

SPINE EDUCATION AND RESEARCH FOUNDATION

Activities Report of Operation Straight Spine

Ramakrishna Mission Hospital, Kolkata, India
February 01-12, 2016

Jeff McConnell, MD



This Activities Report includes a description and pictures of the surgeries performed on patients with a variety of spinal maladies

Team Members for OSS 2016:

INDIA: Ujjwal K Debnath, FRCS – Orthopaedic Spine Surgeon

UK: Neena Seth – Consultant Anaesthesia

Meera Alexander – Consultant Anaesthesia

Priya Krishnan - Consultant Anaesthesia

Shaima El Noor - Consultant Anaesthesia

Marian Barry – Scrub Nurse

Sarah McMurtrie, RN – Paediatric Nurse Specialist

Gareth Welch – Anaesthetic Nurse Specialist

US: Jeff McConnell, MD – Orthopaedic Spine Surgeon

Denise Lawyer, RN – Neuroscience Nurse Specialist

Johanna Ziegler, CST – OR Scrub Tech

Samantha Cerbone – OrthoAssets Sales and Business Development Associate

Conor Donohue – Neuromonitoring Specialist

Sajili Bacallo – Globus Medical Representative

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Surgery Center of Allentown
Guys Hospital, London

30 JAN 2016

US team consisting of Jeff McConnell, MD, Christine McConnell, Johanna Zeigler, CST, Connor Donohue, Denise Lawyer, RN, and Samantha Cerbone arrive in Kolkata from New York (via Dubai, UAE) on Emirates Airlines at 19:15. The team is met by Sajili Bacallo, Globus Medical product consultant who had arrived earlier that morning from Los Angeles. Our driver from the Ramakrishna Mission Hospital transports us to the Tollygunge Club where the team will stay for the coming two weeks.

At the Tollygunge Club we are met by Neena Seth and Meera Alexander our anaesthesiologists, who had arrived from the UK the day before, and discuss the plans for the coming week.

31 Jan 2016

Ramakrishna Mission Hospital: The first day is spent unpacking our supplies, flown in from the US, and organizing the store room. Along with Anaesthetists Neena Seth and Meera Alexander, we make rounds on the various wards to assess the patients who are admitted for surgery over the next two weeks. Patients included several young children with congenital scoliosis and early onset scoliosis. We choose two young patients for the first day of surgery and relate the equipment needs to Mr. Bacallo, Globus equipment representative, so he can have the appropriate implants/instruments sterilized for the first day.



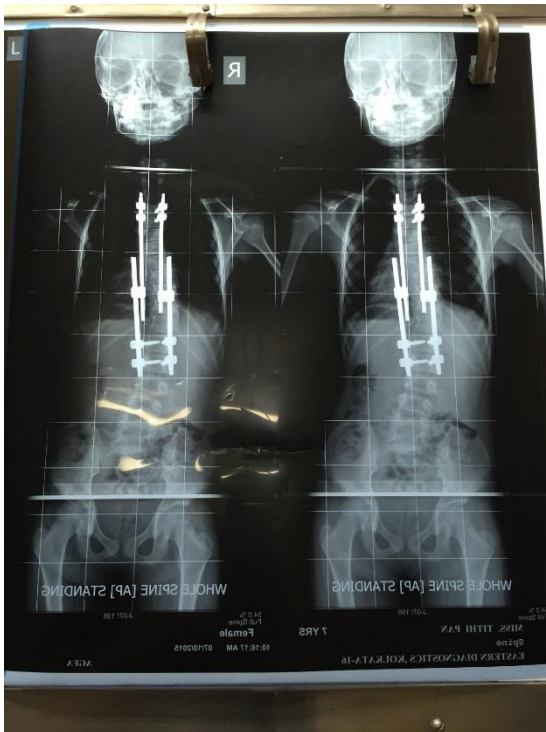
With as much sorting work that could be done that day, the team returned to the Tollygunge club to prepare for Dr. Debnath's daughter's first birthday party. This event was attended by well over 150 people. Everyone enjoyed the delicious food and festive local music. After the party, the team headed back to the Tollygunge club. Everyone is exhausted and needs to prepare for the first day of surgeries. Sarah McMurtrie, RN arrives from the UK Sunday night to join our team.

1 Feb 2016

First Day of surgery at RKMSP.

1. Tithi Pan, 8 yo female with early onset scoliosis. Tithi was first operated on in 2013 to treat early onset thoracic scoliosis of 42 degrees. Surgery consisted of insertion of growing rod construct from T4/5 to L1/2 with fusion of the proximal and distal screw foundations. Four 3.5mm rods were inserted with side-by-side connectors in the middle. The initial plan was to perform repeated lengthening of the rods 6 months later, unfortunately this did not happen and it took over a year to revise. In 2015, the 3.5 mm growing rods were removed and replaced with a 4.5 mm system. This year a lengthening procedure was performed. In the future, Tithi will need another lengthening procedure or a definitive fusion.

During Recovery, Tithi was comfortable but was anxious to see her mother and father who were waiting in the hallway. Tithi was brought back to the main ward of the children's hospital shortly thereafter where she was greeted by all of the other children. Before going off for a nap, she insisted on coloring two of the team members.



2. Neil Lama, 10 yo male. This patient had been operated on previously in 2012 to treat congenital right thoracic scoliosis, absent ribs on the right hemithorax, L1-2 syrinx and a tethered spinal cord at L3. In 2012 Neil had underwent convex fusion at the apex of the curve and placement of “growing” rod construct on the left side with cervical lateral mass screws and 3.5mm rod at T10 and T11 and hook claw over the third rib on the left. Unfortunately, he was unable to be lengthened over the past year. In 2013 Neil had surgery to section the filum terminale at L5-S1 and release of the tethered cord by a

local neurosurgeon. The second part of the procedure included removal of the old instrumentation (which had dislodged at the proximal rib claw), insertion of bilateral growing rod construct with T2 screw-hook claw and T10-11 screw distal foundation. In 2015, a revision surgery was performed in order to replace the growing rods with a 4.5mm system. This year a lengthening procedure was performed. Neil will most likely need another one or two more surgeries.

Neil recovered quickly after his most recent surgery. Neil's mother speaks English fluently and helped translate for the OSS team when communicating with the patients and parents on the ward.

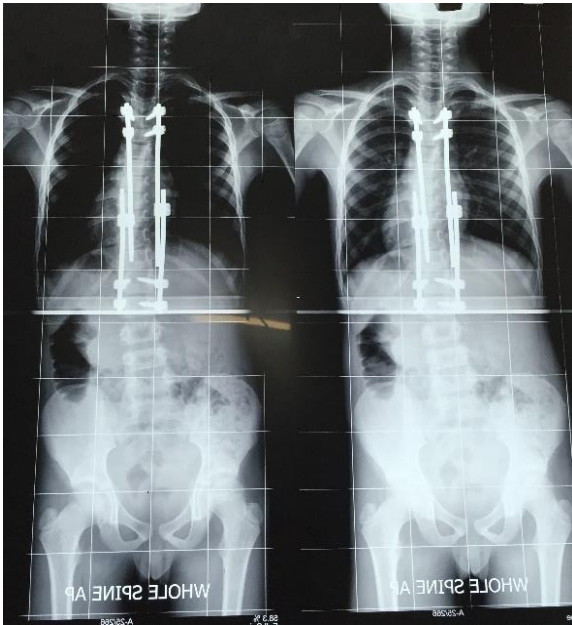


Marian Barry, RN arrives from UK to join the team

The team returned to the Tollygunge Club around 6:30 and had dinner at the club around 8:00.

2 FEB 2016

1. Dipunkar Habler, 11 yo male. Dipunkar was first operated on in 2013 to treat early onset thoracic scoliosis of 30 degrees. Surgery consisted of placement of growing rod construct from T4/5 to L1/L2 and the two proximal rods were cross linked together. This year Dipunkar was in for a lengthening procedure. It was evident from post op x-rays that lengthening has already made the spine straighter.



Prior to surgery, Dipunkar spent his time in the waiting room coloring Harry Potter Pictures with some of the team members. As soon as he woke up from anesthesia, he reached for his coloring book and asked to see his mother. He recovered with no problems after surgery back on the ward with the other children

2. Priti Karar, 11 yo female. This patient was first operated on in 2015 to treat Progressive congenital scoliosis with severe truncal imbalance. She has a long thoraco-lumbar curvature T2 to L1 measuring 70° with block Vertebrae at T2/3, T5/6 and T12/L1 levels. This year, the surgical plan was to do a full hardware removal in order to replace instrumentation. During surgery, lower extremity motors were lost and somatosensory motors on the posterior tibial of the left leg flat lined. After waiting 30 minutes to see if the mean pressure would raise, the right leg started to have some response and Dr. McConnell decided to close. The plan is to awaken her and assess her neurologic function and allow her to rest and hopefully see improvement in motor function in the lower extremities. Once she stabilizes the plan would be to return to the OR and complete the instrumentation and fusion of the spine.



The team returned to the Tollygunge club around 7:30 and had dinner at the club around 8:30

3 FEB 2016

1. Rukhe Jeba, 11 yo female first operated on in 2014 to treat congenital right thoracic scoliosis. Her first surgery consisted of a right thoracotomy and T5-6 and T6-7, T7-8 discectomy followed by posterior distraction growing rod instrumentation using Protex-C from T5 to T12. In 2015, she was revised with a 4.5 mm growing rod system. This year, Dr. McConnell removed all of Rukhe's existing hardware and inserted hooks at T2- T3 with pedicle screws in the lower thoracic area and completed a formal spinal fusion from T3 to T12

Rukhe always has a smile on her face, pre- op she was in great spirits and waved to all of the other children as she left the ward. The day after her surgery, Rukhe was sitting up in bed, coloring, singing Taylor Swift with team member Sam, and even created a secret hand shake with her.

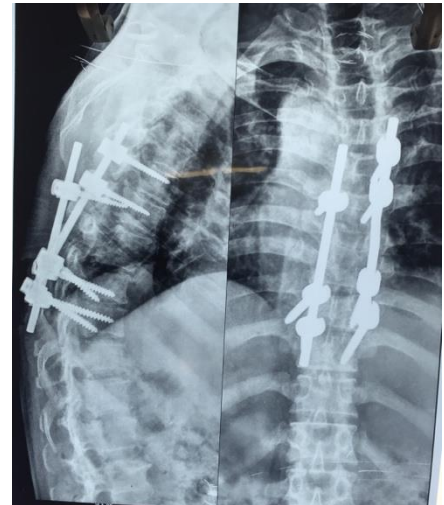


The team finished early and returned to the Tollygunge club early to relax before dinner. All team members enjoyed a delicious meal at the club and headed to bed early.

4 FEB 2016

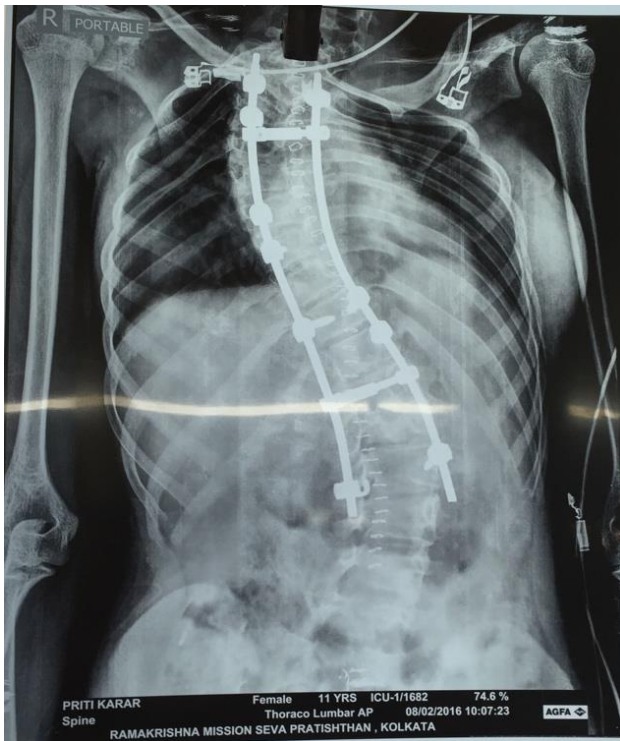
1. Nandalal Shaw, 50 yo male with Tuberculosis of the spine (Pott's disease) involving the T7& T8 vertebrae with abscess formation in the spinal canal. He had weakness in both legs and kyphotic deformity of the spine. He was operated on 4 months ago by a local surgeon. Unfortunately his spinal hardware loosened, his deformity worsened and the screws pulled out of the vertebrae. Eventually the end of one of the rods eroded through his skin and he developed an open sore that allowed the spinal hardware to become secondarily infected. The surgical plan included removing all of the infected hardware, closing the open wound, and replacing it with new hardware in order to stabilize and fuse T3 to L1. A Pediguard was used to help locate Mr. Shaw's pedicles. Closing Nandalal's incision was a difficult task because Dr. McConnell had excised as much of the infected areas as he could in order to give the wound a better chance of healing properly.

In later tests, it was found that the infection in Nandalal's back was resistant to all but one antibiotic. This will need to be closely monitored to help avoid further infection. His motor function was improved drastically after surgery. During physio, Mr. Shaw was able to stand with the assistance of a Zimmer Frame.



5 FEB 2016

1. Priti Karar, 11 yo female operated on Feb 2, 2016 was stable enough to return to the operating room to perform the definitive instrumentation and fusion of her deformity. A Pediguard was used to assist in locating her pedicles prior to screw placement in a construct that spans from T2 to L2. A pedicle hook was implanted at the left T2, with screws at T3, T7, T8, T10/ T11, left L2 with a lamina hook on the right side of L2. A Ponte osteotomy was done above L2. The two 4.5mm rods were connected with two crosslinks. No meaningful correction of the deformity was done due to her tethered spinal cord and the risk for neurologic deficit. Priti's spinal cord was monitored very closely throughout the entire surgery. At the completion of surgery, Priti's monitoring status remained at baseline. After surgery, Priti was upbeat. With the help of Sam and Ruhke, she was sitting up, dancing, and coloring. She will need intense Physio to restore all prior motor function. Still, Priti is very determined to walk normally again. Anytime a team member would come to visit her, she would have them help her sit up and would eagerly show them the progress she was making in her strength. She would ask for music before starting physio, which she would turn into her own Taylor Swift aerobic session. On the last day of rounds, she impressed everybody by standing up on her own and walking around her bed. There is evident limited strength in her right foot, but Priti is doing her best to bear weight on it.



- Pradip Das, 14 yo male with a T11 hemivertebrae with focal kyphoscoliosis. Surgery consisted of placement of rod construct from T9/T10 to L1, with screws at T9, T10, left T12, and L1. The hemivertebrae at T11 was excised.

After surgery, Pradip was all smiles. Like a typical 14-year-old boy, he would smile anytime one of the girls came to see him. Pradip's smile was contagious and he was always smiling. On the Monday following his surgery, Pradip was moved to the male ward where he would stay until Thursday. Anytime a team member would visit, Pradip would hop out of bed and walk around with them.



The team returned to the hotel around 9:45 pm that evening and ordered Chinese food from Chow Man. All of the team members ate in Dr. McConnell's suite and headed to bed shortly after dinner.

Tithi, Neal, and Dipunkar were discharged.

6 FEB 2016

No Surgery

The First UK team of Neena, Meera, Sarah, and Marian returned to England.

The Second UK team of Shaima, Priya, and Gareth arrive in Kolkata.

The US team traveled to Santiniketan to get away for the weekend. Dr. Debnanth arranged for the team to stay with his friend Subhas. The three-hour journey to Subhas' house took longer than expected because one of the cars broke down on the way there. After the car overheated five times, the driver pulled over to a TATA repair shop for a quick fix. After that, the group was on their way.



Once the team arrived at Subhas' house, we were all instantly entertained by our quick-witted host. That evening, the team attended a local fair where we enjoyed the talents of local music and artists. After the fair, all returned to Subhas' house for a traditional Bengali meal. It was delicious.



7 FEB 2016

No Surgery

The team enjoyed a traditional Bengali breakfast at Subhas' house. After breakfast, everyone headed to Visva-Bharati University to tour the grounds and home of Rahindra Tagore, philosopher, poet, activist, Nobel Laureate and contemporary of Mahatma Ghandi. On the way back to Subhas' house, we stopped at the fair again to shop for gifts to take home.



For lunch, everyone headed to a local restaurant owned by Subhas' cousin. Everything was served family style, and the food just kept on coming. It is no wonder everyone fell asleep for the long ride back to the Tollygunge. Priya, Shaima, and Gareth were waiting at the Tollygunge. We joined the group for dinner around 8:30.



8 FEB 2016

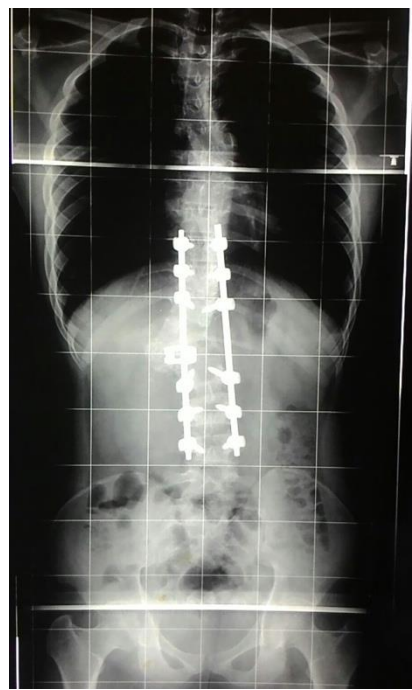
1. Aman Kumar, 11 yo male with congenital scoliosis caused by an unsegmented bar on the concavity of apex on the left as well as a hemivertebrae on the convexity of the apex. It was very difficult to distinguish T7, T6, T5, and T4 from the X-Rays. During surgery, a PediGuard was used to locate pedicles. Dr. McConnell performed an instrumented fusion from T2 to T11 with screws at T2, the left side of T3, T4, the left side of T9, T10, and T11.



Aman was always extremely polite and loved coloring. He would always ask team members to color with him anytime they would come to the ICU to check on him. After surgery, Aman was in a fair amount of pain due to the fluid buildup in his lungs. Still, he was up and moving around two days after surgery. Three days after surgery, Aman was moved back to the children's ward. Shaima requested that Aman was moved to the bed next to Priti, so that they could encourage each other during Physio and lift each other's spirits.

9 FEB 2016

1. MD Kutubuddin, 22 yo male with congenital kyphos scoliosis, with the apex around T12, 80 degrees of kyphosis, early myelopathy, a hemivertebrae at T7, as well as many congenital anomalies. He has 14 ribs on the left and 13 ribs on the right and an extra bone mass of 2 additional vertebrae and one additional disc between T12 and L1. Screws were implanted at T10- L3 and the extra bone mass between T12 and L1 was excised. A TLIF cage was implanted where the bone mass was extracted.

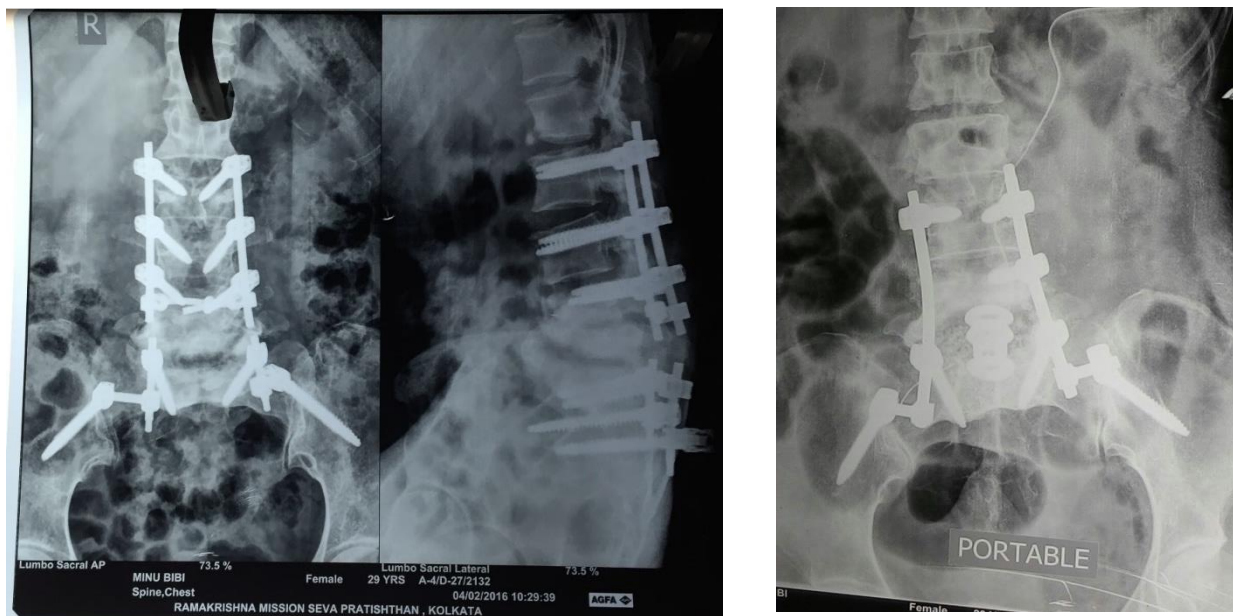


After Surgery, MD recovered slowly but was eager to start moving on his own. Two days after surgery, he was transferred out of the ICU and onto the male ward. He was fitted with an LSO brace for post-operative support. MD will forever be referred to as “Mr. Good Morning” – MD spoke essentially no English, but knew the term “Good Morning”. It did not matter what time of day it was, if MD saw you – he would greet you with “Good Morning”

10 FEB 2016

1. Minu Bibi, 29 yo female. This patient was operated on previously in 2015 to treat L4 to S1 TB spine with weakness in both legs. She was unable to ambulate due to pain in her back and legs. She underwent posterior alone surgery with debridement & posterolateral fusion with instrumentation from L2 to S1. She had two units of blood transfusion post-operatively and began Anti TB medication. There was a fair amount of confusion before Minu's surgery because it was unclear whether or not she had eaten breakfast or not. Once it was clear, that she had not eaten, she was prepped for surgery. The goal in this year's surgery was to restore lordosis to Minu's lumbar spine. First, an anterior approach was used to perform a corpectomy on L5 and insert an expandable cage. Minu was flipped to the prone position to begin the posterior approach. All prior instrumentation was removed and new, larger 5.5mm screws were implanted at L3, the left side of L4, L5, and S1. Proximal rods were crosslinked together.

The day after surgery, Minu was already asking when she could go home. She explained that she had a young child at home and her husband had passed away two years earlier. Two days after surgery, Minu was fit with an LSO brace for post-operative support.

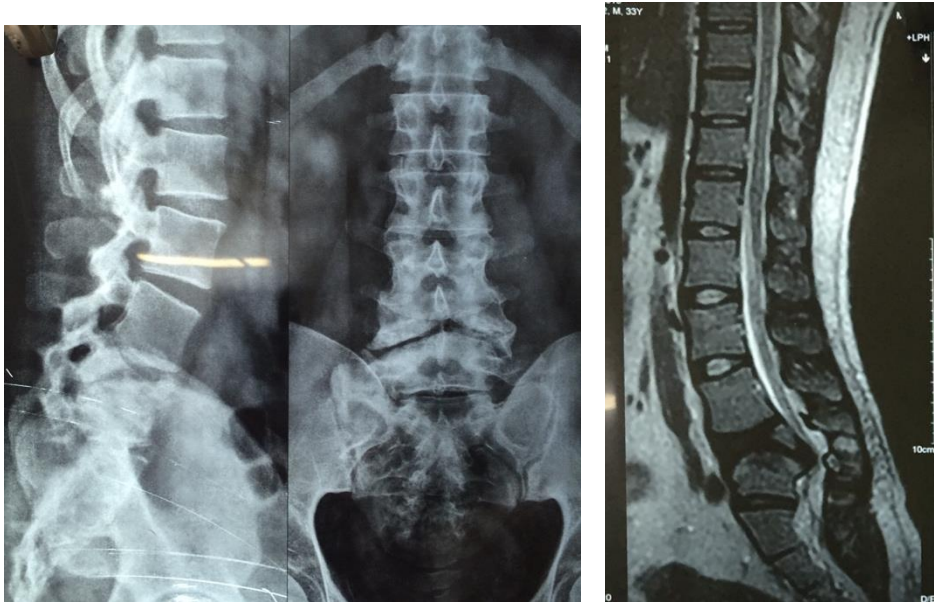


Ruhke Jeba was discharged around 6:00pm

The team returned to the Tollygunge club around 8:30 and headed to the clubhouse for dinner.

11 FEB 2016

1. Prasanta Das was a 35 yo male with an unusual congenital hemivertebra at L4 with severe lumbosacral kyphosis, degenerative disc, and a herniated disc between L4/L5. He had severe low back pain and leg pain. Surgery consisted of excising the congenital hemivertebra and placing a titanium cage between L3 and L5 with instrumentation using 4.5 mm rods screws at L3 and L5. The day after surgery, Prasanta was in great spirits, his pain was well in control and he greeted all team members with a smile. He was fit with an LSO brace for post-operative support.



Later that evening, team members headed to Peter Cat for dinner, a restaurant famous for their Chelo Kababs. Once dinner was finished, some of the team members headed out to explore Kolkata's night life, while the rest of the team headed back to the Tollygunge Club for bed.

12 FEB 2016

No Surgery

The team went to Ramakrishna Mission Hospital to do their last day of rounds. Rounds began by going to visit Prasanta and Minu in the ICU. Both were in good spirits and were fit with LSO braces. The next stop was to go see MD on the men's ward. MD greeted the entire team with a final "Good Morning". His drain was pulled and he was also fit with an LSO brace. A smiling Pradip walked down the hallway to greet the team; he would be discharged later in the afternoon. The team then traveled to do a dressing change for Nandalal. Nandalal was able to sit upright in bed and move his legs more than ever before.



Priti and Aman were still on the children's ward, so the team went in to see them last. When we walked in, Aman was up and walking around because he had just finished his lunch. His bed was next to Priti and the two of them had spent the morning coloring together. Priti wanted to show Dr. McConnell the progress she was making, so she got out of bed and did a lap around her bed. She began with the help of a Zimmer frame, but asked for it to be taken away so that she could just use the bed frame for assistance.

After rounds, everyone headed to the main dining hall to help celebrate a feast with all hospital staff. This feast was to honor the goddess of Kolkata who represents knowledge and wisdom.



Once everyone finished their meal, the US team packed up and headed to the airport.

The UK team returned to the Tollygunge club. The UK team saw all the remaining patients again the next morning on Saturday, 13 February before setting off for the airport and home.



