

Orthopedic Mission to Jinotega, Nicaragua August 2009

A Report

**Carried out under the auspices of Project Health for León
(PO Box 30953, Raleigh, NC 27622-0953, Dr. John Paar)**

Team Members

Ty Bullard (Anesthesiologist)
Donald Bynum (Orthopedic Surgeon - Hand)
Pier Bynum (Volunteer)
Laurence Dahners (Orthopedic Surgeon – Trauma)
Grant Fowler (Volunteer)
Marcia Guine (Anesthetist)
David Jarrett (Orthopedic Surgeon – General)
Marquee Lucas (Volunteer)
Judson Lilly (Stryker Representative)
Jordan McCaskill (OR Nurse)
Rachel Reilly (Orthopedic Resident – Trauma interest)
JD Ward (Surgical Technician)

Contacts in Jinotega

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

The Location

Nicaragua is very poor as a result of the Sandinista war but seems to be recovering at a rapid rate 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 two hours. Like other tropical cities at higher altitudes Jinotega has a very pleasant climate year round. Though this trip in August falls in the rainy season, it rains usually only in the afternoon or evening. Temperatures ranged from 60-75 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 had 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 treated 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 during our stays. Much of their equipment is in poor condition. Sterile practice is unusual to our way of thinking, as they place great emphasis on shoe covers and not leaving the OR in scrubs, however, 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. Circulators and Anesthesia Technicians (who provide the anesthesia) often leave the rooms for extended periods of time.

Their fluoroscope (Donated by Project Health for Leon) has not been able to be repaired. We brought some battery powered Stryker 2000 and 4000 surgical drill-saw combos, however, they do not have a flash autoclave and so cannot sterilize the batteries (which still must be wiped with alcohol and covered with stockinette or a glove). They are still using Black and Decker drills, wiped down with alcohol for minor procedures.

They have a video tower with which they have done a few arthroscopies over the past year using the arthroscopes and instruments we brought four years ago.

The Schedule

We traveled all day Saturday arriving in the evening.

We held clinic from 8 to 2 on Sunday

We operated from 8 to 3-5 on Monday – Thursday.

Tuesday we held a basketball game in the afternoon.

Many of the group climbed the mountain to the cross above the city on Wednesday afternoon.

We left for Managua Friday at 2 and flew out on Saturday at 8AM.

The Patients

We saw about 80 patients in the clinic on Sunday with about 4 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 to treat.

We performed 32 operations which are listed in the table below.

Monday (Lunes)	
O.R. A	O.R. B

Rene Paredes 68 yo L TKA # 9	DJ	Lorenzo Centro Pena 11 y.o. M R femur fx Enders LD, RR
Ana Gomez R volar wrist, Median n. + multiple tendon lacerations with machete DB, DJ	16 yo F	Pedro Zelandon 25 y.o. M Infected non-union femur I+D & ORIF LD, RR
Jose Centro Real 28 yo M LD, RR	R 1st MCP Fusion	Michael Gonzalez 13 y.o. M R femur osteomyelitis I+D LD, RR
Elizabeth Zelendon 15 yo F L zone 2-3 flexor tendon lacerations with machete repaired 3 common digital nerves and 8 tendons DB, DJ		Daniel Chavarria 20 y.o. M L tibial plateau open wound I+D , Arthrodesis knee LD, RR
Tuesday (Martes)		
O.R. A		O.R. B
Leopoldo Gutierrez 68 yo M TKR, #7 or #9 DJ	L	Cairo Perez 2 yo L Syndactyly x3 DB, RR
Mariol Rivas L knee locking, scope DJ	52 yo F	Denzel Odlovico Gomez 5 yo F CP B Clubfeet Right Release, talonavicular and calcaneocuboid Joints RR, LD
Ventura Herrera L Chronic Dislocation (Dorsal), Long and Ring MCP DB	23 yo	Pablo Sulas Marcha 13 yo M R Equinus Contracture, TAC/MUA/?/Lizarov DB, DJ
Elvin Zelendon F Femur Osteo I+D LD, RR	13 yo L Distal	Junior Ernesto Palacios 4yo M R SC humerus fx ORIF LD, RR

Wednesday (Miercoles)	
O.R. A	O.R. B
Ada Julissa Amaya Estrada 7 yo F L multiple flexor tendon Z lengthenings DB, LD	Guilermína Salazar 60 yo R TKA #5 DJ
Roberto Nicolas Larquin Palacios 63 yo M R rotator cuff repair DB	Mercedes del Castillo Marez 72 yo F L knee scope, meniscus DJ
Luis Cordosa Lopez 22 yo M L Radial Nerve X-Fers DB, LD	Ariadna Sanchez 38yo F (anesthesiologist at Hospital Victoria Motta) Radial styloidectomy and excision of multiple ectopic calcifications. DB, LD
Victor Velasquez 18 yo M L tarsal/coalition, triple arthrodesis, RR, LD	Jessemia Castras Pinola L should capsulorrhaphy for recurrent dislocation DJ, RR

Thursday (Jueves)	
O.R. A	O.R. B
Esperanza Lopez 68 yo F R TKA #5 DJ	Belkis Aguilera 7 yo F R hamstring lengthening RR, DB
Jose Reynoldo Herrera 38 yo Arthrodesis Hip LD, DJ, RR	Anyula Milena Machado Rodriguez 6 yo F L monteggia fx dislocation DB,
Herminia Costro Zamala 64 yo F L infected TKR, out >fusion>exfix LD, RR	Alexander Herrera 13 yo M L D-Rad Fx, CR cast LD, DB
Erick Castro 24 yo M R knee scope, synovitis DJ	Maria Emilia Altamirano 45 yo F R severe colles malunion, Darrach + Radius osteotomy DB

We encountered one known complication on this trip.

Herminia Castro Zamala

Three years status post L TKR in August 2006, became infected in 2008 and was status post several debridements by the local Orthopedists
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We performed a removal of components and arthrodesis with external fixator.

The Equipment

We took approximately 1200 pounds of tools, supplies, medications, equipment and implants with us, most of which we left in Jinotega.

We expended a lot of effort in organizing the supplies that are there.

Results from the previous year's surgery

We saw one patient from the previous year's surgery. The doctors assured us that the others were all doing well (although this is difficult to believe).

Name unknown	9F	Bilateral hamstring lengthening for CP	This girl had had a markedly crouched gait and now walked without supports and her mother felt she was much improved.
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First Jinotega Orthopedic Conference of the North

The Orthopedists in Nicaragua put on a conference on Friday during our stay and invited Orthopedic surgeons from all over Nicaragua. Don Bynum spoke on tendon transfers and Laury Dahners spoke on Adult Osteomyelitis, Felix Balladeres spoke on pediatric femur fractures and Felipe Paredes spoke on the results of the 41 TKRs which have been performed in Jinotega since we began coming there. It was attended by about 20 people and was very pleasant.

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 YEAR

Equipment to take

- Richards Ambi sliding hip screw insertion instruments (they have a lot of implants but the insertion instruments are lost)
- Screws are desperately short especially
 - 4.5mm cortical screws!!!!

- 3.5mm cortical screws!
- 6.5 mm fully threaded screws! (There is an excess of 6.5 partially threaded cancellous screws)
- pliers, wire cutters, out of chrome cobalt so they will tolerate autoclaving
- Labelling equipment to help organize the back room, especially big labels such as 3x5”cards to label areas
- Clear plastic organizer (rectangular) tubs to sit on shelves and hold plates and other items and flat boxes with many compartments to sort screws into (should have covers that lock closed to prevent spillage).
- videotapes or books (in Spanish if possible) that demonstrate
 1. sterile technique, how to setup the back table and drape the patient
 2. AO technique
 3. Campbell’s

Equipment to invent

- Autoclavable impervious drapes for back table and “U” drapes for patient limbs
 - Tarps?
 - Plastic sheeting?