

# **Group Report for the 2016 APSS DePuy Synthes Travelling Fellowship**

*March 14 to April 1, 2016*

## **Group 1 Fellows**

### **1. Dr. Hiroyuki Yasuda (Japan)**

Spine Surgeon  
Osaka General Hospital of Japan Railway  
Company  
Osaka

### **2. Dr. Prakash Sitoula (Nepal)**

Assistant Professor  
Department of Orthopaedics  
Nobel Medical College Teaching Hospital  
Biratnagar

### **3. Dr. Shih-Hsiang Chou (Taiwan)**

Spine Surgeon  
Kaohsiung Medical University Hospital  
Kaohsiung

### **4. Dr. Kestutis Valancius (Denmark)**

Spine Surgeon  
Department of Orthopedics Aarhus  
University Hospital



From left side: Dr. Kestutis Valancius,  
Dr. Hiroyuki Yasuda, Dr. Shih-Hsiang Chou,  
Dr. Prakash Sitoula

**First Centre**  
**Kyung Hee University Hospital at Gang Dong, Korea**  
**Duration – March 14 – 20, 2016**  
**Host – Prof. Kim Ki-Tack, Prof. Lee San Hung**



**3/13, 2016 Day 1 in Seoul**

When we all (at last..) reached the hotel in Seoul, we took a first walk around the area of Gangdong-gu. Professor Kim's fellow Dr. Lee took us around and introduced us to the Kyung Hee University Hospital. At the same time, we all 4 fellows from different parts of the world became good friends: Dr. Yasuda from Osaka, Dr. Kestutis from Denmark, Dr. Prakash from Nepal and Dr. Shih-Hsiang from Taiwan. After the roundtrip, we had a very special Korean dinner with prof. Kim's fellow Dr. Lee.



**3/14, 2016 Day 2 in Seoul**

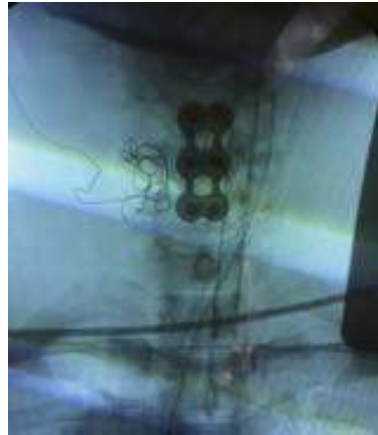
It was the first day as Spine surgery fellows in Kyung Hee University. We visited Professor Kim from the early morning. We get an impression of both very pleasant, honorable and important person.

After having a cup tea with professor, we went to operation room immediately. Professor Sang

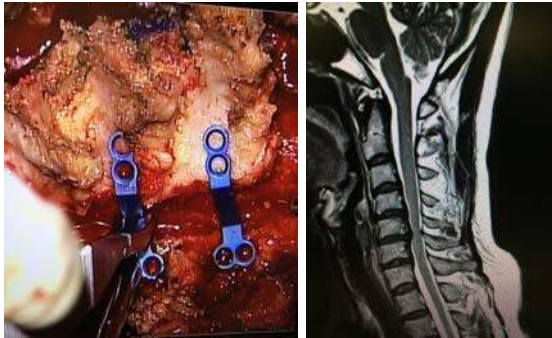
Hun Lee had three operations that day. The first one was C5/6, C6/7 foraminal stenosis. Plan was to do the foraminotomy on the level of C5/6, C6/7. With the help of microscope The second case was disc herniation C4/5, C5/6 with myelopathy. C4/5, C5/6 ACDF was made with iliac bone for interbody fusion. Approach was very quick and clear. We enjoyed his technique a lot. At the end anterior plating was done. Following the

camera we had a perfect view of the surgery area. We got detailed introduction in every step of the surgery.

C-arm check, he taught us how we could place the plate on the central line by keeping the face right anteriorly, without turning towards the right site. It would help you to place the plate with the reference from nose.



The third case was C4-5-6-7-T1 central cord compression, previous ACDF C7/Th1. Decision was posterior laminectomy of C7/T1 with posterior fusion using pedicle screws and C4/5, C5/6, C6/7 laminoplasty (single door).



It was evening already when we left the hospital and were invited for a dinner in a very beautiful traditional Korean restaurant. Professor Kim and Professor Lee came and welcome us. It was unforgettable experience of local traditions.



3/15, 2016 Day 3 in Seoul

7 o'clock we attended the meeting of orthopedic department, Joint arthroplasty unit. Seniors, students and residents are participating in this educational session. Topic was "Radiographic assessment of the hip" After meeting joined the first operation of Professor Kim Ki-Tack. It was a case of thoracic kyphosis in ankylosing spondylitis with Anderson lesion T9/T10. Patient suffered from severe back pain without neurologic deficit. Professor Kim explained that the etiology of Anderson lesion and treatment possibilities.



Professor was going to do the posterior vertebral column resection (PVCR) with posterior spinal fixation T7-L3. (Three level above and below) It was a tough work because there was a lot of bleeding; nevertheless, Professor Kim did surgery so smoothly and fast. Calm mood and quick movements impressed all of us. He explained us the difference between pedicle subtraction osteotomy (PSO) and PVCR. In thoracic level, PVCR preserved the middle column and prevented the cord impingement compared with PSO.

In the afternoon, the professor Kim did another operation of herniated disc in L4-5. We could observe surgery steps due to microscope camera.



The final operation by Professor Kim came out in another operation room. The patient underwent 2<sup>nd</sup> stage surgery with Corpectomy L1/L2 and posterior instrumentation T9-S1 with iliac screws. Posterior instrumentation was done for a week ago.



3/16, 2016 Day 4 in Seoul

During the morning meeting, we all four fellows introduced ourselves with 10-15 min power point presentation each. Later we attended PLIF surgery with Professor Kim. Before the surgery, Professor Kim taught us the indication of surgery he had. He always tries several times of injection and then he will arrange operation if the patient still has intolerable symptoms. We also had a good discussion about spinal instability, diagnostics, and treatment guidelines. Professor Kim always did the posterior and interbody fusion when that patient has spondylolisthesis with spinal stenosis.

The second operation was the PSO for ankylosing spondylitis with segmental kyphotic deformity. The pedical subtraction osteotomy was done at the apex level. The patient had a thorocolumbar kyphotic deformity with apex at L1. After the osteotomy, he used the lateral connector to compression above and below segment. He taught us that whenever treating scoliotic or kyphotic patient, he always used lateral connector to help distraction or compression procedure. Otherwise, the pedicle screws might be loosen, because the bone condition would be osteoporotic in this kind of patients.

In the evening, we had dinner with all professors from orthopedic department. We went to downtown and visit very famous Chinese restaurant. It was so delicious and beautiful.



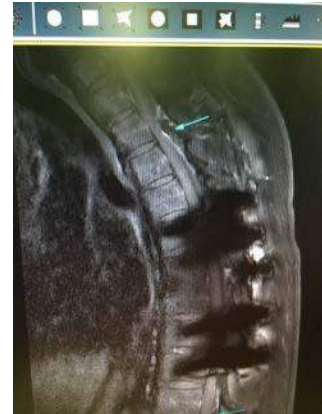
3/17, 2016 Day 5 in Seoul

5<sup>th</sup> day was a free day. Prof. Kim arranged an excursion. After that, we went to the Imjingak to feel the history about North Korea and South Korea.



3/18, 2016 Day 6 in Seoul

We attended the morning meeting at 7:00 a.m. held by trauma unit. Then we went to operation department to join the final surgery in Seoul. Professor Lee had several cases in cervicothoracic area. One patient had T5-T9 posterior fusion previously. But he had a diffuse ossification of posterior longitudinal ligament. Especially Above the previous fusion level - ossification with adhesion of cord. Professor Lee decided to perform T1-3 posterior lateral fusion with pedicle screws and laminectomy. He showed us techniques to put in the pedicle screws in upper thoracic area. We learned how to estimate the screw position from C-arm check and



we practiced together. After the surgery, he recommended us to attend the spine symposium held in Soon Chun Hyang hospital. The topic of the symposium was controversies in spine surgery. Actually we could not understand much about what they were talking. But we enjoyed the moment because that was a specific opportunity to attend Korean Spine Meeting. In the evening, Professor Lee invited us to the Italian restaurant. We had a pleasant time and delicious dinner. We remember Professor Lee as a gentlemen with impeccable attitude.





**Second Centre**  
**Singapore National University Hospital**  
**Duration – 20 March- 28 March 2016**  
**Host – Prof . Hee Kit Wong, Assoc Prof . Gabriel Liu**



**3/21 Day 2 in Singapore**

We attended the morning meeting at 7 o'clock. We made a presentation about our scientific studies and ourselves. It was a honor to speak in from of professor Wong Hee-Kit and his colleagues. After that, we took the group photo and had a small meeting in the office room. The Office tower standing on the hill and that makes the top building of this area with amazing panoramic view through windows.



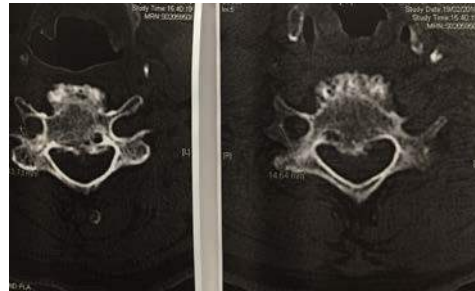
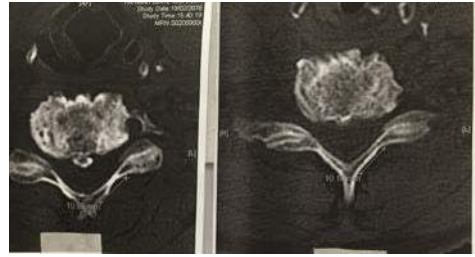
Dr. Lau introduced us to the university hospital and we joined operation with Dr. John who was doing MIS lumbar TLIF. It was our first time to see the detail procedure of lumbar MIS TLIF.

The case was L4/5 spondylolisthesis with spinal stenosis, and the disc height was limited. He had done the laminectomy first and done the TLIF. Final pedicle screws were inserted percutaneously.





Marina Bay with Dr. Lau.



The second surgery was done by Dr. Dennis and professor Wong as supervisor. Patient had OPLL in C3-C7 area. Professor Wong discussed with us about what kind of surgery could be chosen. It seemed anterior corpectomy would induce long level surgery and make the cervical sagittal alignment worse.

Posterior procedure works but osteoporosis of bone should be considered. If the bone was not such osteoporotic, posterior fusion with lateral mass screws and decompression could be chosen.

Otherwise, laminoplasty should be the option. In this case, Dr. Dennis did the posterior laminectomy from C3-C7

And fusion with lateral mass screws. At that time, Professor Wong talked about the story of “Goldilocks and three bears”. It means that a surgeon should choose things just right. Professor Gabriel Liu operated the final case. He also did the MIS TLIF. But he did the percutaneous pinning and put the wires there first. He also used the microscope and tubular dilator system. We learned the lateral recess decompression (including inferior laminectomy and superior articular process). After a long day we enjoyed traditional dinner at

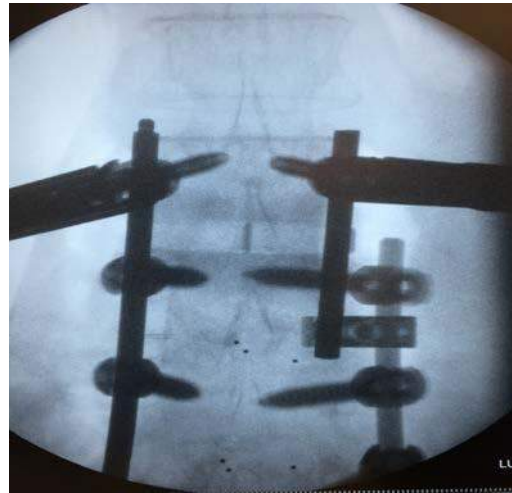
3/22, 2016 Day 3 in Singapore

There was another MIS surgery by Prof. Wong. Older patient with previously instrumented fusion L3-S1. Current problem was ALD L2/L3. Vacuum disc changes and retrolisthesis. Since patient had thoracic kyphosis problem, Prof. Wong worried about the severity of muscle weakness. He decided to respect the muscle situation and planned not to make too much muscle damage by using MIS.

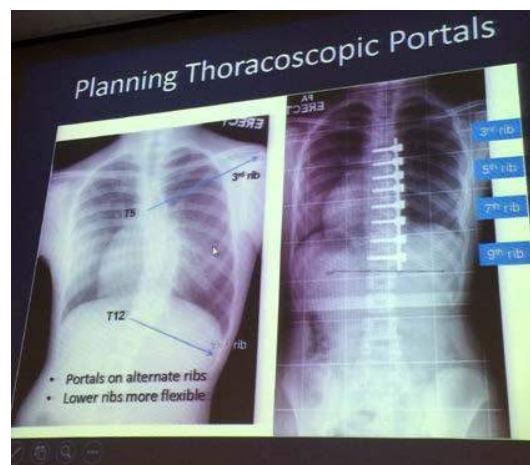


OLIF for L2/3 (adjacent level) was done first. Then patient was turned to prone to perform the MIS posterior fusion. With the patient lateral position, marker was made under the fluoroscope view. He drew the 12<sup>th</sup> rib and the center of disc. He explained to us why the OLIF was not easy to be successful and might pool of danger. Usually the patient would be put more tilt than central for the easier way to approach. This position made the direction of screw become easier to

touch the dura. He took out the 12<sup>th</sup> rib first and entered the retroperitoneal space and identify the psoas muscle. Cage was applied on L2/3 level.



After the surgery, prof. Wong made a lecture for us about thoracoscopic treatment of idiopathic scoliosis. Direct Convex site (usual right site) and selected Lenke 1 was the indication for this treatment. One lung lumen should be approached.



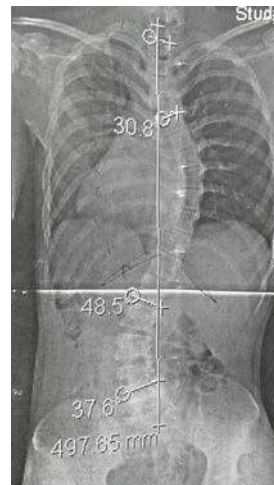
Same evening we attend operation performed by Dr. Naresh Kumar. He did the C5/6 ADR.



Same evening we enjoyed traditional Singapore kitchen (which was mix of Thai, Mala, Vietnam, Taiwan, Chinese).

3/23, 2016 Day 4 in Singapore

In the morning, we visited the Singapore General Hospital and attended the morning meeting. This hospital was held in 1821 and was the first hospital in Singapore.



Afternoon we went back to NUH and attended operation with Prf. Gabriel Liu. The first operation was scoliosis. This case was diagnosed as Lenke 2 BN. Due to the curve less reduction potential on the concave site, Dr. Liu decided to put on whole pedicle screws on the concave site. He explained how he was going to reduce the curve. He used the canti-level method. Finally, he put on the tube on the thoracic screws and locked the button screws and then de-rotated the thoracic screws.

After scoliosis surgery, he did C5/6 arthroplasty. He recommended patient to use the arthroplasty because the patient had upper adjacent C45 degeneration. He wanted to avoid more stress raised on the upper adjacent level. Finally, we ate a grateful dinner at Marina Bay Sands.

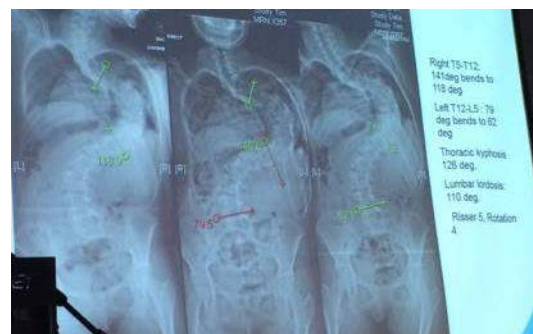
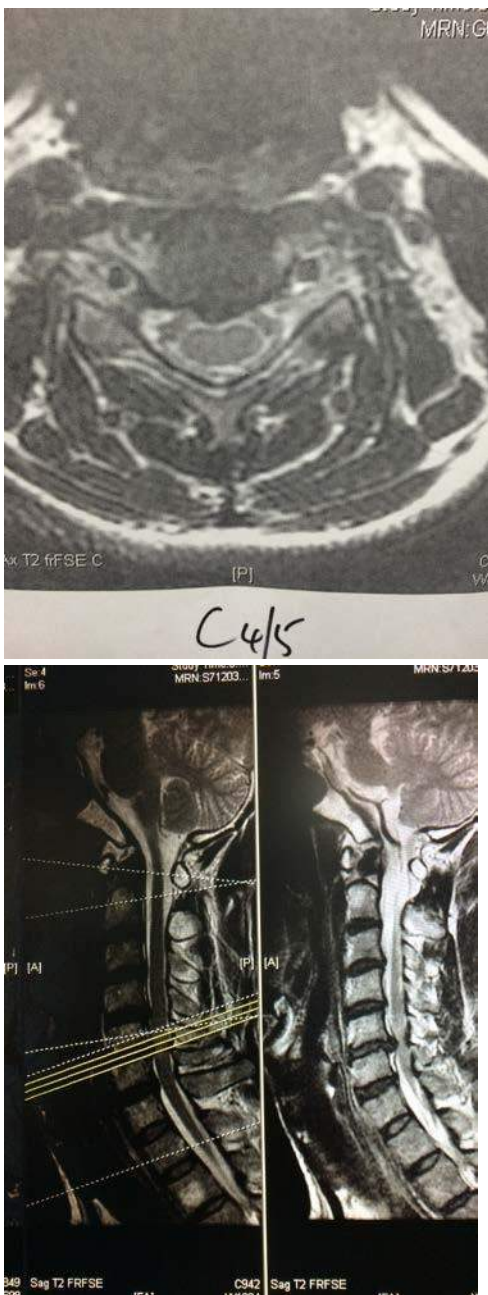
3/24, 2016 Day 5 in Singapore

In the morning, we attended the spine conference meeting. The spine team held this meeting for discussing the cases done in this week. Meanwhile, the cases which are scheduled be done in next week are discussed also.

3/25, 2016 Day 6 in Singapore

Today is the Easter holiday.

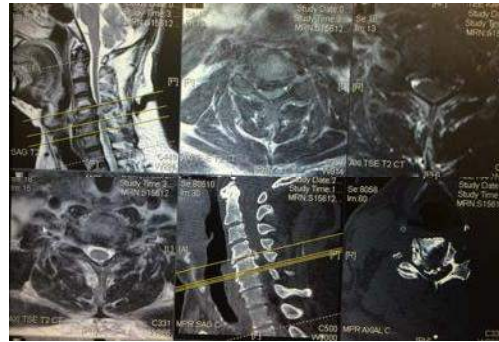
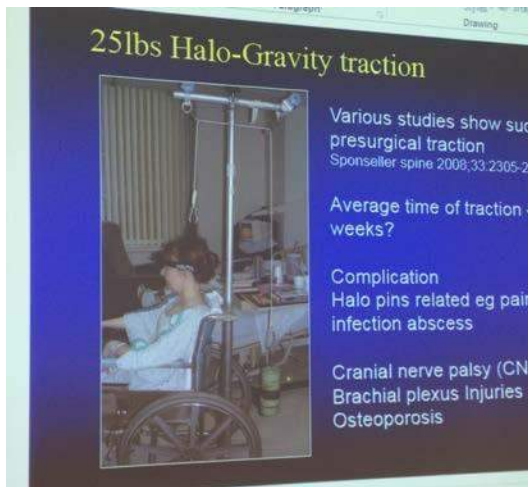
3/26, 2016 Day 7 in Singapore On Saturday morning, we attended the conference at NUH. This conference was held for education of orthopedic residents. Dr. Lau presented the case history and asked the training resident some questions. This way of education program was held every Saturday.



We saw one case of severe thoracic scoliosis, and how pre-operation traction was made. The halo-traction was used first and definitive fixation was performed after two weeks of traction. The aim of

traction was to relieve the stiffness of facet joint and soft tissue tension. This procedure will help the soft tissue to elongate and prevent the nerve tissue damage.

noted about the C4/5 edge cord bulging degree and then upper C3 dome laminectomy was needed. Prof. Wong allowed us to scrub and join the operation.



In the night 23:00, we took the flight to Melbourne to attend APSS meeting.

Day 3/28, Day 9 in Singapore

In the morning, we attended the operation with Prof. Wong. This was a case of C4/5, C5/6, C6/7 OPLL with myelopathy. Prof. Wong decided to perform laminoplasty. The laminoplasty was aimed to provide adequate decompression. However, caution was

**Attending 19<sup>TH</sup> ASIA PACIFIC ORTHOPAEDIC ASSOCIATION CONGRESS  
Venue: Melbourne Convention Centre, Australia**



Melbourne is one of the great multicultural cities of the world and is a significant meeting place and we were invited to attend the conference at the Melbourne Convention Centre. In the conferences, we attended mainly spine sections and learnt a great deal from the experts around the region and worldwide.

**Day 1, 29th March, 2016**

At welcome reception party, we met the doctors in NUHS again.

**Day 2, 30th March, 2016**

Opening ceremony  
Debates on spondylolisthesis  
Plenary lectures  
Keynote lecture : Spine surgery in the Asia-Pacific region : the past, present and future  
The ageing spine-when to intervene and when not to  
APSS Depuy Synthes fellowship presentations APSS 2016 Clinical and Travelling fellows

**Day 3, 31th March, 2016**

Spinal Tumors free papers : Jonathan Tan and Kimberly-Anne Tan (NUHS) made presentations.

Plenary lectures : Prof. Hee Kit Wong (NUHS) gave a lecture about restoring sagittal balance in spine surgery.

Cervical spine trauma : Associate Prof. Gabriel Liu (NUHS) gave a lecture about updates on management of spinal cord trauma.

Free papers

At night, there was a banquet dinner at the Melbourne Convention Centre.

**Day 4, 1th April, 2016**

Free papers

Plenary Lectures

Spine symposium : early onset scoliosis and juvenile idiopathic scoliosis

Prof. Kuniyoshi Abumi gave us certificate of APSS Travelling Fellowship.

Closing ceremony



This is an absolute great opportunity for young spine surgeon to open their sight for spine surgery technique and develop international friendship. We want to say thank you for those who arranged this comfortable journey. We spend three weeks and help each other in any kind of way. We felt comfortable in this fellowship journey. Because the persons we met are all passionate and allowed us to enjoy their schedule. In Seoul, we learned the surgery technique in operation room, eating/drinking manner in restaurants, Korean respect manner in morning meeting/conference meeting. In Singapore, we learned the efficiency of team work in operation room, education program in resident education program, the culture of food and people who immigrate into Singapore. This journey also provides the chance for us to communicate with other

young spine surgeons from other country. We discuss about how we trained, how we think for patient and how we pay attention to patient's problem, and how we plan. Of course, every country has own condition and unique think for treating patients. However, we all honestly answered our opinion and what situation we had. This was a great journey because of this communication.

We would like to thanks APSS members for giving us the chance and helping us throughout the fellowship program in various countries. We have to say special thanks to Jenny Wong for managing the all trip plan and she was always keeping in touch throughout the fellowship.

Attached Below is our log book.

No	Date	Procedure	Surgeon	Hospital
1	14/03/2016	Foraminotomy(C6/7)	Prof. Lee	KHUH
2	14/03/2016	ACDF(C4/5/6)	Prof. Lee	KHUH
3	14/03/2016	C4-6 laminoplasty + C7 laminectomy C3,T1 partial laminectomy + C7/T1 PF	Prof. Lee	KHUH
4	15/03/2016	PVCR(T10/11)+PF(T7-L2)	Prof. Kim	KHUH
5	15/03/2016	Dicectomy(L4/5)	Prof. Kim	KHUH
6	15/03/2016	Corpectomy (L1-2)+ PF (T9-S2)	Prof. Kim	KHUH
7	15/03/2016	Skip laminoplasty (C4-6)	Prof. Lee	KHUH
8	16/03/2016	TLIF(L4/5)	Prof. Kim	KHUH
9	16/03/2016	PSO(L1) + PF(T10-L4)	Prof. Kim	KHUH
10	18/03/2016	Laminectomy(T1-2) +PF(T1-3)	Prof. Lee	KHUH
11	21/03/2016	MIS TLIF (L4/5)	Dr. Ruiz	NUHS
12	21/03/2016	C laminectomy + PF	Dr. Hey	NUHS
13	21/03/2016	TLIF (L4/5)	Dr. Hey	NUHS
14	22/03/2016	ALIF + Posterior screw fixation	Prof. Won	NUHS
15	23/03/2016	Posterior instrumentation and fusion	A/Prof. Liu	NUHS
16	23/03/2016	ACDR	A/Prof. Liu	NUHS
17	24/03/2016	Microdiscectomy	Dr. Lau	NUHS
18	28/03/2016	C laminoplasty	Dr. Lau	NUHS
19	28/03/2016	C laminoplasty	Dr. Hey	NUHS
20	28/03/2016	C laminoplasty	A/Prof. Liu	NUHS