

Orthopedic Mission to Jinotega, Nicaragua September 3-10, 2011

A Report

Carried out under the auspices of

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Team Members

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Burgess, Scott Orthopedic Surgeon hand
Murphy, Daniel Orthopedic Surgeon general/sports
Thompson, Corey Orthopedic Surgeon foot/ankle
Miles, Jodie Orthopedic Surgeon resident
Kang, Mida Anesthesiologist
Davis, Shanna Anesthetist
Wagner, Patricia RN
Graham, Jennifer RN
Hoffman, Jules RN
McDaniel, David Surgical technologist
Graham, Morgan translator
Alves, Kristin translator, medical student

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 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 September falls in the rainy season and it rained almost every day but the temperature was generally warm but pleasant. Temperatures ranged from 70-85 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 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 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). 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 have done a few arthroscopies over the past year using the arthroscopes and instruments we brought.

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 created tremendous difficulties in finding equipment to do cases again this trip. They promised to try to fix this situation last trip but have not done so.

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 2-4 on Monday – Thursday.

We left for Managua Friday at 11 pm and flew out on Saturday at 8AM.

The Patients

We saw about 120 patients in the clinic on Sunday with about 8 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 34 operations which are listed in the table below.

Jinotega Surgery Schedule

	Room A	BlockA	Room B
Monday	Jose Abdalia 69 M R TKR Murphy		Norwin Zalaya 25M Pubic Symphysis radius Ex fix Dahners/Burgess
Monday	Rafail Antonio, Mendez 31M R ACL Murphy		Vilma Centeo 54F R bimall Dahners
Monday	SantosLopez Herrera 18M L Index and long ray amps debride STSG Burgess		Jose Prado 4M L SC humerus fx Da
Monday	Carlos Andres Vargas 27M R Hand I&D explore palm, tendons Burgess		Eliar Valla 22M R pathologic base n hemiarthoplasty Dahners/Murphy
Monday	Karla Cvaolva 26F L ORIF radius fx Burgess		

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Tuesday	Olivia Pinida 61F L TKR Murphy		Jose Lezo 30M L SC Femur Osteoto Flexion Dahners
Tuesday	Hugo Picado 32M R Knee Scope Murphy		Jario Arent Castillo 30M Revision L ICBG vs allograft Dahners
Tuesday	Juan Ramon Jarquin 74M R Rot Cuff Repair Murphy		Margarito Martinez 68M R iliac nonu graft Dahners
Tuesday	Javeling Delvangeles Gonzales 27F L patellar realignment Murphy		Rosario Navas 72F L Knee scope M

Wednesday	Rubon Villagrea Suago 21M L L knee scope MM Murphy		Carmen Rogriquez 42F R scaphoid Burgess
Wednesday	Nolan Gurdian 25M R open shoulder dislocation Murphy/Dahners		Santos Cerna 37M R ext tenolysis a releases IF, MF, RF SF Burgess
Wednesday	Jose Castillo 44M R tibial Nail Removal Grosse kempf Dahners		Pedro Altamirano 65M L RF and SF Palmar Fasciectomy Burgess
Wednesday	Eliar Valla 22M R pathologic base neck femur fx hemiarthoplasty, revision Dahners/Murphy		Teresa Arauz Picado 32F L RF exte Tenolysis with Volar PIP release Bu
Wednesday			Otoniel Gonzales 2M Ant tib txfer re clubfoot

Thursday	Pablo Antonio Gonzales Rodriguez 23M L ACL/MM Murphy		Carlos Rizo 27M R IF PIP arthodes Burgess
Thursday	Bertilda Martinez 41F R Hallux Valgus 41F Thompson		Adaly Zamora 23F L RF PIP&DIP F Burgess
Thursday	Tatiana Jorquin Arteta 32F L 4th dorsal capsule release, ext tenotomy pin toe Thompson		Lucy Senteno 16F L median nerve reconstruction

Thursday

Adolfo Berrios 32M Remove L femur nail, patella pin,
tibial nail (infected) Dahners

? 9M Open fx middle phalanx L inde

We encountered one complication in Eliar Valla who had an unexpected pathologic fracture that we converted from ORIF to hemiarthroplasty and it rotated in the femur and dislocated. We had to take him back and cement the prosthesis and rereduce the hip.

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 three 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 two years ago, now infected. Offered excision and arthrodesis, chose gentamicin injection q 2-3 wks for a while instead.

A patient status post a knee arthrodesis 1 yr ago, doing well. Other knee varus OA but too much deformity for a TKR, only injected with steroids.

A 14yo 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 is nearly autofused. Offered a intertroch osteotomy to position limb better, put it off until January.

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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The arthroscopy camera/box died so getting such a setup would be HUGE. A small flatscreen monitor would be nice.

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)

- 3.2 and 2.5mm drill bits (1/8" and 3/32" chrome or cobalt or titanium drills from the hardware store work fine)
- 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

- **Scope camera and box (can't do any more scopes without)**
- Linvatec 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
- 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

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- 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?