

Orthopedic Mission to Jinotega, Nicaragua

A Report

Carried out under the auspices of Project Health for León

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Contacts in Jinotega

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The Location

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 took about three hours, the first half on a portion of the Pan American Highway which is in very good condition but the second half on a badly potholed, twisting mountain road. Like other tropical cities at higher altitudes Jinotega has a very pleasant climate and ranged from 65-75 degrees during our stay there. It is placed in a small valley in the coffee growing mountains and has a population of about 25,000 people. We stayed three blocks away in the Hotel Café, a very nice facility which was very clean and had a fine restaurant (though the waiter had trouble recalling our orders – one night pretty much everyone got chicken parmesan, no matter what they'd ordered). We went out to several other nice restaurants during our stay and they also provided good food (except for the burned fish at the Chinese restaurant – but what do you expect ordering non Chinese food at a Chinese restaurant?) The tap water is apparently not treated but other than some mild diarrhea and colds no one got sick (however most 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 we didn’t visit them.

The operating theater has three rooms of which they kindly allowed us the use of the two largest. The third was mostly used for C-sections during our stay. Sterile practice was 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. Circulators and Anesthesia Technicians (who provide the anesthesia under the direction of an anesthesiologist, Dr. Guido) often leave the rooms for extended periods of time.

They do not have a fluoroscope but are able to shoot portable x-rays in the OR. There is no power available though they did use the two Black and Decker 12v Firestorm drills we brought (and left), wiping them down with alcohol (which I liked better than the Chlorhexidine soap used in Leon). We brought some nitrogen powered drill-saw combos but they didn’t have a source of nitrogen (they said they’d get some tanks so we left the equipment there). They have a video tower for laparoscopy which is not used but is in good working order (we checked). If we bring an arthroscope and some instruments next year we should be able to teach arthroscopy.

The hospital has three orthopedists (listed above) who are all quite young (2-3 yrs out of residency) and were very enthusiastic, scrubbing in with us on all the cases and going out with us every night. The director of orthopedics at the hospital is older but took vacation during our visit so we did not see him other than briefly on one occasion.

The Schedule

We traveled all day Saturday January 18 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 made rounds, went shopping in Jinotega then left for Managua in the afternoon. Saturday morning we shopped in Managua before leaving at 2pm.

The Patients

We saw 81 patients in the clinic on Sunday and about 10-15 more “consults” during the week. Many of them had DJD or meniscal tears that we did not feel we could treat. Several patients offered to buy prostheses for joint replacement surgery but could not after they discovered the cost. If we were to perform TJR in the future I believe we would need to bring down complete packs of disposables and 97% efficiency masks as well as the prostheses and cement.

We operated on 22 patients and assisted with three other urgent cases that were performed during our stay (closed reductions of a Colles and a DBFF and I&D of a thigh abscess). The patients are listed in the table below.

Ramon Ubeda	20?	Recurrent L shldr disloc	Bankart repair
Ernesto Rodriguez	16	L Mal/nonunion lat epicondyle elbow	ORIF epicondyle with varus dome osteotomy
Nubia Jarquin	26	R Hemiplegia w/ dynamic foot varus	Split Posterior Tendon Transfer
Rosa Altamirano	74	L Subtroch femur fx	ORIF with 95deg long plate
Miriam Torres	27	R prox ulna nonunion	ORIF with ICBG
Manuel Arauz	21	L ACL lax and Med meniscus tear	Open medial meniscectomy
Jose Zelaya	75	L media gonarthrosis	L HTO with plate
Kerwin Molina	7	L congen radioulnar synostosis (pronated)	L supination rotational ostetotomy
Christian Chavarria	6	CP with crouched gait	B Adductor rel B Hamstring lengthening
Wilmer Vargas Navarrele	7?	CP in WC with subluxation of R hip	R PFO and B adductor release
Juan Ramon Herrera	58	Chronic olecranon bursitis	R olecranon bursectomy
Francisco Chavarilla	36	Open fx/compartment synd R leg with severe equines	R dorsiflexion Ex fix with release of FHL
Blanca Castro	26	L untreated severe clubfoot (walking on dorsum) and post traumatic ankle DJD	L pantalar arthrodesis
Parla Valenzuela	20?	L small finger contracture	Release
Deyling Gutierrez	14	L femur varus/short malunion	L femur valgus/lengthening osteotomy
Maritza Lanzas	19	L Ganglion wrist	L ganglionectomy
Eddy Gutierrez	11	L 2 month old posterior elbow disloc AND supracondylar humeral fx	Open reduction of elbow dislocation
Luisa Lanza Blandon	30?	GCT tendon sheath R small finger	Excision
Glen Alejandro Lopez	30?	R multidirect shoulder instab & osteochondroma R tibia	R capsular shift and excise osteochondroma
Raul Castellon Paneda	20?	L shoulder recurrent disloc	R Bankart
Marta Montenegro	30?	R radioulnar length discrep	R Darrach
Jaime Jarquin Soriano	20?	R thumb webspace contracture	R thumb webspace Z-plasty and FPL lengthening

We had one known complication, a radial nerve palsy in the child with the rotational osteotomy of the radioulnar synostosis. As all the dissection was subperiosteal it is thought to be a stretch injury that will likely recover.

The Equipment

We took approximately 1500 pounds of equipment with us most of which we left.

1. Campbell's Operative Orthopaedics 8th ed
2. Greens text book of Hand Surgery
3. Zimmer versions of
 - a. Sliding Hip Screw instruments with large #s of plates and Lag Screws
 - b. Large fragment instruments and screws and plates
 - c. Small fragment instruments and screws and plates
4. Maxillofacial/hand fragment instruments and screws and plates
5. Hoffman external fixator system with spare parts
6. Assorted EBI external fixators with some pins
7. Assorted IM nails with guide wires and Intracone flexible Reamers
8. 3M Maxidriver and a Minidriver - nitrogen power
9. 60 lbs of knifehandles, forceps, scissors, hemostats, Weitlaners, retractors etc.
10. Assorted odds and ends and disposables.

We all had a wonderful time with very gracious hosts, believe we did some good for the people of Nicaragua and want very much to go back next year (many of us are excited to have custom, made to fit, boots/shoes manufactured at the local shoe shop – we found out about it too late this year).