

South East Asia - October 2003

Lewis G. Zirkle Jr. M.D.

We were traveling on a very crowded highway to the home of the State Minister of Health in Bangladesh. We had been invited to meet him because his son had a broken tibia and femur which had been fixed by SIGN nails. The car was small, of unknown make, probably from the early '80's. I noticed that the cars around us were coming within inches of us, in traffic that is seldom experienced outside of the developing countries. Every time that there was an empty space, people used whatever advantage they had - loud horns, small size, maneuverability - to occupy that space. Despite the near chaos amongst the drivers, Dr. Quasem seemed completely unperturbed and I asked him how he regarded the other drivers. His remark was, "They are my brothers".

I feel that Dr. Quasem's words epitomize the SIGN trip to Cambodia, Vietnam, Myanmar, and Bangladesh. Most of the hospitals we visited had well established SIGN programs. The word *brother* reminds me of a fraternity. *Fraternity* describes the friendship and the actions experienced on this trip. I hasten to note that *fraternity* is not gender specific - we have female SIGN surgeons, including, most notably, Dr. Carla Smith who started SIGN projects in Nepal a few months ago.

Phnom Penh, Cambodia

Dr. Duong Bunn met us at the airport and took us to the Kossamak Hospital to look at the x-rays of patients on whom we would be operating the next day. We had limited time in each country so everything was planned ahead for maximum surgery time.



*Before and after — with SIGN surgery
X-rays are black and white the world over.*



*Patient care is a family affair in developing countries -
one reason getting the patient out of bed quickly is critical.*

"...they are my brothers."

Dr. Quasem



We reviewed SIGN surgeries at the Cho Ray hospital

Dr. Bunn, who learned SIGN surgery from Dr. Tuan in Vietnam via the internet, has reported all of his cases, including pre and post operative x-rays, so we are aware that he is an excellent surgeon. Young men and women in fraternities sometimes gather together to talk about their favorite subjects. Similarly, surgeons tend to get together to talk about surgeries and to demonstrate their points with x-rays. I might note that no matter what country we visited, these x-rays are the same - black and white. This fraternity extends to all mankind.

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Our route to South East Asia— October 2003

Dr. Bunn also wanted to share SIGN with his colleague Dr. Siteth. We started a program in Kom Pong Cham Province hospital, 60 miles north of Phnom Penh.

Ho Chi Minh City, South Vietnam

We then flew to Ho Chi Minh City, Vietnam. There we enjoyed the same activities of the surgical fraternity - including viewing x-rays and operating. Surgeons from eight hospitals around Vietnam attended the conference. They presented their SIGN experiences in their particular hospitals. We discussed successes, complications, and difficulties. When a problem was presented, we would all put our heads together to tell our experiences in solving similar problems. Dr. Tuan even arranged live internet access so that our surgical database could be demonstrated by Jeanne Dillner, SIGN's Executive Director. We did surgeries at Cho Ray and HTO (Hospital Trauma Orthopedic) in Vietnam. In Vietnam, Cho Ray is the largest hospital and HTO is the largest Orthopedic hospital.

We had only two days to spend in another SIGN hospital, Binh Duong Hospital with Dr. Han Khoi Quang. These two days were packed with SIGN orthopedic surgeries. The first day we operated on four fractured femurs and two fractured tibias. We viewed follow-up patients in between these operations. Dr. Quang had started SIGN programs in nearby Binh Phouc and in Kon Tom which is many miles away up in the mountains. He knew that the injured people were having trouble getting to the city hospitals. The doctors from these hospitals were there during the SIGN surgeries. The following day we had a conference in which the x-rays were presented from the past year in Bing Duong as well as from Binh Phouc and Kon Tum. Dr. Quang and his staff have done



A grateful SIGN patient

over 400 SIGN surgeries. He is an expert surgeon and has been instrumental in helping us develop our techniques, and indications for SIGN nails.

Hanoi, North Vietnam - A sad farewell to a friend

We then traveled to Hanoi wanting to see our friend Dr. Ngo Ngoc Long. He was a patient in the hospital in which he had formally been an orthopedic surgeon. He was one of our first SIGN project managers - a great surgeon and a very compassionate man who always wanted the best treatment for his patients. He and I became friends four years ago. We had ridden around Hanoi on his motorbike carrying the SIGN set in the process of doing SIGN surgeries in four different hospitals.

We had two very emotional visits with Dr. Long who was paralyzed with a spinal tumor. He struggled to speak with us due to the lung involvement of the tumor. Our first visit was the night we arrived; our second visit was the next morning and caused us to miss our flight. As we were preparing to leave, I again



SIGN patients at Bing Duong await follow-up visit.

became emotional. He told me, "No crying, Do not say goodbye". We parted with the Vietnamese farewell saying of "See you again". Dr. Long died two weeks after our return home. I miss him.

I reflected on how much Vietnam means to me as we flew away. During 14 visits I have come to admire the surgeons' perseverance, innovation, and frankness as they try to provide the best care for their patients with minimal equipment. Years ago I observed how they cut K-nails to make plates and manufactured screws in their closets. These screws were used to make pins to pin hips. SIGN is ideally suited for use in Vietnam. Most surgeons do not have x-ray in the operating room. Vietnamese surgeons have quickly grasped the SIGN technique, modified it, suggested improvements, and now actively use the SIGN surgical database.



One of the first woman SIGN surgeons



A motorbike journey around Vietnam — memorable!

Myanmar – Exciting possibilities

The trip to Myanmar (formally Burma) was timed so that we could participate in the Myanmar Orthopedic Surgeon Conference. One section of the conference was devoted to SIGN surgery. Papers were presented by surgeons from Yangon and Mandalay. Each surgeon was very enthusiastic in describing his experience with SIGN. Dr. Thit Lwin, the project manager of SIGN in Myanmar, also wanted to establish a new program in North Okalapa General Hospital (NOGH). He arranged for the patients to be transported to his hospital and we performed SIGN surgeries for two days. As we operated and showed them the SIGN technique, we also had the opportunity to learn. It became apparent that there was a better way to approach proximal tibial fractures.

We also had many discussions with the Myanmar Orthopedic Society, the Minister of Health, and his deputy about the role SIGN can



An appropriate Mission Statement at NOGH

and does play in Myanmar. Although our contact with Myanmar has not been as frequent or as long as in Vietnam or Cambodia, we feel very close to our brothers in Myanmar.

Bangladesh - Great Strides

We arrived in Dhaka, Bangladesh the night before the SIGN Bangladesh Conference 2003. Dr. Faruque Quasem worked for days organizing programs and posters. Two large banners hung in the hospital when we arrived announcing the conference. There were other banners in the room where the program

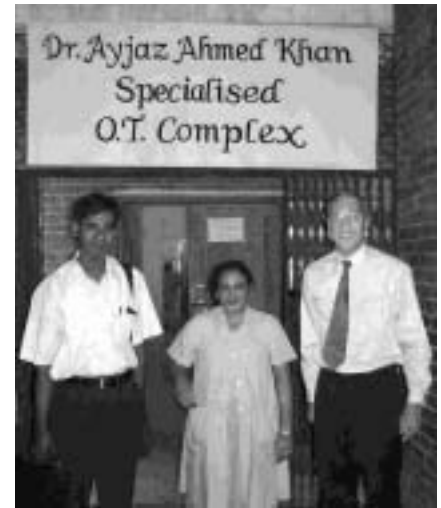


Impressive analyses of SIGN results were presented.

took place as well as where we later saw patients. During the introductory session, respect was paid to Dr. Ayjaz Ahmed Khan, the founder of SIGN in Bangladesh.

This conference included 13 papers by residents. Different approaches were presented comparing and contrasting SIGN Interlocking Nails and Fin Nails in the same fracture. Comparisons were made of fractures done with different approaches - questions were posed and answers sought in these papers. I am sure as time goes on and the results become statistically significant, Bangladesh will contribute to the knowledge of fracture fixation for orthopedic surgeons around the world.

I noted earlier Dr. Quasem's words, "They are my brothers". This friendship was also apparent in the family of Dr. Rizvi who opened their home for us to stay. Mrs. Dr. Ruhida Rizvi is a cardiologist whose father founded and nurtures a cardiology hospital which does cardiac surgery. He is gradually obtaining more sophisticated equipment. Dr. Rizvi is an orthopedic surgeon at NITOR. Their daughter Rumki is in high school. Her goal is to become well educated abroad and return to contribute to the welfare of Bangladesh. Their six year old son Iftekhar made his hospitality apparent when he padded into my room and asked if I would like to watch television with him. He switched the channel to CNN when I arrived.



Banner honoring Dr. Khan

As we flew home I reflected on how SIGN is a fraternity of like-minded people having a similar vision of "Creating Equality of Fracture Care Throughout the World". Part of our attachment to each other is the striving to attain that goal despite the frustrations from situations that surround us. I am very grateful to the many people who make this movement toward equality possible. Dr. Quasem is right—we are brothers!



Tibia

Femur

Humerus

Three concurrent fractures on a patient treated with SIGN nails by Dr. Pardiwala

Progressive Innovations

Lewis G. Zirkle Jr. M.D.

SIGN was established five years ago. SIGN has evolved in several ways, supported by suggestions of overseas SIGN surgeons who have experience treating more extensive fracture injuries than are normally seen in this country. These suggestions are discussed in our SIGN production conferences each Tuesday

The SIGN nail was originally developed for fractured tibias and has produced very good results in that application. Then came the need to treat a floating knee, i.e. a leg with breaks in both tibia and femur on each side of the knee. I participated in one of the first SIGN floating knee surgeries and I was very happy with the way the SIGN nail performed in the treatment of both the fractures of the tibia and

femur. Subsequently, the doctors in Vietnam used the SIGN nail for fractures of the femur toward the hip, inserting it through the top of the femur near the hip joint. This also worked very well. Now we have designed new nails that can be used to treat these fractures without using distal interlocking. We are also developing a system within which we can use a combination of plates and screws along with our IM nail system. It will make a more secure fixation of the fractures in the lower end of the femur and the upper end of the tibia.

Doctors in India started using the SIGN nail in the humerus, the arm bone. These were fractures that had previously been treated by other means, such as plates or other nails,

that had not healed. Several of these were treated with SIGN nails and the results were very good.

The x-rays above illustrate a case of one man who had fractures of the tibia, femur and humerus, all treated by SIGN nails. The same nail is being used for three different bones. This makes the SIGN nail a very unique nail.

This succession of progressive innovations in SIGN techniques has been largely devised by the SIGN surgeons in their home hospitals overseas. One of the wonderful experiences at SIGN has been to synergize these progressive innovations for the benefit of all.

SIGN Surgical Database

Jeanne Dillner

"It's easier to know where you're going if you're sure where you've been."

SIGN has always asked and expected the SIGN surgeons to provide feedback on the instrument, implants, techniques and results so that we can make progressive improvements in the services we are providing. The data protocol form (the form for reporting this information) which is included in the SIGN technique manual has undergone revision several times in an effort to encourage reporting by minimizing the time and effort for the surgeons. However, while computers are common in the USA, they are not so readily available in most developing countries. A few SIGN projects have the ability to complete the protocol forms, scan them and send them via email. Historically, however, most sites simply wait to report their cases until we arrive. Consequently, we may not discover the number and quality of cases being done until we visit. Spending hours viewing and photographing x-rays of completed SIGN surgeries, while an encouraging part of our trips, is not the most effective method of collecting and assimilating such vital information.

Two years ago, Nepal sent us a data protocol sheet with the pre and post-op x-rays attached. This became our model, because while the data are important for trend analysis, the x-rays tell the complete story of surgeries.

This year we became aware of the possibility of developing a database which could be accessed via our web-site. It could be the repository for patient data and pre and post op x-rays. Since our sites now communicate fairly regularly using e-mail, we believed this would be a viable way of obtaining timely feedback information. Moreover such a database could be mined for trends. Our goal was to develop a system that would take less than 5 minutes to record all the data. Dr. Tuan, who was visiting SIGN during the design phase, helped us determine the most crucial data elements to keep. CTTS developed the program, using technology that would accommodate dial-up connections

and older computers. The program went into full swing in August 2003 and now has more than 1100 entries. This is not a complete picture of the SIGN surgery activities since not all surgeons have yet learned to enter their cases using the database. However, it is indicative that SIGN nails are being used on a daily basis all around the world.

One of my duties for this trip was to provide hands-on training on the data base to the surgeons in countries that we visited and to determine the obstacles learned that the technology is available to everyone, but only through dial which routinely take several minutes to obtain. Moreover, the ease of access differs notably from site to site. In Vietnam, many surgeons have computers at home. NITOR in Bangladesh and Binh Duong Hospital in Vietnam both had reasonable access to the internet via computers located at the hospital. However, surgeons at both locations still entered the majority of their cases from their home. In Cambodia, the hospital had only one computer, leaving the lead surgeon, Dr. Bunn, to enter the data at home, with the help of his computer literate daughter. In Mandalay, Myanmar we learned that the surgeons



Dr. Quasem leader of SIGN-Bangladesh

to reporting. I available to everyone, but only through dial up connections

had just obtained their first internet account at the recently opened cyber café. Professor Dr. Lwin, in Yangon, suffers through the plight that many of us endured years ago with slow telephone lines, which often timed out before he could finish loading his information. Access to digital cameras is fairly common but the up-loading of photos is nonetheless slow.

The other obstacle is habit. Entering data for SIGN is a new requirement, so we must assist the surgeons in developing the habit of tracking the information. We have designed a data input form which they can conveniently complete after each surgery. Dr. Rocky in Bangladesh is shown on the left preparing to fill out the form after one of the many surgeries we conducted during our visit. Dr. Quasem, leader of SIGN-Bangladesh, leads not only in surgical technique but also in data reporting.



"The task's not won 'til the paper work's done." Dr. Rocky with the new data form.

After seeing the work that went into each of the papers presented at the conferences in Vietnam, Myanmar and Bangladesh, we became even more convinced of the value of the SIGN surgical database as a repository for data, which can later be mined for trend analysis leading to continuous improvement. We appreciate the effort each surgeon takes to enter the information.

Count-off By the Numbers!

Jeanne Dillner

SIGN is a non-profit company but we are nevertheless a responsive, results-oriented company. Just as a picture may tell a thousands words, numbers can indicate tremendous success.

In January we will celebrate our five year anniversary. Let me share some numbers with you..

- We have gone from zero projects to seventy five in 32 countries in those five years. Surgeons at those projects have conducted at least 8000 surgeries.
- With their assistance and support, we have developed a world-class IM Nailing system which has nearly doubled in demand from last year. 3800 nails were delivered in 2002, 7800 in 2003. Screws shipped doubled from last year to 18,500 in 2003.
- The Surgical data base, first released in August of this past year, receives at least 10 entries per day.

We continue to hit our manufacturing targets, and develop new products, such as our line of shorter nails, now required as a result of entering into countries like Guatemala and Nicaragua.

New instruments and implants have been developed such as:

- A solid slot finder and step drill which make obtaining the distal interlock even easier.
- A pilot reamer which will assist many hospitals who are continuing to use 30 year old hand reamers.
- The L-handle which has made antegrade nailing much easier.
- A longer target arm which accommodates the longer 400 and 420 nails developed to meet needs in Africa.
- A SIGN technique training video which broadens the capacity of our educational services.

Everyone involved with SIGN has a part to play in our success.

- The 12 dedicated full time staff at SIGN play a daily role in providing the best IM system to hospitals in developing countries. They serve hundreds of surgeons around the world by making high quality FDA-cleared implants and by tracking and processing communications around the world.
- The SIGN surgeons at host countries play a daily role in providing healing to the poor patients. They also assist in the development of the system and the technique.
- Volunteers at SIGN make it possible to finish the nails, package them and provide these mailings to you.
- Vendors who provide us with incredible discounts, and excellent services and products, help our dollars go that much further..

It has been an Inspiring five years.