

Orthopedic Mission to Jinotega, Nicaragua January 2007

A Report

**Carried out under the auspices of Project Health for León
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Team Members

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Beth Bohrer (CRNA)
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Jane Gibbs (Photographer)
Pamela Zurick (Orthopedic OR nurse)

Contacts in Jinotega

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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 takes about three hours, the first half on a portion of the Pan American Highway that is in very good condition but the second half on a badly potholed, twisting mountain road. Though it had improved much over the first three years, it had fallen into disrepair again the past two years. A short cut is now used that although very rough and almost all unpaved still cuts some time off the trip. Like other tropical cities at higher altitudes Jinotega has a very pleasant climate and ranges from 65-75 degrees during our stays there. It 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 has a fine restaurant. 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 and a few episodes of brief vomiting, 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. They installed new lights in the two main rooms since last year though they still aren't working in one room. We suspended 5 fluorescent shop reflector lights from the “OR light” to provide fairly good illumination. The third OR 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 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.

They obtained a fluoroscope this summer which is still working and was a great help. We brought some battery powered drill-saw combos in 2004 and they are still using them. This year we brought 7 Stryker 2000 handpieces and a number of new batteries which has markedly diminished the need to use hardware store type power. 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 have a video tower with which they have done a few arthroscopies over the past year using the arthroscopes and instruments we brought last two years ago.

The hospital has four orthopedists (listed above) who are all quite young (2-6 yrs out of residency) and are very enthusiastic, scrubbing in with us on the cases. Dr. Balladeres is currently in Mexico for a 1 year long fellowship in Pediatric Orthopedics.

The Schedule

We traveled all day Saturday arriving in the evening.

We held clinic from 8 to 3 on Sunday

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

Friday we left for Managua Friday, visited Masay to shop and flew out on Saturday at 1:40 PM.

The Patients

We saw 82 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.

We performed or assisted with 27 operations which are listed in the table below.

Andeley Nunez	60	Nonunion femur	ORIF and bone graft
Eynaer Rodriguez	17	L peripatellar plica	L Arthroscopic plica excision
?	?	R bunion	R exostectomy
Francisca Rivera	61	R median nerve laceration	R median nerve exploration – irreparable
Marcela Picado	25	R CTS	R CTR
Miguel Maza	67	R long finger contracture	R long finger tenolysis z-plasty FTSG
Karen Estrada	23	R shoulder lipoma, R wrist ganglion	Excise
Santos Perez	40	R Subtroch fx	ORIF
Erling Martinez	40	R tibial nonunion	R fibular osteotomy, tibial ORIF and bone graft, remove e stimulator
Felipe Gonzales	17	R MMT	R knee scope exc MMT
Luis Castro	57	L shoulder impingement	L acromioplasty
Carlos Rios	21	R recurrent shldr disloc	R Bankhart repair
Juan Aguilera	22	Machete wound L hand	I&D repair tendons
Roberto Altamirano	14	L humeral varus malunion	Valgus osteotomy R supracondylar humerus
Anna Albas	52	L varus gonarthrosis	L HTO
Jose Cruz	39	L knee pain and mechanical sx	L knee scope with debridement chondromalacia
Nidia Castelon	64	R knee DJD	R TKR
Milagros Gonzales	8	L equinus CP	L TAL
Milagros Revera	6	Spina bifida, B equinus	B TAL
SEleny Mariela	8	R equinus CP	R TAL
Jaziv CALina	9	R equinus CP	R TAL
Maria Zeledon	56	L wrist ganglion	Excise
Jarling Ortiz	16	R distal radius malunion	Ostetotomy
Francisco Gonzales	73	L knee varus DJD	L HTO
Linonidas Rivera	48	R Colles	CRPP
Norvin Castro	6	R long finger machete wound	I&D, pin, repair tendon
Dayana Rizo	6	CP	B TAL and hamstring release
Yeris Casco	6	R uncorrected clubfoot	R triple arthrodesis
Arturo Gonzales	37	SP L forearm fasciotomies	I&D forearm wounds
?	13	R thigh abcess	I&D and

We had one complication, a malalignment of the osteotomy in Ernesto Fiterio requiring revision of fixation.

The Equipment

We took approximately 1600 pounds of tools, supplies, medications, equipment and implants with us, most of which we left. Being shipped are another set of OR lights for the 3rd OR and a C-arm fluoroscope which will immensely improve our ability to treat many conditions.

Results from the previous year’s surgery

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

Urbania Reyez Rivera	10	R coxa vara	Valgus osteotomy
?	20?	Machete wounds to forearm, infected	Debridements and ORIF. Had painless nonunions of both bone and still no extensor function

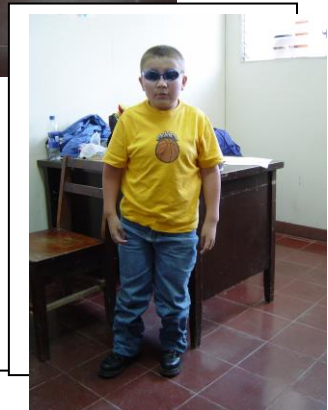
Victor was ecstatic over his forward facing feet



2004



2005



2006

and his brother Eniel came in to have his second one done.



Construction and Repairs

Tim Pickard installed another very nice set of shelves in their main storage room.

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

- In Focus powerpoint projector cable, Data Show LP 500/530 Analog computer cable 6 foot.
- Extension cords for lights.
- Bring a grinder and teach them to use it to sharpen drills, scissors and osteotomes.
- Gowns and towels. Perhaps we can get Sterile Recoveries to donate some old gowns/towels.
- 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

Equipment to invent

- Autoclavable impervious drapes for back table and "U" drapes for patient limbs
 - Tarps?
 - Plastic sheeting?
- Method for sterilizing inside of unsterile drill chucks
 - Swab out with Qtip and alcohol?