**My volunteer trip to Nepal**

**Surgeons in Kathmandu making a difference one patient at a time**

*By Kevin Chung, MD, MS*

*The PSF President-Elect*

With a Bob Seger song still ringing in my ears, I stepped off the last of many planes after multiple stops in various time zones. There was rain and a cool breeze, and the complex scent of wood burning, exhaust fumes and spices told me that I had arrived at a destination where I had always wanted to serve as a volunteer. That place is Kathmandu. For the past decade I have traveled to all parts of the world as a medical educator to teach hand surgery—in particular, pediatric hand and burn surgery.

When people ask me why, with all the commitments I have, I choose to torture my aging body on these interminable trips to teach surgery by working with the most basic materials in remote areas that are devoid of the comforts of home. My answer is always the same: I think I can make a difference, no matter how small that difference is. And of course, my fascination with Nepal—the birthplace of Buddha more than 2,500 years ago—was just too much to resist. Under the cool breeze, I tried to feed my curiosity because a Maistos insurgency led the U.S. State Department to curb travel to Nepal. The Maoists have now become a part of the party in power. The country has returned to normalcy after disposing of its monarchy. Despite this, Nepal remains one of the poorest countries in the world. Many of its people subsist on the equivalent of $2 (USD) per day, and most of the country, which is home to the formidable Mount Everest, contains non-arable land. After hearing about the incredible achievements of Nepalese plastic surgeon Shankar Rai, MD, who has the vision to treat his country's civil war victims, and even a patient who was considered to be the fiercest fighters in the British military. It is often said that if someone says he is not afraid to die, he is most likely lying or is a Gurkha. Several of Dr Rai's siblings work for the British military and are the only one in his family who was able to train as a physician. Dr Rai's training in Nepal, then ventured to Dhaka, Bangladesh, for his general surgery training, and to the United States for a sporadic few years of additional experience. After some initial struggles, his team has grown through the generosity of education grants funded by U.S. organizations into a residency program with many trainees who have spent time at various high-profile plastic surgery programs around the world. Dr Rai has devoted to this cause. Rather than expending enormous resources to send a full complement team to the developing world, this is a much more sustainable financial model that employs local surgeons who are well-trained to provide continuous care to the poor full-time.

*To do good*

I was met graciously at the airport by Dr. Rai and his lovely wife. A structured four days of educational activities started with the screening of patients specifically identified for my trip. Indeed, these patients represent the most complex hand problems in any practice. The day began with a hypoplastic thumb, a bilateral cleft hand, and several patients with severe hand-burn contractures, and even a patient with burns over 30 percent of her body who developed heterotopic ossification of the elbow, resulting in a fixed contracture at 45 degrees.

After a spirited couple of hours discussing the basics of congenital hand surgery, I warmed up by removing the entire dorsum of the hand in a 7-year-old girl with hypertrophic scars and contracture of the dorsal hand. Her injured hand was noticeably smaller than the opposite untreated hand and primarily because the contracted scars limited its growth. Although the surgeons possessed a substantial amount of experience with the groin flap, they were eager to see my approach in designing a groin flap and efficiently harvesting it by following its anatomic landmarks. After this prelude, the next case of an 18-year-old girl who suffered a severe burn injury to the upper limb proved to be more challenging, with scar contracture over the wrist, areofasia along the median nerve distribution, radiocarpal arthritis, and ab ducted thumb deformity from scar contracture. I introduced to the team the concept of perforator flaps from the ulnar artery to resurface the volar wrist.

The hypertrophic scar over the volar wrist was excised and replaced with the ulnar artery perforator flap and full-thickness skin graft. Additionally, the median nerve was released from the compressive scar and the radial styloid was excised to relieve the impingement on the scaphoid. I felt the release and was fully engaged with the patient. The educational goal was to demonstrate that it is possible in hand surgery to perform multiple types of surgical procedures in one sitting, including burn surgery, flap surgery, and wrist surgery—not to mention aesthetic surgery, which is equally important to make the reconstruction as pleasing as possible for this young girl. This case also struck me personally because of one endearing moment during the induction of anesthesia when I noticed this young girl sitting on the table looking around the room for something. She appeared to be looking for something in particular. Finally, her eyes landed on me standing in the corner of the room. She gave me a smile of assurance to indicate that she had found what she was looking for and then calmly closed her eyes.

This brief moment of personal connection is an example of what is so special about these volunteer trips. This fleeting exchange reminded me of why I became a physician and a surgeon. During my medical school and residency interviews, one of the standard questions was, “Why do you want to be a physician?” My answer was not profound, and I am sure it has been uttered by every member of our profession. I responded succinctly that I wanted “to do good.” Despite the constant pressures of the oppressive health care environment, it is truly this fundamental wish, to do good, that motivates us every day when we go to work. With this energized encouragement by my lovely patient, I proceeded to dissect out the perforator and gave her the best reconstruction I could.

*Sacred cows*

Although I have been to many developing countries, traffic in Kathmandu has proven to be an interesting challenge. With limited paved roads and no traffic signals that I could see, driving in Kathmandu can be described as a cat-and-mouse game on very narrow roads with drivers veering at the last second to avoid a head-on collision. The controlled chaos is analogous to a Stravinsky symphony, and no one seemed to be upset when traffic would come to a halt at an intersection and, even more amazing, during my entire stay in Kathmandu and its horrendous traffic, I did not see any traffic accidents or people, animals or even inanimate objects being hit. What I did witness, however, was a Kathmandu traffic jam initiated by a few body cows that apparently became bored with sitting in the median of the road and decided to block the traffic. I was informed that hitting these sacred cows would land you in jail for the rest of your life, whereas hitting a cow appeared to be quite healthy and my first impression is that they are rather magnificently beautiful creatures—even though they could not be coaxed to move aside for our car to pass. No one asked if they were the owners—they most likely are owned by God and receiving feeding from the passersby willing to take care of them.

**Mother knows best**

The next series of cases was as intriguing as the first, such as a 5-year-old boy with bilateral cleft hands, in which one had already developed a thumb-index webspace contracture after an attempt to close the cleft. Although the unoperated hand would have been much better to demonstrate the elegant technique of using the skin flap between the cleft to resurface the thumb-index webspace contracture and close the cleft simultaneously, on the day of surgery, the patient’s mother indicated that she did not feel the unoperated hand needed surgery because the child was functioning well. Instead, she wanted me to tackle the more difficult hand that had been operated on before.

The surgical team discussed the old adage that mother knows best; she made the right judgment for her child to advocate operating on the hand with limitations. There is another adage—this one by noted hand surgeon Adrian Platt, MD—that says to close a pediatric hand cleft is an aesthetic triumph but a functional disaster when the thumb-index webspace is not contracted. I proceeded to demonstrate the use of the first dorsal metacarpal artery flap and groin skin graft to resurface the thumb-index webspace after release of both the webspace and the index finger volar contracture.

The next day at morning rounds, I reconnceted with the patients I treated, and all of them were pleased to see me. It gave me great joy to change their dressings with Dr. Rai and to see all the flaps and fingers well-per fused and the deformities corrected. We also met a desperately poor patient, the sole breadwinner of his family of four, who suffered an accident while working. He was treated at an operating hospital, but did not have the expertise to take care of him, and he had developed a fixed contracture of more than 90 degrees over both knees and osteomyelitis of both tibias.

Without any social support network in the country, a devastating injury like this essentially put the entire family in a hopeless situation. Dr. Rai and his team settled the

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*A 7-year-old girl with hypertrophic scars and contracture of the dorsal hand (left) was treated by using a groin flap to resurface it.*

*Above: Sacred cows block traffic on the streets; (right) view of Kathmandu from the sky.*

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*Note:* Dr. Rai is now building a modern hospital on the hillside overlooking the Lasko valley where Kathmandu sits. This facility was funded by the government to serve the poor, and he was also able to leverage assistance from overseas organizations, particularly ReSurge (formally known as Interplast) to fund some of his work. For example, ReSurge provides approximately $300 for each cleft lip repair that Dr. Rai and his team perform. Though it is a nominal payment, Dr Rai and his team are full-time devoted to this cause. Rather than expending enormous resources to send a full complement team to the developing world, this is a much more sustainable financial model that employs local surgeons who are well-trained to provide continuous care to the poor full-time.
family into the hospital while the patient was being treated, and the hospital kitchen, which is run by Dr. Rai’s wife, provided much needed food. I observed one of the children enthusiastically clean his plate of rice and gravy during my visit to the kitchen. Parents in the United States are always reminding their kids to clean their plates because there are starving children around the world – actually seeing a hungry child always brings tears to my eyes.

When resources are scarce, everything is precious. The hospital recycles food waste in a compost bin to generate methane gas that is used for cooking. The staff collect paper, leaves and tree branches and compress them into cakes that they burn in the oven. This next observation is for my residents, who often roll their eyes when I ask them why they are using each suture to tie a single knot – I observed the Nepalese surgeons using every millimeter of a suture by tying as many knots as possible all the way to the very end. But what really hit home for me was a particularly awkward moment when the curry I had for breakfast acted as a rather effective bowel prep. I went to the bathroom and found there was no toilet paper. I asked for some and was handed a few sheets that became a treasure for me in this desperate situation. I now have an immense respect for the toilet paper that seems to be in limitless supply at my home.

My final exam
The final day provided an interesting finale to a series of many challenging cases, and I suspect my Nepalese colleagues were saving this elbow heterotopic ossification case as a final exam for me. Each of them looked at me skeptically when I proposed heterotopic bone excision and the promise of restoring full motion. I released the ulnar nerve and transposed it anteriorly from harm’s way, followed by removal of heterotopic bone from the olecranon. Then gentle flexion of the elbow produced an audible pop, and voila – the elbow exhibited a full range of motion. This procedure induced collective “ooohs” and “aaahs” in the O.R.

The final talk that I saved as a surprise for the entire staff focused on my research in hand signs in Buddhist art. When I visit monasteries and museums, I often wonder about the symbolism of the various hand postures Buddha assumed, and how they relate to the teachings of Buddhism. I felt it was fitting to take a risk by discussing hand signs in Buddhist art with my audience. After all, I was in Nepal, the birthplace of Buddha. Fortunately, my audience enjoyed the revelation of these hand signs that represent teaching, compassion, wisdom and self-sacrifice.

As I got out of bed in the middle of the night to travel the chaotic streets of Kathmandu on my way to the airport, I reflected on what this trip had meant to me. Though a five-day visit may not make a big dent in the country’s caseload, the skills learned by following basic principles of plastic surgery and hand surgery would be most beneficial to the local surgeons in their future care of their people. But what is equally important is for them to see in their future the achievable goal of developing an outstanding program that can take care of the most complicated injuries and conditions.

As I do after every one of these trips, I returned home with a regained sense of my fortune and a renewed appreciation for a few grains of rice, a cup of clean water or a suture. In particular, I left Nepal with a sense of accomplishment – I had made good on my desire to do some good.