

## **Orthopedic Mission to Jinotega, Nicaragua January 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**

Elizabeth Blackburn (Orthopedic OR Nurse)  
Laurence Dahners (Orthopedic Surgeon – Trauma)  
Shawn Gilbert (Orthopedic Surgeon – Pediatric)  
Beth Laber (Nurse Anesthetist)  
Jan Leo (Orthopedic Surgeon - Hand)  
David McDaniel (Surgical Technologist)  
Gerald McNamara (Orthopedic Surgeon – General)  
Vicki Moore (Anesthesiologist)  
Pam Presley (Surgical Technologist)  
Felicia Sumpter (Nurse)  
Corey Thompson (Orthopedic Resident)  
Tim Pickard (Architect – construction)  
Pamela Zurich (Orthopedic OR nurse)

#### **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, the first half on a portion of the Pan American Highway that is in very good condition but the second half on a twisting mountain road. This road was mostly repaired by this trip and only a few portions of it were potholed. Like other tropical cities at higher altitudes Jinotega has a very pleasant climate year round. The weather was pleasant during this trip and it actually rains very much. Jinotega is placed in a small valley in the coffee growing mountains and has a population of about 100,000 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 now! We went out to several other nice restaurants during our stay and they also provided good food. The tap water is said to be chlorinated and no one got seriously sick (however most of us were taking daily Doxycyline 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 was mostly used for C-sections during our stay. 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, but allow people in the OR with noses (and often mouths) out of their (cloth) masks. 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.

The fluoroscope Donated by Project Health for Leon was still broken and so we were back to guessing about alignment and pin/screw placement for the procedures we performed this year in the OR.

## **The Schedule**

We traveled all day Saturday arriving in the evening.  
We held clinic from 8 to 3 on Sunday  
We operated from 7:30 to 3-5 on Monday – Thursday.  
We left for Managua Friday afternoon and flew out on Saturday at noon.

## **The Patients**

We saw about 80-100 patients in the clinic on Sunday with about 10 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. Though we were prepared to perform some spine deformity surgery this trip, one patient was in an accident on her way to our clinic and broke her acetabulum and the other one was a “no show” for surgery (probably fear). This trip we saw 5 patients that we believed we could help significantly with surgery but did not have time on the schedule to do. This does not count many patients with knee arthritis that we could have done knee replacements on if we had sufficient prostheses, nor patients with hip arthritis for which we didn’t have any prostheses.

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

Room	Monday	Tuesday	Wednesday	Thursday	Fri
<b>A1</b>	<b>Miriam Nieto GM</b>	<b>Zacarias Guevara GM</b>	<b>Maria Elprelia Valderia GM</b>	<b>Dionisio Rizo GM</b>	
<b>Info</b>	61F L TKR	65 M R TKR	64 F R TKR	57 M R Knee scope Med meniscus tear	
<b>A2</b>	<b>Jaime Castillo Fernandez JL</b>	<b>Maria Pastora Valle GM</b>	<b>Jose Alaniz Pineda LD</b>	<b>Miguel Angel Altimirano SG</b>	
<b>Info</b>	34 M L radius fx ORIF	60 Failed L TKR (orig done Managua) Revise, recement orig tib component	31M recurrent giant cell tumor L distal femur, recurette, recement	35 Diplegic CP B hamstring release for crouched gait	
<b>A3</b>	<b>Orlando Cordero Centeno LD</b>	<b>Juana M Castro JL</b>	<b>Julio Cesar Palacios GM</b>	<b>Norlan Rivera Garcia LD</b>	
<b>Info</b>	21 M L tibia fx IM nail	50F L radius fx ORIF	36 M R knee scope medial meniscus tear	27M Chronic osteomyelitis tibia Debride	
<b>A4</b>		<b>Dionisia Torres Gutierrez JL</b>	<b>Maria Audely Nunez GM</b>		
<b>Info</b>		47F Calcific tendonitis shoulder exc	63F Remove plate distal L Femur		
<b>A5</b>		<b>Miguel Garcia Mayrena LD</b>			
<b>Info</b>		21M ORIF fx Radius and ulna			
<b>B1</b>	<b>Juan Diaz Gonzalez SG</b>	<b>Ruth Noblemi Rugama SG</b>	<b>Alex Josue Guatemala SG</b>	<b>Bernanda Cruz Lunzar JL</b>	
<b>Info</b>	3 M R Achilles lengthening ant tib transfer clubfoot	7F Spina Bifida, Varus osteotomy L hip poor coverage	2M Residual Clubfoot B TAL and ant tib transfer	54F L wrist Darrach	
<b>B2</b>	<b>Martha Sobal Varro LD</b>	<b>Yorolania Marencio Palacios SG</b>	<b>Ricardo Herrera Maerana SG</b>	<b>Juan Cabrera Pereiria JL</b>	
<b>Info</b>	29 F IT hip fx Sliding hip screw	9F Valgus knees, staple medial fem physes	6M R lat condyle nonunion revision ORIF	69F Fusion L thumb IP joint	
<b>B3</b>	<b>Jefferson Lopez Ruiz SG</b>	<b>Jose Luis Lopez SG/LD</b>	<b>Lesbia Jarquin Hernandez LD</b>	<b>Rafaela Chovarria JL</b>	
<b>info</b>	10 M B cavus foot release	14M B Clubfeet severe, triple arthrodesis TAL	16F B Valgus knees, R distal femoral osteotomy	45F L Carpal Tunnel syndrome/release	
<b>B4</b>	<b>Rosibel Rivera Zamora SG</b>	<b>Maura Pineda GM</b>		<b>Aaron Gutierrez Espinosa JL</b>	
<b>Info</b>	18 F healed open tib nonunion remove Ilizarov	23F R knee scope synovitis		46 M Fascial hernia R hand, release	
<b>B5</b>		<b>Brayan Gutierrez Jarquin SG</b>		<b>Wilfredo Jarquin JL</b>	
<b>Info</b>		8M Revision ORIF L		46M recurrent	

**B6  
Info**

SC humerus with failure of percutaneous fixation

shoulder disloc post Bankhart, revision capsule

We had no known complications on this trip.

**The Equipment**

We took approximately 900 pounds of tools, supplies, medications, equipment and implants with us, most of which we left.

**Results from the previous year's surgery**

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

<b>Rosibel Rivera Zamora SG</b>	17	Old open fx tibia with nonunion	Treated with Ilizarov, now healed so we removed the frame
<b>Uvania</b>	16	Status post treatment of R coxa vara, doing well but now with scoliosis	Rode the bus to our clinic, bus wrecked, had an acetabular fracture on L hip, well reduced in traction
<b>Paula Zeladon Herrera</b>	46	Status post treatment for nonunion after varus osteotomy for Valgus arthritis	Nonunion healed, pain much better

**Overall**

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

**NEXT YEAR**

**Equipment to take**

- 3.2 and 2.5mm drill bits
- Steinman pins and K-wires
- pliers, wire cutters, out of chrome cobalt so they will tolerate autoclaving

- pin/bolt cutters
- 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
  
- Small Frag Screws – all sizes, but especially shorter ones
- Large Frag Screws
- Instruments for Angled Blade Plates and more plates various sizes
- Fiberglass Casting Material
- Sterile Webril
- Sterile Esmarchs
- Small Mallet
- Steri Strips and Benzoin
- Small Ronguers
- Scissors-Mayo and Metzenbaum
- Ace Bandages
- Suture – Ethibond and Monocryl
- Mini Frag Screw Driver for 1.5 and 2.5 Screws
- Cautery Pencils
- Suction Tubing
- Sterile Yankauer and Neuro Suction tips
- Sterile Gloves
- Fiber Wire
- Knee Immobilizers – all sizes
- Alumi Foam finger splints
- Arm Slings
- 4 x 4 and 4 x 8 Gauze for Dressings
- Laps
- Cloth Gowns
- Cloth Drapes
- Small Osteotomes - Hand
- Large Osteotomes – Narrow Widths
- Currettes – Small Sizes
- Rasps
- Permanent Markers
- Bins to Organize Supplies
- Label Maker

### **Equipment to invent**

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

- Plastic sheeting?