Managua, Nicaragua at an altitude of about 1,000 meters.

The drive from Managua now takes about one hour 45 minutes. Like other tropical cities at higher altitudes Jinotega has a very pleasant climate year round. This trip in January

falls in the dry season but it rained almost every day but the temperature was generally warm but pleasant. Temperatures ranged from 65-75 degrees during our stay there. Jinotega is placed in a small valley in the coffee growing mountains and has a population of about 120,000 people. We stay three blocks away from the hospital in the Hotel Café, a very nice facility which is very clean and has a fine restaurant. It even has Wi-Fi for laptops. We went out to several other nice restaurants during our stay and they also provided good food. The tap water is apparently chlorinated and other than some mild diarrhea no one got seriously sick (however many of us were taking daily Doxycycline for Malaria and diarrhea prevention).

The Facility

The hospital is in the middle of the city and moderately old with large multibed wards in narrow wings for ventilation. There are some “private” wards with private rooms for patients with insurance but none of our patients this year were in them.

The operating theater has three rooms, of which they kindly allow us the use of the two largest. The third is mostly used for C-sections and other emergencies during our stays. Much of their equipment is in poor condition. Sterile practice is problematic as they are not careful about the sterile field and gowns and drapes often have perforations. They do not use sterile waterproof barriers on their back tables or surgical field. They do not have a flash autoclave and so any instruments needing rapid sterilization are placed in a “sterilizing solution” (composition unknown, but perhaps cidex). They have very few infections though.

Circulators and Anesthesia Technicians (who provide the anesthesia) often leave the rooms for periods of time.

They have no fluoroscope or portable x-ray machine.

We brought some battery powered Stryker System 5 and 4000 surgical drill-saw combos, however, they do not have a flash autoclave and so cannot sterilize the batteries (which are wiped with alcohol and covered with stockinette or a glove). The 4000 system from last time only had the handle and drills, the rest of the attachments could not be found. They are running low on batteries for these. They use Black and Decker drills, wiped down with alcohol for minor procedures.

They have a video tower with which they occasionally do arthroscopies over the past year using the arthroscopes and instruments we brought. We received donations of equipment to make this tower much better but still need a decent monitor.

Last year they cleaned out the room where they have stored the equipment we have brought to the hospital in the past to make a recovery room out of it and put the equipment in several rooms around the hospital where it is disorganized and inaccessible. This trip they had set aside a different smaller room to keep the orthopedic equipment in and Tim, Randy and David worked on putting in shelves while Jules worked on organization of the equipment. This was working fairly well by the time we left.

The Schedule

We traveled all day Saturday arriving in the evening.

We held clinic from 8 to 4 on Sunday
 We operated from 8 to 1-5 on Monday – Thursday. One case Friday.
 We left for Managua Friday at 11 pm and flew out on Saturday.

The Patients

We saw 127 patients in the clinic on Sunday with about 15 more “consults” during the week between surgical cases. Many of the patients had conditions that were untreatable or that we did not have the expertise or equipment to treat.

We performed 40 operations which are listed in the table below.

Jinotega Surgery Schedule		
	Room A	Room B
Monday	Jose Blandon 19y M Machete L arm explore, rep tendons	Sebastian Silas Gonzales 2.5m M L perc TAL Cast
Monday	Marbely Castro 30 y F CRPP R wrist fx	Melvin Palacios Rizo 8 y M R distal ulna osteotomy, relocate radial head
Monday	Santos Sanchez Rerez 32y M Debride ulna revise ex fix	Rosa Castro Zelandon 37y F R med meniscus Scope
Monday	Marta Isabel Lopez 39 y F L CTR	Maria Diaz Rodriguez 65y F R FDT-PT transfer, lateral calcaneal wedge osteotomy
Monday		Karla Amador 40y F R foot I/D
Tuesday	Joel Ubara Peralta 13m M L perc TAL	Ana Murillio Centeno 23m F L tib pro fib ankle fusion
Tuesday	Fabida Herrera 7y F B ST joint 4/5 screw removal	Rodrigo Ubeda 6y M L old monteggia ulnar osteotomy, relocate radial head
Tuesday	Sayda Espinoza 42y F L Knee scope	Morelia Cruz Rodriguez 15y F L Hip Fusion
Tuesday	Mayda Arostgai 37y F R great toe nail ablation	Juan Tomz Reoj 45y M Equinus contracture Iliz+TAL
Tuesday	Maria Chavarria 46yyF Bunion Proximal Osteotomy	Elver Herrera Guiterre 8y M ORIF Machete injury to R long finger
Tuesday		24y F Realign extensor tendon L long finger

Wednesday	Mirna Calero Ruiz 24y L thumb IP contracture, IP fusion	Irving Pulido 10y M amp r FL release scar
Wednesday	Fernando Amodor Lanzas 53y M B taylor bunionectomy	Rolandon Zeas Diaz 39y M polio LL wrist fusion tendon shortening
Wednesday	Rufo Rodruguez Alvarez 37y F R knee scope PVNS	Veronica Garcia 32y F Ex L distal ulna bone graft radius
Wednesday	Dervin Castro 4y M Machete L hand	Berta Davila Pineda 71y F ex dupuytren's R
Wednesday		
Thursday	Marta Garcia Villagra 49y F R. knee scope	Nelly Mendez Talovea 4y F L clubfoot
Thursday	Maykely Rivas Torrez 9y F L HWR Hip (Sub-Q K-wire)	Santo Sobalverro 55y M R non-union Tibia Fibular osteotomy graft tibia
Thursday	Tonia Gonzolez 20y F L knee ACL recon	Biance Zequeira Leiva 35y M B tib non-union ORIF graft
Thursday	Irma Rizo 56y F L Bunionectomy/hammer toe Hallux Valgus	Miriam Gutierrez 59y F L HTO Vicki requests med records & cardiology info
Thursday	Fernando Olivas 23y M explore repair I ulnar n	Amelia Mambrano 45y F R Dequervian's
		Elver Herrera Guiterre 8y M ORIF Machete injury to R long finger, Amputation
Friday	Ana Murillio Centeno 23m F L tib pro fib ankle fusion	

We encountered one complication in Ana Murillio Centeno 23 month old female in whom we performed a L tibia pro fibula with ankle fusion for loss of the tibia to osteomyelitis. Her K wire fixation of the ankle fusion failed and had to be revised.

The Equipment

We took approximately 1400 pounds of tools, supplies, medications, equipment and implants with us, almost all of which we left in Jinotega.

Results from the previous years' surgery

We saw two patients from previous years' surgery. The doctors assured us that the others were all doing well (although this is difficult to believe).

A patient status post a TKR three years ago, now infected. Offered excision and arthrodesis, chose gentamicin injection q 2-3 wks for a while instead.

Morelia Cruz, a 15yo female patient with a very complex pelvic deformity post trauma and status post adductor release for adduction contracture of L hip which was ineffective. Also status post pelvic osteotomy, ineffective. The hip was fixed in an adducted position. Performed a hip arthrodesis during which it became evident that the problem with the hip was AVN, probably from a late reduction of a hip dislocation.

Overall

We all had a wonderful time with very gracious hosts, believe we did some good for the people of Nicaragua and are ready to go back next year.

NEXT TRIPS

Equipment to take

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A small flatscreen monitor would be nice for the scope setup.

MEDS

- Injectable steroids (Kenalog, Depomedrol, Aristocort)

IMPLANTS

- Steinman pins and K-wires
- Small Frag Screws – all sizes, but especially shorter ones
- Large Frag Screws - all sizes, but especially shorter ones
- cement, cement, cement

TOOLS (THAT YOU CAN GET AT HARDWARE STORE)

- Pliers, wire cutters, pin/bolt cutters, and vice grips out of chrome cobalt that don't have rubber handles if you can find them so they will tolerate autoclaving
- Extension cords for OR
- Permanent Markers
- Bins to Organize Supplies
- "organizer trays" like for silverware or desk drawers that we can sort screws into,
- Baggies to sort things into
- Label Maker
- Cordless electric drills (Black and Decker type)
- 7, 10 and 11mm wrenches for them to use on external fixators
- wire cutters,

INSTRUMENTS

- Linatec or Dyonics shavers
- Large self retaining retractors
- T handle chuck (big ass)

- Small Mallet
- Small Ronguers
- Scissors-Mayo and Metzenbaum
- wire cutters
- Mini Frag Screw Driver for 1.5 and 2.5 Screws
- Small Osteotomes - Hand
- Large Osteotomes – Narrow Widths
- Currettes – Small Sizes

DISPOSABLES

- Coban
- Ace Bandages
- Sterile stockinettes for draping
- Fiberglass Casting Material
- Sterile Webril
- Sterile Esmarchs
- Steri Strips and Benzoin
- Suture, ALL TYPES but especially large such as #2 nylon, 0 vicryl, #5 ethibond, also monocril 2-0, 3-0, 4-0, 5-0.
- Cautery Pencils
- Suction Tubing
- Sterile Yankauer and Neuro Suction tips
- Sterile Gloves
- Knee Immobilizers – all sizes
- Alumi Foam finger splints
- Arm Slings
- 4 x 4 and 4 x 8 Gauze for Dressings
- Laps
- Tape and dressing supplies, especially 3" tape

REUSABLES

- Cloth Gowns
- Cloth Drapes

TEACHING

videotapes or books (in Spanish if possible) that demonstrate

- sterile technique, how to setup the back table and drape the patient
- AO technique
- Campbell's
- Medical textbooks that are only 1-2 editions out of date (spanish texts are great if you can get them but english are helpful too, and we can read them when we're stumped)

Equipment to invent

- Autoclavable impervious drapes for back table and "U" drapes for patient limbs, Tarps?