



Asia Pacific Spine Society (APSS)

(Spine Section of APOA)

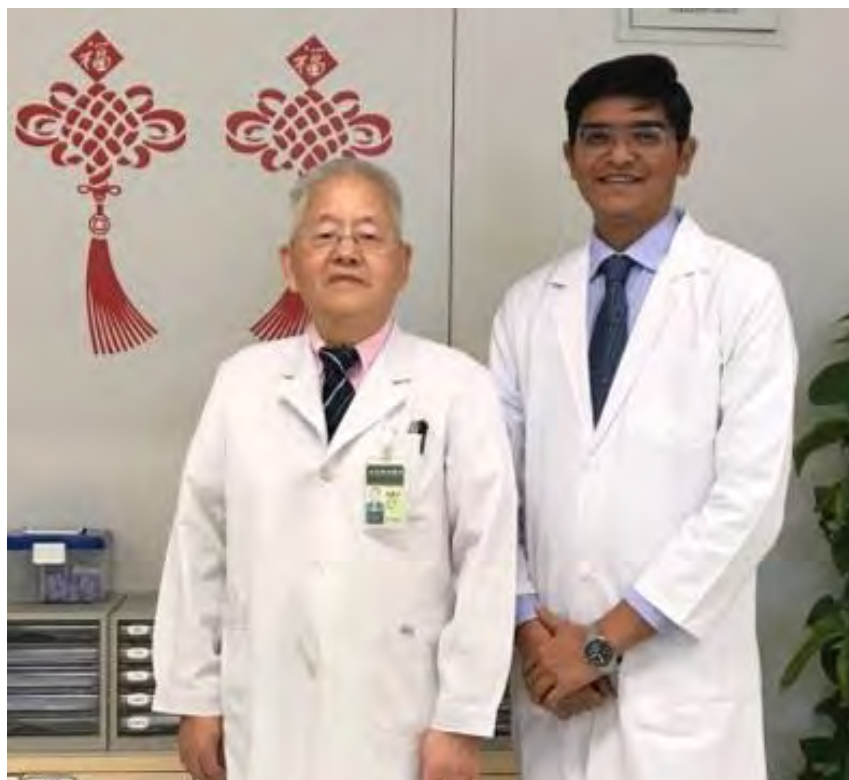
APSS DEPUY SYNTHES SPINE CLINICAL FELLOWSHIP REPORT

4th Sept 2017 – 21st Sept 2017

Fellow: **Dr Ankit S. Patel**

ASSI Spine Surgery Fellow, Department of Spine Surgery, Bombay Hospital & Medical Research Center, Mumbai, India

Host: Prof Guixing Qiu, Prof Jianxong Shen, Prof Jianguo Zhang
Peking Union Medical College Hospital
Chinese Academy of Medical Sciences
Beijing, China





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Introduction

“What the mind does not know, the eyes do not see”. This Fellowship makes true sense of the saying. The Asia Pacific Orthopaedic Association (APOA)/ Asia Pacific Spine Society (APSS) – DePuy Synthes Clinical Fellowship 2017 for myself was scheduled from 4th September to 21st September 2017. I was elated to get the invitation letter for this fellowship and grabbed the opportunity with both hands.

Overseas Fellowship was new to me and visiting China, especially Beijing made me excited. China being a neighbour was the best choice for further learning and APSS provided me an opportunity to fulfil that. Being in the early phase of developing skills as a Spine Surgeon this was the best avenue that was going to provide me with an intense learning session spread over 3 weeks, exposing me to different practices and also cultures.

I was extremely to know about the centre, the stature the Department of Orthopaedics at PUMCH had attained over the past decades and the Spine Group that was propelling it to newer heights at its core. Most importantly I met my role models for life, Dr Qui, Dr Shen, Dr Zhang, Dr Tian and other members of the huge spine team including the residents at PUMCH, Department of Orthopaedics.

My training and practice here at Bombay Hospital, Mumbai and other previously attached centres over the past six years had given ample comprehensive exposure to the subspecialty of Spine Surgery. But as the above saying goes, one needs to constantly be in a learning mode throughout life and hence I happened to apply for this prestigious APSS DePuy Clinical Fellowship. I first came to know about it when I happened to meet the President of APSS, Prof Dr Kuniyoshi Abumi in Ahmedabad when he taught us about cervical spine at an operative course.

My Fellowship schedule was very well organised and I sincerely thank Jenny & Mrs Guo (PUMCH) helping me out to prepare and abide by the schedule. The Program Book shared by the Host centre helped a lot to plan out as I knew beforehand I would be observing a huge amount of deformity work, a domain I want to be especially skilled in. I also had the opportunity to attend the Spine Society of Beijing Meeting and share my views over the excellent rare cases being discussed. To wind-up I had a gamut of presentations and posters at the Combined APSS-APPOS congress in Goa, India alongside my Fellowship Report Presentation too.





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Fellowship Program

I arrived at the Beijing Capital International Airport (BCIA) via Hong Kong from Mumbai on 4th Sept and Dr Derong Xu received me assisting me to the Hotel Xinhai Jinjiang, Dongcheng District. It was a comfortable place with the PUMCH being just 15 min walk away. I really liked the idea of reaching the hospital on a bi-cycle which I did many times during my stay.

The daily program book had been shared with me beforehand which gave a glimpse of the working of the department and understand it better.

Time	Monday	Tuesday	Wednesday	Thursday	Friday
7.00 am 7.45 am	Morning Conference Seminar Room (Dr Shen)	Morning Conference Seminar Room (Dr Zhang)	Morning Conference Seminar Room (Dr Shen)	Journal Club Morning Conference Seminar Room (Dr Qui)	Morning Conference Seminar Room (Dr Shen)
8.00 am	OR Level 3 Surgical Building	OR Level 3 Surgical Building	OR Level 3 Surgical Building	Grand Round Prof. Xisheng Weng Prof. Jianxiong Shen	OR Level 3 Surgical Building
10.00 am	Prof. Jianxiong Shen	Prof. Yipeng Wang	Prof. Ye Tian	Presentation by APSS Fellow	Prof. Yipeng Wang Associate Prof. Keyi Yu
2.00 pm	Prof. Hong Zhao	Prof. Jianguo Zhang	Prof. Jianhua Hu	Level 1, Outpatient Clinic building Prof. Ye Tian	Prof. Hong Zhao Prof. Ye Tian
	Prof. Yu Zhao	Prof. Yu Zhao	Prof. Jianguo Zhang		Prof. Jianhua Hu Prof. Shugang Li

The department welcomed my visit during the morning rounds and I was given an opportunity to introduce myself to the audience. This was followed by my formal induction into the routine which was as follows over the next couple weeks –

Week 1 (5-10 Sept)

Day 1, 5 Sept:

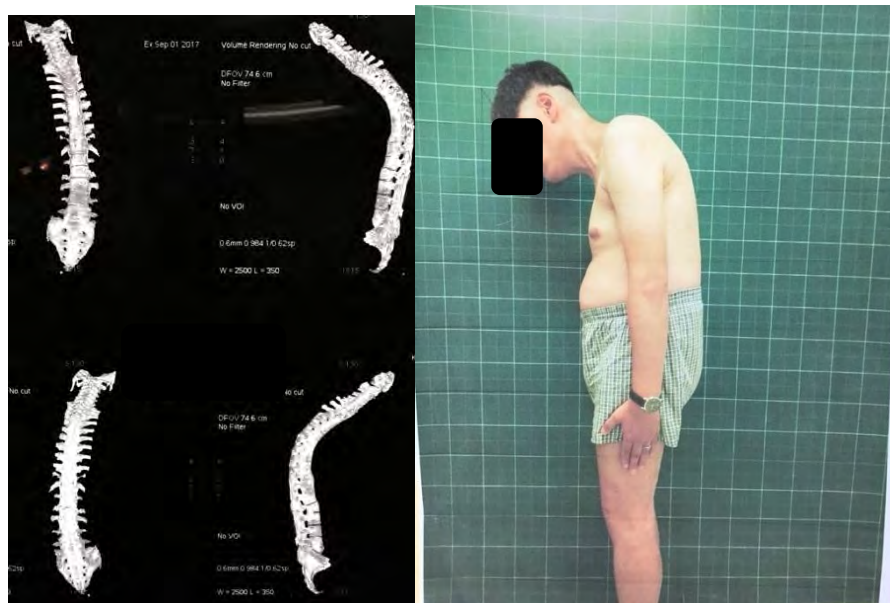
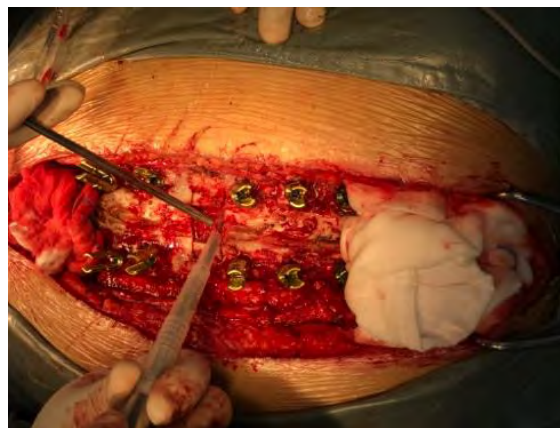
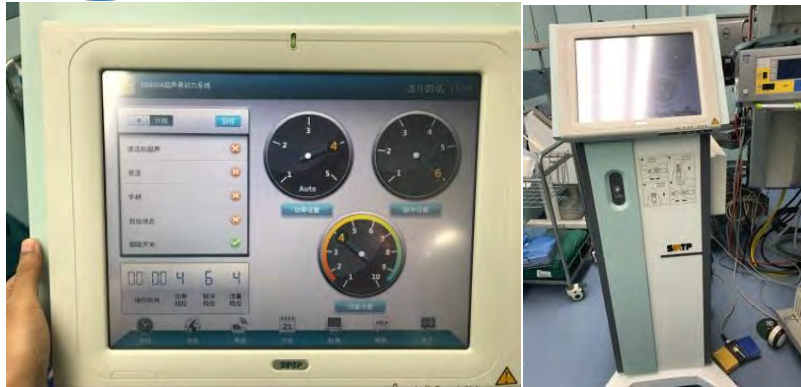
I was assigned to follow the grand rounds with Dr Jianguo Zhang who keeps special interest in Congenital Scoliosis and he introduced me to all the indoor patients under his care with short history's and discussion on their imaging findings as well as the plan for their treatment. At 8 am Dr Wang Shengru, attending surgeon with Dr Zhang led me to the OR Complex, myself understanding the working and layout of the massive 3 storied complex. It took some time but I was amazed by the sheer size, fast turn-around of successive surgeries and utmost precision of working they had achieved in a university hospital which made them the countries best for so many years in the past!

My surgical day started with observation of a case of 32 Year Male previously operated for Ankylosing Spondylitis with PSO at L2 now having Proximal Junctional Kyphosis (PJK) at D12. The plan was to do corrective PSO at D5 and D12 with long segment fusion reaching D2. Dr Zhang displayed excellent surgical demonstration of the technique of PSO with detailed description of important steps taking breaks for me to understand which he did very well in English! Also got to see the functioning of Ultrasonic Bone Scalpel which tremendously improves the precision, speed and safety of working thus reducing blood loss and operative times.



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The day ended at 10 pm after another two cases of Multilevel Lumbar decompression and Postero-lateral Fixation by Dr Zhang and his team. He explained his concept of Intra-facetral fusion and the technique which he has mastered over the years.

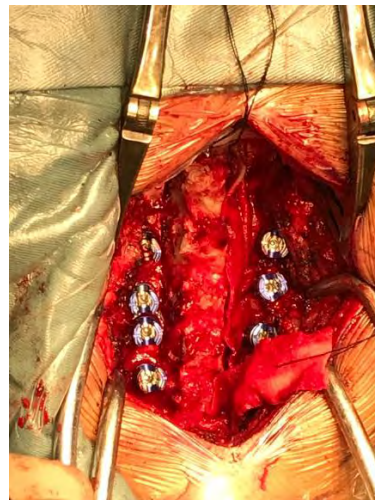
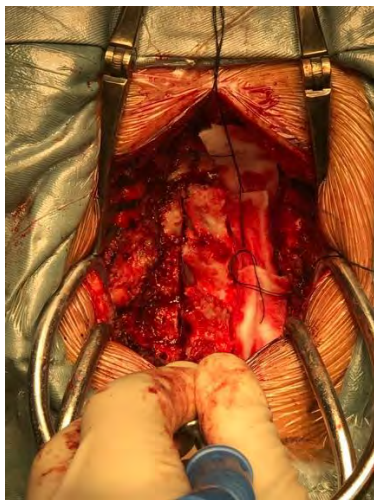


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Day 2, 6th Sept:

Dr Tian Ye, senior Cervical spine expert was in-charge of me after the morning rounds and ward visit. They had 4 cases lined-up for the day which I was briefed about by Chief Resident Dr Peng Kunming and Dr Zhai. Dr Tian demonstrated a simple Single level ACDF C5-6 followed by a Laminoplasty which I was new for me. On knowing this he made sure to make me understand the steps of the whole procedure and also shared surgical pearls to achieve successful single door Laminoplasty. A day well spent learning new procedures and revising the ones I already did at my centre.



Day 3, Sept 7th:

This is the Grand Rounds day where the day starts early at 7 am with a Journal Club. Two topics under research or published are presented by the department members and discussed upon over a period of 45 mins. The session was very interesting with the Neuro-physiologist Dr Wang who was the Intra-operative Neuro-monitoring (IONM) expert discussed about the trends of signal changes he has observed in cases which suffered post-op neuro-deficits. This was followed by Arthroplasty Junior consultant presenting about the THR cases done at PUMCH.

The Grand Rounds follow from 9 am onwards which was an impressive idea for me as that discusses all the indoor patients in the orthopaedic department and gives a quick review of the whole week gone-by. The Spine group started first and was an intense learning time till 12 pm.

After the Grand Rounds I was free for the day as no OR is scheduled on Thursday which meant I had the time to explore the campus and know more about the First Western Medicine centre of China. Dr Feng Chen came forward to guide me along and I had a nice experience learning about the various sections of PUMCH and visit the PUMC old Building.



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Day 4, Sept 8th:

After morning rounds, Dr Li Shugang had a patient posted for Kyphosis correction who had a healed L1 fracture with segmental Kyphosis. An Smith Peterson Osteotomy (SPO) was utilised to gradually correct the deformity and restore the Sagittal Alignment.

Dr Tian Ye, in another OR had a young female with Os Odontoideum who had Atlanto-Axial Instability (AAI) who suffered from myelopathy of recent onset. He had planned a Posterior stabilisation with Goel-Harms Technique of C1-C2 screw-rod construct fixation. A demonstration of meticulous patient positioning, pre-surgical planning, clean dissection and free-hand anatomic screw placement followed which enriched my knowledge further.

Two more cases were observed by myself of Lumbar canal Stenosis which were treated by TLIF and PLF respectively.

On the occasion of coming Chinese **Teachers Day** on 10th September I was invited by Prof Tian for a dinner with his group where I understood for the first time the traditional Chinese way of family dinner, customs and enjoyed specially cooked vegetarian versions of local delicacies! I became a family to the PUMC now!





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Day 5-6: Weekend

Explored the Great wall along with Dr Li and Dr who were perfect companions during the whole expedition. Felt proud to Become a “*National Hero*” as said by Mao!



2nd Week

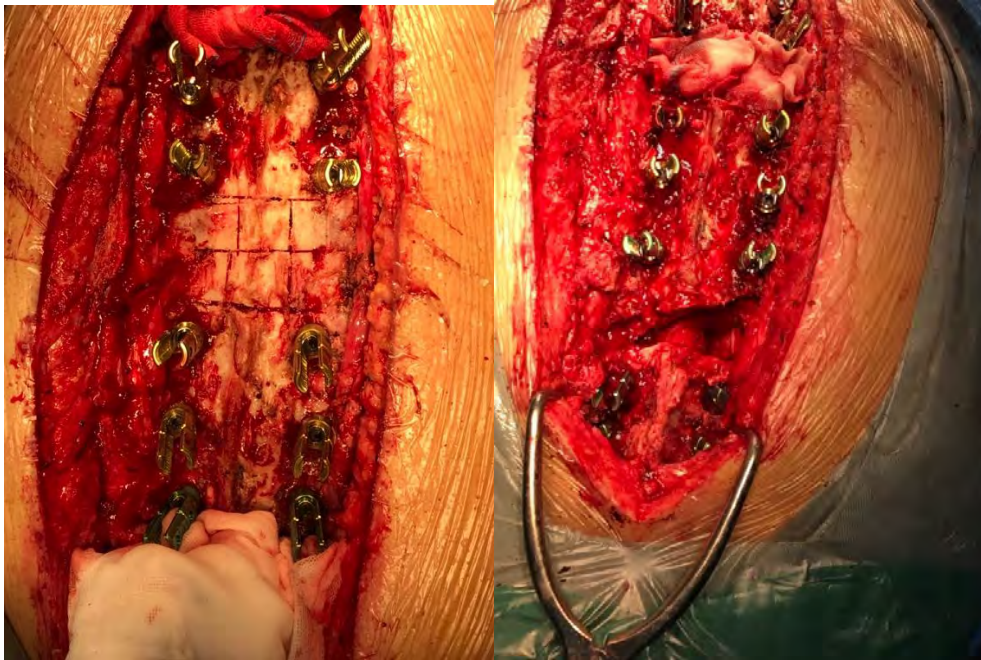
Day 8, 11th Sept:

Learnt the art of Prone Positioning from Dr Tian Ye for his cases of Laminoplasty, as well as Dr Zhang for the Ankylosing Spondylitis Kyphotic Deformity. Understanding about the role of Asymmetric PSO for simultaneous coronal-sagittal correction was enlightening and watching the whole procedure done with flawless use of Bone Saw and Osteotomes was quite helpful. The “Haemonetics” cell saver comes to the rescue in such three-column osteotomies where blood loss is somewhat inevitable.



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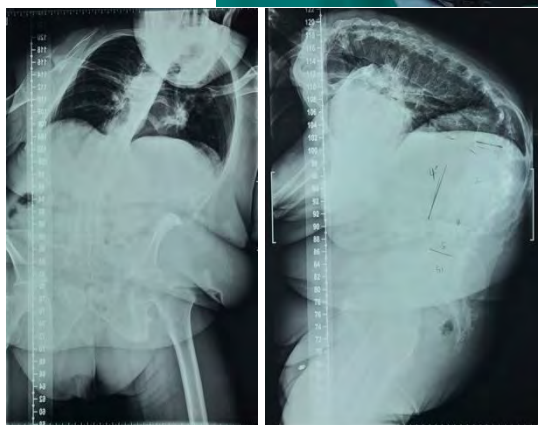
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Day 8, 12th Sept:

Day starts with a ACCF C5 Corpectomy, followed by a Severe Kyphosis in a young male with Ankylosing Spondylitis. He was treated with PSO and Partial sagittal correction to realign his CBVA to neutral. This is essential as the neck is stiff too. This was demonstrated by Chief Prof Shen.



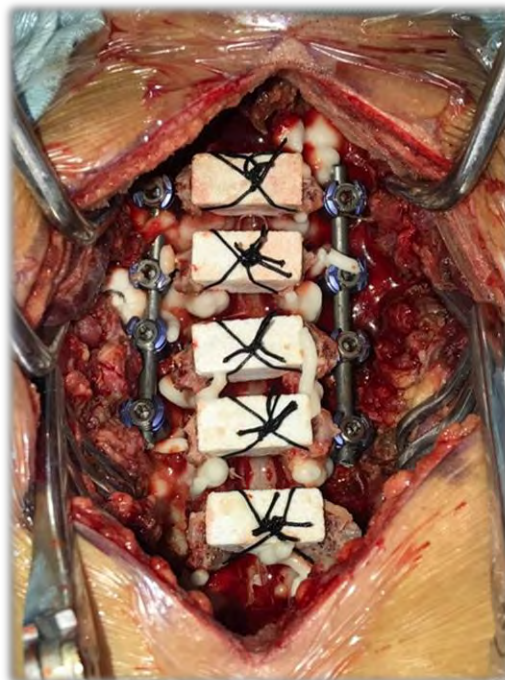


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Day 9, 13th Sept:

After the routine morning rounds there was a discussion about some postoperative xrays where I got an opportunity to clear some of my doubts. Then it was time to head to the OR. A middle-aged male with early signs of Myelopathy was posted for Double-door Laminoplasty (Kurokawa Technique). Dr Tian paid special attention that I understand the intricacies of the procedure as it was totally new to me. I came out learned at the end and had a healthy discussion about the variants and their pros-cons.



Day 10, 14th Sept:

This was Thursday and a non-operative day. The day started with Journal Club with an informative presentation by the Neurophysiologist Dr Wang about Intra-operative Neuromonitoring (IONM). Followed by weekly Grand Rounds and a Small break. I was given an opportunity to present two research presentations which I had worked upon at my centre in Bombay Hospital, Mumbai. The topics presented were –

1. Decision Making in Degenerative Spondylolisthesis – The DS Scoring System for Stand-alone Decompression vs. Fusion
2. Stand-alone MIS TAS in Mobile C1-C2 Atlanto-axial Instability.

Both the talks garnered applause and there was a healthy discussion which continued over lunch too.



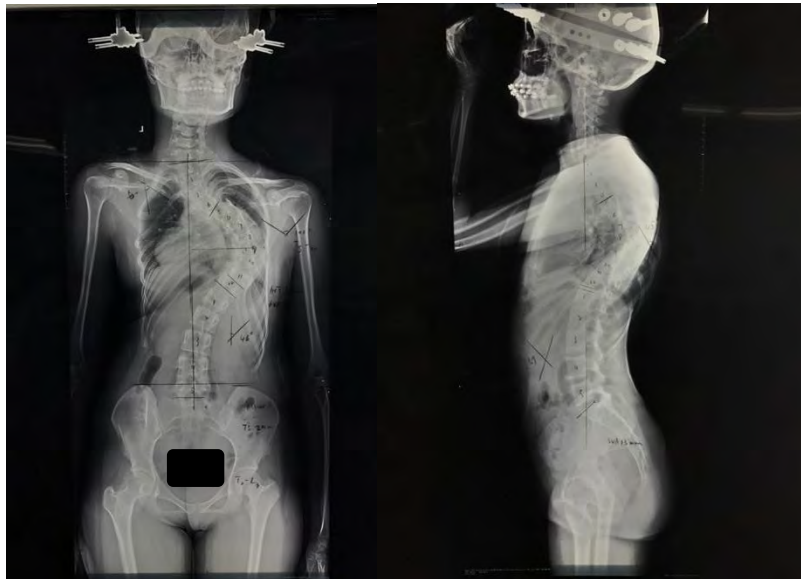
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Sept 15th -20th:

The same routine continued with multiple points of learning and interaction happening throughout the day. The busy surgical schedule kept us all engrossed and it was time to bid adieu to the great Spine Unit at PUMC.

Some important cases which were treated are-

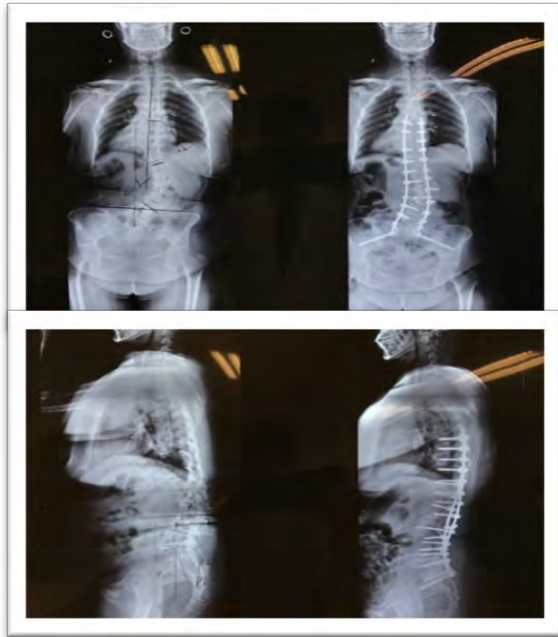


23 F AIS Neglected, Failed Halo Traction, Coronally-Sagittally
Balanced



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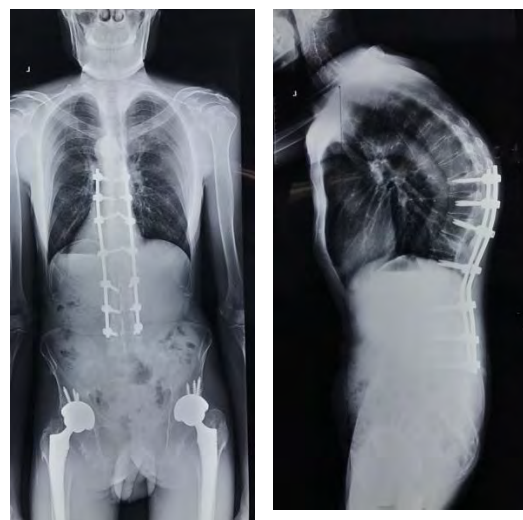
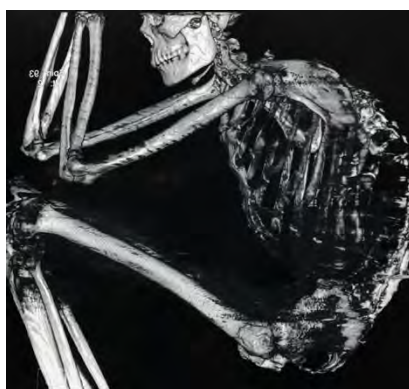
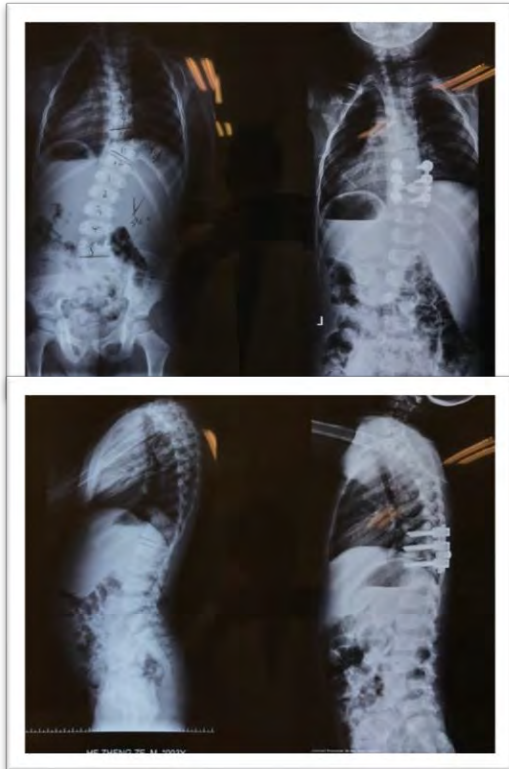
58 F Degen. Scoliosis Claudication + LBP



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3 Yr M D10-11 Rt Hemi, Excision +
Bi-segmental Fixation



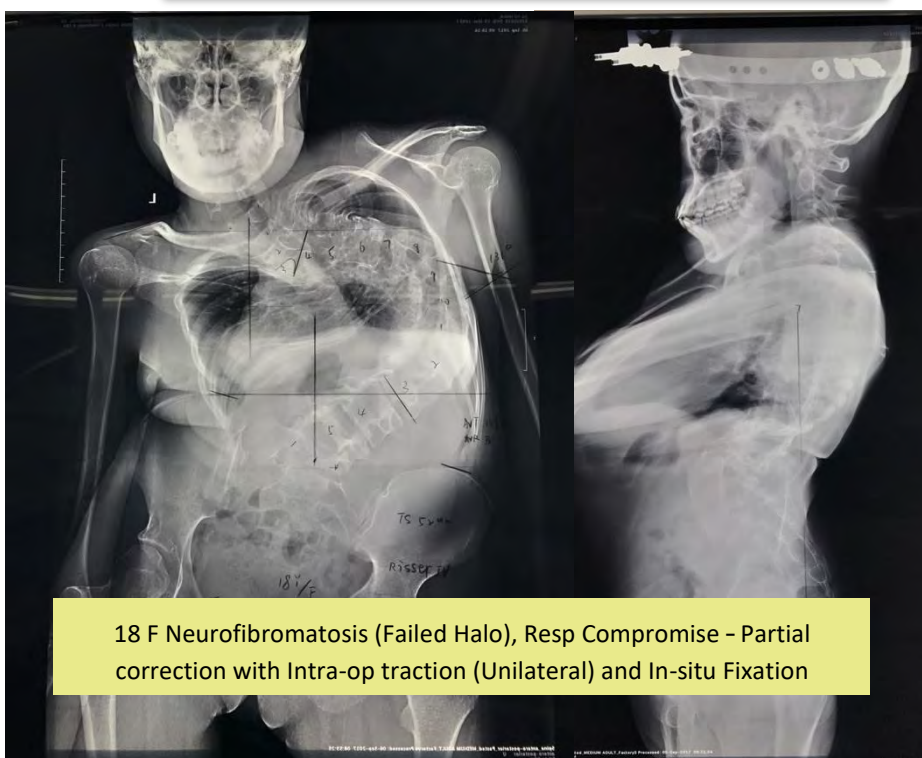
32 M Ankylosing Spondylitis, BI THR D9-L4 PSO D12 L2 - PJK - In-situ Extension
to D6

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17 F AIS T2-L4 PSF Facet Release Derotation



18 F Neurofibromatosis (Failed Halo), Resp Compromise – Partial correction with Intra-op traction (Unilateral) and In-situ Fixation



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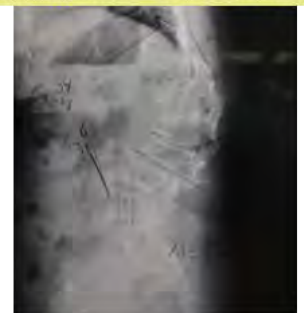
21 F Congenital Scoliosis D10-L4 PSF
Asym VCR



18 F Congenital Scoliosis Lt L3 Hemi,
D6 - Pelvis



32 F Ehlers-Danlos Syndrome LBP.
Lumbar Kyphosis – D10-L4 SPO L1 L2



Learning in the OR





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Thank You again, APSS DePuy Synthes, PUMC Department of Orthopaedics, Beijing. My dream of learning and sharing was fulfilled!





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LOG BOOK

Date	Age	Sex	Diagnosis	Procedure	Chief Surgeon	Myself	OR
05/09/17	32	M	Ankylosing Spondylitis PJK	PSO D5, D12 PSF T2-L1	Prof Zhang Jianguo	Observer	309
05/09/17	58	F	Lumbar Canal Stenosis	Decompression + PLF L3-L5	Prof Zhang Jianguo	Observer	309
05/09/17	67	M	Lumbar Canal Stenosis	Decompression + PLF L2-S1	Prof Zhang Jianguo	Observer	309
06/09/17	55	M	C5-6 DDD with Radiculopathy	ACCF C5	Prof Tian Ye	Observer	308
06/09/17	48	M	Multilevel Cervical DDD with Myelopathy	Single-Door Laminoplasty	Prof Tian Ye	Observer	308
06/09/17	59	F	Lumbar Canal Stenosis	Decompression + PLF L3-L5	Dr Yu Bin	Observer	310
06/09/17	42	M	Left C5 Radiculopathy	ACDF C4-5	Dr Hujian Hua	Observer	309
08/09/17	66	M	Lumbar Canal Stenosis	Decompression + PLF L4-S1	Prof Hong Zhao	Observer	310
08/09/17	56	F	Lumbar Canal Stenosis	TLIF L4-5	Prof Li Shugang	Observer	310
08/09/17	64	M	Healed L1 Fracture with Segmental Kyphosis	SPO Kyphosis correction, PSF PLF	Prof Li Shugang	Observer	210
08/09/17	28	F	Os Odontoideum with AAI	Posterior C1-2 Harms Procedure with decompression	Prof Tian Ye	2nd Assistant	308
11/09/17	60	F	Lumbar Canal Stenosis	Decompression + PLF L3-L5	Prof Hong Zhao	Observer	310
11/09/17	25	F	AIS	Deformity Correction PSF T4-L3	Prof Hong Zhao	Observer	310
11/09/17	64	M	Lumbar Canal Stenosis with L4-5 Grade 1 Listhesis	Decompression + PLF L3-L5	Prof Hong Zhao	Observer	310
11/09/17	16	F	AIS	Deformity Correction PSF T12-L3	Prof Zhang Jianguo	Observer	309
12/09/17	48	M	Operated L3-5 PSF with ASD	Extension of Fusion L1	Dr Zhao Yu	Observer	210
12/09/17	5	M	Congenital Scoliosis	D 10 Hemivertebra Excision Short Fixation	Prof Zhang Jianguo	2nd Assistant	309
12/09/17	13	F	AIS	Deformity Correction PSF T6-L4	Prof Zhang Jianguo	Observer	309
12/09/17	36	F	L4-5 HNP	PELD	Prof Yu Keyi	Observer	308
12/09/17	60	M	L3-4, L4-5 Spondylolisthesis Grade 1	L3-5 PSF	Prof Wang Yipeng	Observer	310
13/09/17	52	F	Degenerative Scoliosis with Lumbar Stenosis	Deformity Correction Decompression and Pelvis to T7 Fixation (S2AI Screws)	Prof Zhang Jianguo	Observer	309
13/09/17	12	AIS	AIS	Deformity Correction PSF T2-L3	Prof Shen Jianxiong	1st Assistant	310
13/09/17	32	M	Ankylosing SpondylitisAnderson Lesion	PSF TL	Prof Shen Jianxiong	1st Assistant	310
13/09/17	3	M	Hemivertebra D11 Congenital Scoliosis	Hemivertebra Excision	Prof Zhang Jianguo	Observer	309
15/09/17	48	M	L4-5 HNP	PELD	Prof Yu Keyi	Observer	311
15/09/17	15	F	AIS	Deformity Correction PSF T4-L3	Prof Hong Zhao	Observer	310
15/09/17	46	M	C3-6 DDD	Double Door Laminoplasty- Kurokawa	Prof Tian Ye	1st Assistant	308
18/09/17	18	F	Neurofibromatosis Scoliosis Thoracic	Deformity CorrectionT2-L3	Prof Shen Jianxiong	1st Assistant	308
18/09/17	38	M	Ankylosing Spondylitis PJK D9	Extension of Fixation to D6	Prof Shen Jianxiong	1st Assistant	308
19/09/17	7	M	EOS short segment unilateral fusion with implant failure & PJK	Implant removal, Kyphosis correction Fixation D3-D11	Prof Zhang Jianguo	1st Assistant	309
19/09/17	12	F	Congenital Scoliosis TL with Kyphosis	T11-Pelvis Fixation & Deformity Correction	Prof Zhang Jianguo	1st Assistant	309
19/09/17	50	M	Distal Junctional Failure - D11-L5 PSF with Left L5 pedicle failure	Extension of Fixation to Sacrum. L5 pedicle inferior wall broken	Prof Zhang Jianguo	Observer	309
20/09/17	6	M	EOS Growth Rod Fixation D4-L1	Lengthening of Bilateral Growth Rods	Prof Zhang Jianguo	Observer	309
20/09/17	24	F	Congenital Scoliosis TL with Kyphosis Hemivertebra D11-D10 Left	Hemivertebra ExcisionKyphosis Correction D8-L2	Prof Shen Jianxiong	Observer	310
20/09/17	34	F	TL Kyphosis in k/c/o Ehlers Danlos Syndrome	Kyphosis Correction by 2 level SP,O PSF D10-L4	Prof Shen Jianxiong	1st Assistant	310
20/09/17	29	F	Congenital Kyphoscoliosis Wedge Vertebra L3 Left side apex at L2-3 Disc Space	ASO / DBO L2-3 with PSF D6-S2AI Pelvis	Prof Zhang Jianguo	Observer	309
20/09/17	18	M	Marfan's Syndrome With TL AIS	D11-L4 PSF Deformity Correction	Prof Shen Jianxiong	Observer	310