



THE UNIVERSITY OF TOLEDO
MEDICAL CENTER

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THE UNIVERSITY OF TOLEDO MEDICAL CENTER

ORTHOPAEDIC MONTHLY

VOLUME 4, ISSUE 3 MARCH 2010

UTMC's Orthopaedic Surgeon Dr. Levine writes about his experience in Haiti

On January 12, 2010, Haiti experienced a 7.0 magnitude earthquake that devastated the region; the damage to the country proved to be catastrophic. The images from our television networks were hard to believe and it quickly became evident that the injuries were mostly orthopaedic in nature. As an orthopaedist, I wondered how I could help.



Dr. Levine and young Haitian boy

Shortly after the earthquake, Dr. Kris Brickman, director of the University of Toledo emergency department, said he had an available opportunity to provide care for victims in Haiti. He asked if I was interested in going and before I knew it, I was buying an airline ticket.

I traveled with the Glen Echo Presbyterian Church (Columbus, Ohio) who has been delivering care to the people of Forte Liberte, Haiti, for the past 19 years. There was a small clinic in Forte Liberte

and a functional operating room in a nearby city called Ounaminthe. The team consisted of two orthopaedic surgeons, an emergency room physician, several primary care doctors, nurses and assistants. In total there were 33 of us.

We left on February 12 and returned on February 20. We landed in Santiago, Dominican Republic and drove across the border to Haiti. After about a four-hour drive, we arrived at our destination in Forte Liberte. It is difficult to describe the conditions, but the word is primitive. It was really an eye opener to see a culture living in such a state during this period of time. However, the one thing that remained a constant was the people's good nature. The people of Haiti were very courteous and truly thankful for our help. It was heartwarming to see their appreciation of our presence.

In the six days that we were in Haiti, we saw 1500 people in our clinic, and performed 20 surgical procedures. Many of the people we saw were in Port-au-Prince during the earthquake, and their stories were truly amazing. Almost everyone we saw had a family member or friend who was killed in the earthquake. It was hard to listen to some of the stories, but you had to listen to learn what these people went through. The experience has forever changed me.

As I returned to my family and my job at The University of Toledo Medical Center, I had a deeper appreciation for what I have. The food we eat, the warm showers we take, the trash that gets collected, our infrastructure, and yes, even our health care, is something that I will never take for granted again. I know the Haitian people were thankful for what I did for them, but I can't thank them enough for what they did for me. ■



(Far left) Dr. Levine performs surgery at Ounaminthe

(Left) The market at Forte Liberte

(Right) Dr. Levine with survivors of the Haitian earthquake



Morton's Neuroma

Morton's Neuroma refers to a thickening of the tissue around the digital nerve leading to the toes. It occurs as the nerve passes under the ligament connecting the toes bones in the forefoot. Also known as plantar neuroma or intermetatarsal neuroma, Morton's Neuroma usually presents between the third and fourth toes in response to irritation, trauma or excessive pressure.

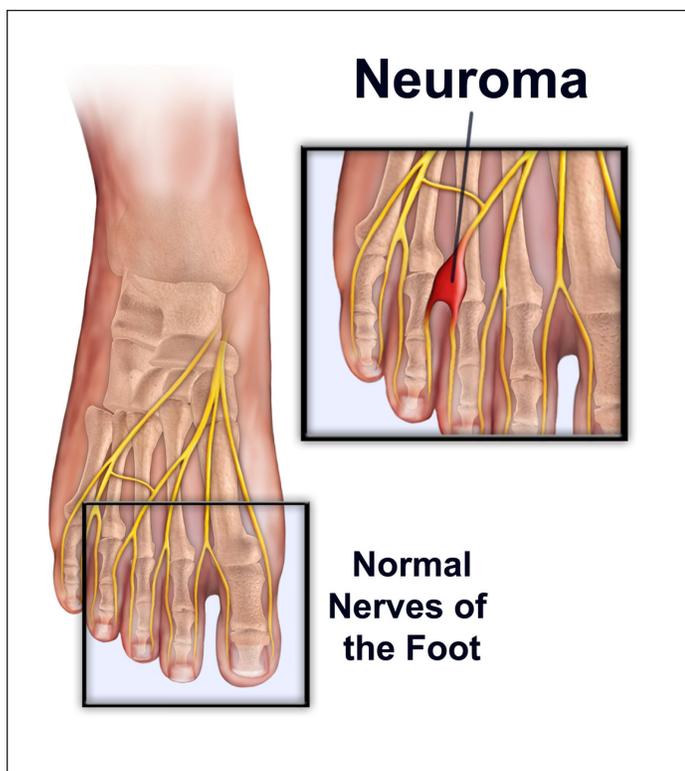
Patients with Morton's Neuroma will likely complain of the following symptoms:

- Pain in the ball of the foot that may radiate to the toes;
- Tingling or numbness in the toes;
- Typically there are no outward signs for Morton's Neuroma, such as a lump.

As stated above, Morton's Neuroma is typically the result of irritation, trauma or excessive pressure of the foot's digital nerve. Common causes leading to Morton's Neuroma include:

- Wearing improperly fitting shoes;
- Activities that subject the feet to repetitive trauma;
- Injury to the feet;
- Abnormal movement caused by hammertoes, bunions or flatfeet.

To diagnose Morton's Neuroma, physicians will utilize a combination of history, physical examination and imaging. During physical examination, the physician will look to identify a palpable, tender mass or clicking between the bones. Here, pressure will be applied in the spaces between the toes to elicit reproducible pain. Physicians will also check range-of-motion to rule out arthritis and use x-rays to rule out stress fractures and arthritis.



Morton's Neuroma can usually be treated with a combination of rest, a change in footwear and anti-inflammatory medications. Injections may also be utilized to decrease pain and inflammation. If conservative treatment fails, surgical intervention may be needed to release the tissue around the nerve or resect a small portion of the nerve. However, surgical intervention for Morton's Neuroma is a last resort. According to the Academy of Orthopaedic Surgeons, studies have shown that a combination of roomier, more comfortable shoes, non-steroidal anti-inflammatory medication, custom foot orthotics, and injections provide relief in more than 80 percent of patients with Morton's Neuroma. ■

Prolotherapy

In the Merriam-Webster dictionary, the word proliferation means to grow by rapid production. Proliferation therapy, also known as prolotherapy, therefore, refers to the use of therapeutic injections intended to stimulate the growth and production of connective tissue.

Specifically, prolotherapy involves the treatment of both tendons and ligaments. Tendons are responsible for movement by attaching muscles to bones, while ligaments are responsible for providing joint stability by connecting bones. Because ligaments and tendons typically have inadequate blood supply, complete healing following an injury can be a problem. Ligaments or tendons that do not heal properly can become a source of weakness or chronic pain for patients.

The goal of prolotherapy is to stimulate the body's natural ability to heal itself. To do this, physicians inject injured or damaged ligaments or tendons with an irritant solution (i.e. lidocaine, dextrose, phenol, or glycerine) to cause inflammation. Once inflammation has been achieved, new collagen begins to form. As the collagen matures, it shrinks and tightens the ligament or tendon it was injected into. The result is a strengthened tendon or ligament.

Physicians may suggest prolotherapy if patients present the following symptoms:

- Recurrent swelling involving the joint or muscular region;
- Tenderness along the bone at the tendon or ligament attachments;
- Numbness or tingling;
- Popping, grinding or clicking sensations with movement.

Prolotherapy is an attractive option for patients as it may provide an alternative to surgery, anti-inflammatory medications or the use of pain medications. It has been used to treat the following conditions:

- Arthritis;
- Joint Pain;
- Degenerative disc disease;
- Sports injuries;
- Carpal tunnel syndrome;
- Tendonitis.

More research is needed in assessing the adequacy of prolotherapy. Currently, a criticism of prolotherapy is that most insurance do not pay for it. However, physicians remain optimistic with prolotherapy results thus far. ■

Snapping Scapula

Snapping scapula syndrome, also known as scapulothoracic syndrome, refers to snapping, grating, popping or grinding as the shoulder blade moves along the chest wall.

To understand snapping scapula syndrome, it is important to understand the shoulder's anatomy. The shoulder is comprised of three bones: the humerus (upper arm); the clavicle (collar bone); and the scapula (shoulder blade). Two muscles, the subscapularis and serratus anterior, originate from the scapula and extend to the chest wall. The subscapularis attaches to the front of the scapula and rests against the chest wall, while the serratus anterior muscle attaches at the edge of the scapula, wraps around the chest wall, and attaches to the ribs on the front of the chest. The shoulder also has bursa, which are fluid-filled sacs that cushion the muscles during motion and minimize friction.

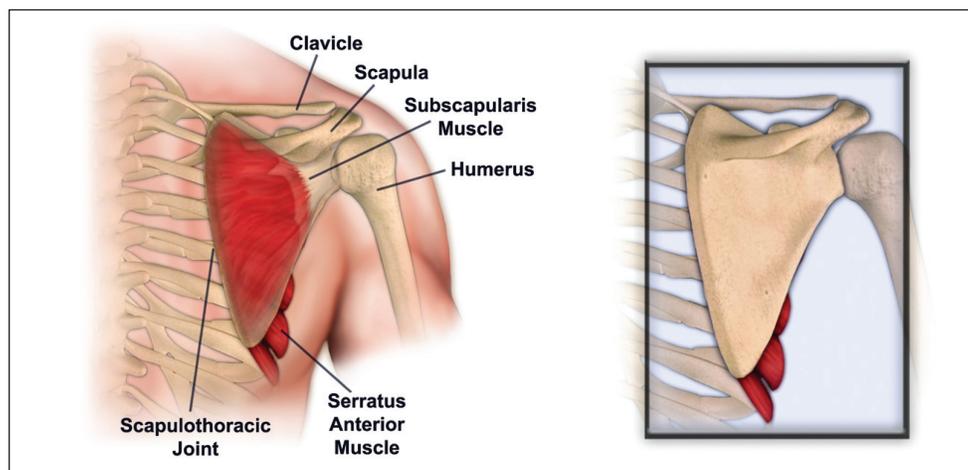
Snapping scapula syndrome is typically the result of inflammation of the scapula's tissue due to repetitive motion. Other causes for snapping scapula syndrome include:

- Scapula muscle atrophy caused by weakness or inactivity;
- Changes in bone alignment (fracture);
- Abnormal curves or bumps in the bone's composition (exostosis);
- Abnormal joint movement.

Patients with snapping scapula syndrome will complain of grating, grinding or a popping sound as the scapula moves along the chest wall.

To diagnose snapping scapula syndrome, physicians will utilize a combination of history and physical examination and imaging. During examination, physicians will check the scapula's alignment and will also look for tenderness and inflammation of the joint. X-rays and CT scans may be taken to see the space between the joint and chest wall. Physicians may also order an MRI to check for inflammation of the bursa.

To manage snapping scapula syndrome, physicians will start with conservative treatment. This includes: rest and ice; anti-inflammatory medications; physical therapy; or injections. If surgical treatment fails, surgical intervention may be needed. Here, an orthopaedic surgeon may perform a bursectomy (removal of the inflamed bursa) or may remove a small piece of the scapula. ■



(Far Left) The illustration shows the anatomy of the sholder.

(Left) An isolated view of the scapula

The Dilemma of Treating Injured Cartilage

Cartilage injuries can result from trauma and inflammation or can be idiopathic. The goal of treating injured cartilage is to reduce pain and improve the function of the affected area.

The knee is the most common joint in the body with cartilage injury issues. There are several different treatment modalities to combat injured cartilage. Anti-inflammatory medications are often used, but can potentially cause cardiovascular and gastrointestinal toxicity. Steroid injections are also used but only work in the short-term and may actually be harmful to cartilage. Hyaluronic acid and glucosamine are used but may also not be very effective.

Other methods such as gene therapy, platelet-rich plasma, growth factors, stem cells, and drilling and debridement of cartilage may help with injured cartilage. However, the effectiveness and measurement of these methods is not defined.

When arthritis is severe, the choice is very simple as the patient will need a knee replacement. When arthritis is minimal, most of the aforementioned methods will probably be effective. However, when the damage is more than minimal, the current methods used for treatment are not very effective. Cartilage cells are supposed to live forever. When they deteriorate or die, the body will not produce new hyaline crystalline cartilage that is smooth and glides easily. Instead, the body will replace this with inferior cartilage that breaks down and deteriorates.

Most of the advances in medicine in this field are geared toward making hyaline cartilage. The goal is to find factors that help in cartilage regulation and differentiation. This is usually achieved with growth factors, mesenchymal stem cells and possibly platelets. Randomized control studies are needed to prove the effectiveness of these methods.

For now, each doctor uses what they are comfortable with. Some of it works and some of it does not. Unfortunately, it is not easy to figure out which method is superior for each patient. ■



Orthopaedic Center Welcomes Incoming Orthopaedic Residents



Erik Peterson



Chris Sanford



Brent Steiner



Jarrod Smith

On March 18, the Department of Orthopaedic Surgery received the results of the resident match program. For the second time, the Department will welcome four first-year residents to the program. Following a site visit in 2007, the program was awarded a full five-year accreditation cycle and an increase

in resident complement. This year, three familiar faces from The University of Toledo join the program: Erik Peterson, Chris Sanford and Brent Steiner. Also joining the program will be Marshall University Medical School graduate Jarrod Smith. We want to congratulate and welcome these four gentlemen to our University! ■

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Editors:

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Neither Dr. Ebraheim nor Dave Kubacki have any relationships with industry to disclose.

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