

2024 APSS Medtronic Fellowship Report

Fellow: **Dr. Gyanendra shah**

MS(Ortho), National Academy of
Medical Sciences, National Trauma
Center Kathmandu, Nepal



Mentor: **Dr. Saumyajit Basu**

MS (Ortho), DNB(Ortho), FRCS(Ed)
Department of Spine Surgery



Host Center: Kothari Medical Center
Kolkata, India



Fellowship period: **1st July to September 2024 (90Days)**

Introduction:

I am extremely grateful to the Asia Pacific Spine Society (APSS) for the opportunity to receive a three-month Medtronic Fellowship at Kothari Medical Center in Kolkata, India, under the mentorship of Dr. Saumyajit Basu. A special thank you to my academic and surgical mentor, Dr. Basu, for his invaluable guidance and supervision throughout the fellowship.

I was deeply honored to join Dr. Basu at Kothari Medical Center for this training, where I had the privilege of learning from his extensive experience, not only in spine surgeries ranging from bracing for scoliosis to advanced robotic and deformity. degenerative surgeries but also from his vast knowledge as a senior clinician and academician with over 20 years of experience.

A heartfelt thank you to Ms. Jennifer Matthew and all the members of the APSS Secretariat for seamlessly coordinating the commencement of the fellowship. Their support and efforts ensured that everything went smoothly from the very beginning, making this opportunity possible.

Weekly Schedule:

Surgeons	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Dr. Saumyajit Basu	OT	OPD Ward round immediate postop-pre-op assessment and care	OT	OPD and ward round/Bed side case presentation	OT and Classes and lecture by Dr. S. Basu	Walking OPD Clinic	Free
Dr. Amitava Biswas	OPD	OT and Classes and lecture .	OPD/Ward round	OT	OPD/Ward Round	OPD/Ward round	
						Bed side Clinical presentation by Fellow and moderation by faculties.	
Scoliosis clinic	1 st week and 4 th week of every month.						

I was fortunate to have the opportunity to join surgeries alongside Dr. S. Basu and Dr. A. Biswas. Dr. S. Basu, in particular, always encouraged me to learn new techniques and took the time to explain every step during the procedures. The volume of surgeries was remarkable, with nearly seven major cases each day, including 10-12 selective nerve root blocks, most of which were degenerative and deformity cases. This center provided me with exposure to a wide variety of spine surgeries.

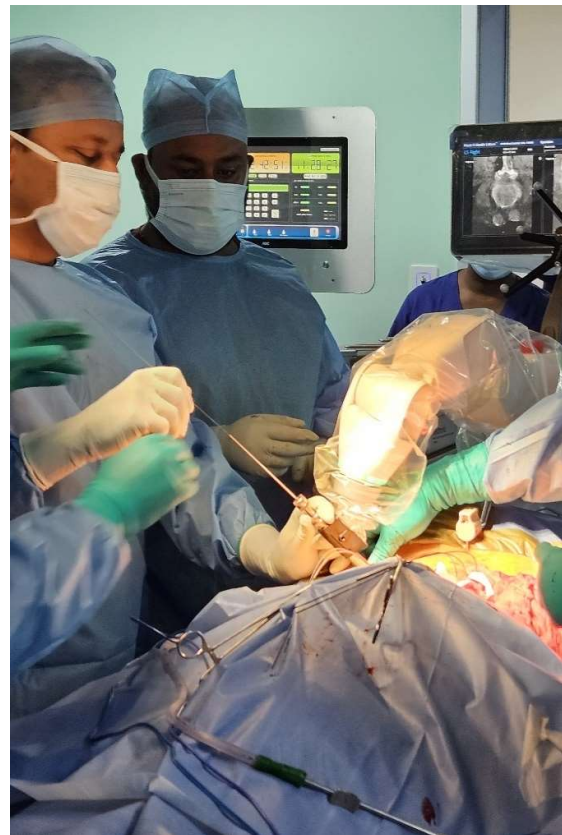
This is a fellowship with exposure to a high volume of scoliosis and kyphosis correction in adult and pediatric patients, TLIF, OLIF, MIS, Complex lumbar and cervical reconstructive surgery.

During my time here, I had an incredible experience learning, observing, and assisting in a wide range of spine surgeries, including scoliosis bracing, selective nerve root block, TP biopsy, kyphoplasty, vertebroplasty, endoscopic decompressions, MLD (microdiscectomy), multi-level TLIF (Transforaminal Lumbar Interbody Fusion), OLIF (Oblique lumbar Interbody fusion), MIS (minimally invasive surgery), ACDF (anterior cervical discectomy and fusion), laminoplasty, intra-dural tumor resections, and complex hybrid surgeries that involved both limited lumbar fusions and endoscopic decompressions for multi-level degenerative diseases. I also had the opportunity to observe long thoracolumbar fusions, pediatric scoliosis corrections, growing rods, and adult deformity correction techniques such as pedicle subtraction osteotomy and corner osteotomy.

In addition, I learned how to manage complications that arise during intraoperative, postoperative, such as Dural tears, recurrent disc herniation, pseudo arthrosis, and adjacent segment disease. I gained valuable experience in handling these situations, including techniques for Dural tear repair.



With my Mentor Dr. S. Basu



Robotic surgery

Operation Theater:

The operation theater was a well-equipped, modular facility featuring advanced technologies such as neuro-monitoring, a surgical microscope, Medtronic O-arm, C-arm, and the Medtronic robot.

Outpatients' clinic:

During my fellowship, I had the opportunity to participate in the outpatient department (OPD) for three days, where the patient volume was immense. In the OPD, we took patient histories, conducted clinical examinations, and discussed management plans. These sessions led to valuable discussions on diagnosis and patient management strategies. I also participated in post-operative follow-ups, during which my mentor explained the challenges faced during surgery and the post-operative period, as well as how he managed complications.

Every Saturday, we had the "Walking Patients Clinic," running from morning until midnight. This clinic provided an excellent opportunity to interpret MRIs and X-rays, investigate, and examine patients with a variety of spinal conditions. Additionally,

Scoliosis Clinic:

Every 1st and 4th week of the month, running scoliosis clinic, which was my first experience with a dedicated scoliosis clinic. There, I learned about the natural history and management of neuro muscular scoliosis, behavior of curve in collagen disorder, Management of scoliosis in Tweener. limited fusion in degenerative scoliosis, Maintain balance in Adult scoliosis. selecting the right treatment for adult scoliosis, understanding the progression of adolescent idiopathic scoliosis (AIS), interpreting X-rays, and selecting appropriate fusion levels.

One notable aspect of the scoliosis clinic was providing financial support to all patients in need, who required complex spine surgeries but couldn't afford them. This was done through the Spine Research Foundation, established in 2006, which focuses on education, training, and research.

During my fellowship, I was also fortunate to attend the Lumbar Disc Replacement Cadaveric Workshop organized by the SingHealth Duke-NUS Spine Center in Singapore.

I am also deeply grateful to the Department of Neuro Anesthesiology, particularly Senior Consultant Dr. Trinanjan Sarangi, Consultant Dr. Amitava Biswas, Consultant Dr. Sanjit Kumar Singh, Dr. Sayantan Bose, and Senior Consultant Neurosurgeon Dr. Indrajit Roy, for their regular guidance and encouragement throughout my fellowship. Their support played a vital role in helping me learn and grow during this invaluable period.



Faculties with APSS, FNB, ASSI spine fellows

Case no.1

62/F with PID L4-L5 with instability

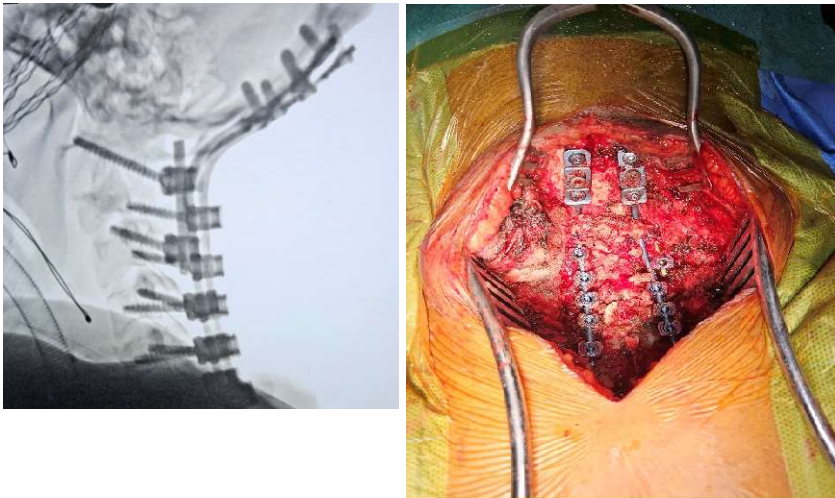
Procedure: OLIF L3-L4/ L4-L5 with MIS PI





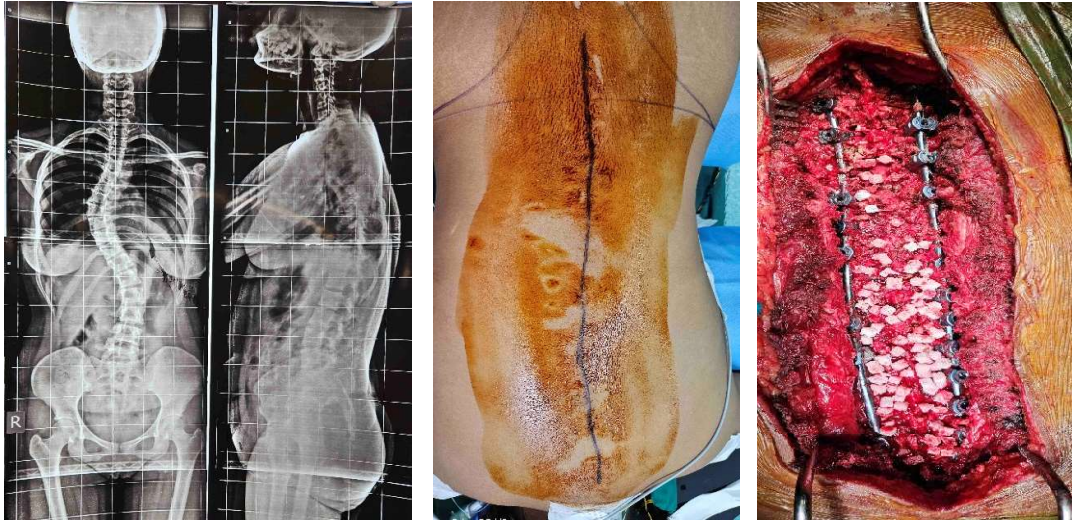
Case no. 2

55/F Atlanto-Axial Instability with Destruction of Odontoid with Basilar invagination.
Procedure: Cranial cervical fixation with bone grafting and Decompression. (Co to C5 fusion)



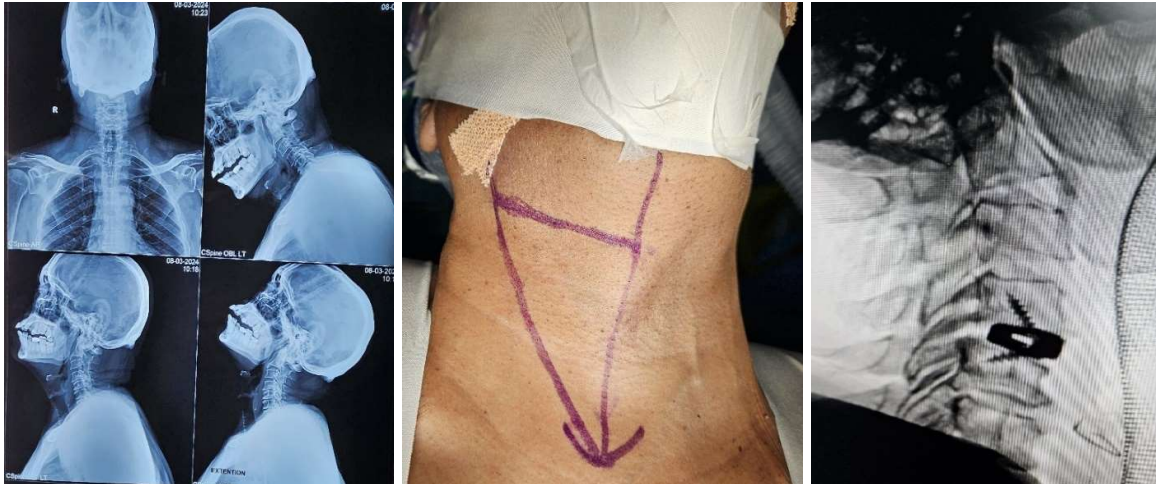
Case no. 3

Deformity correction



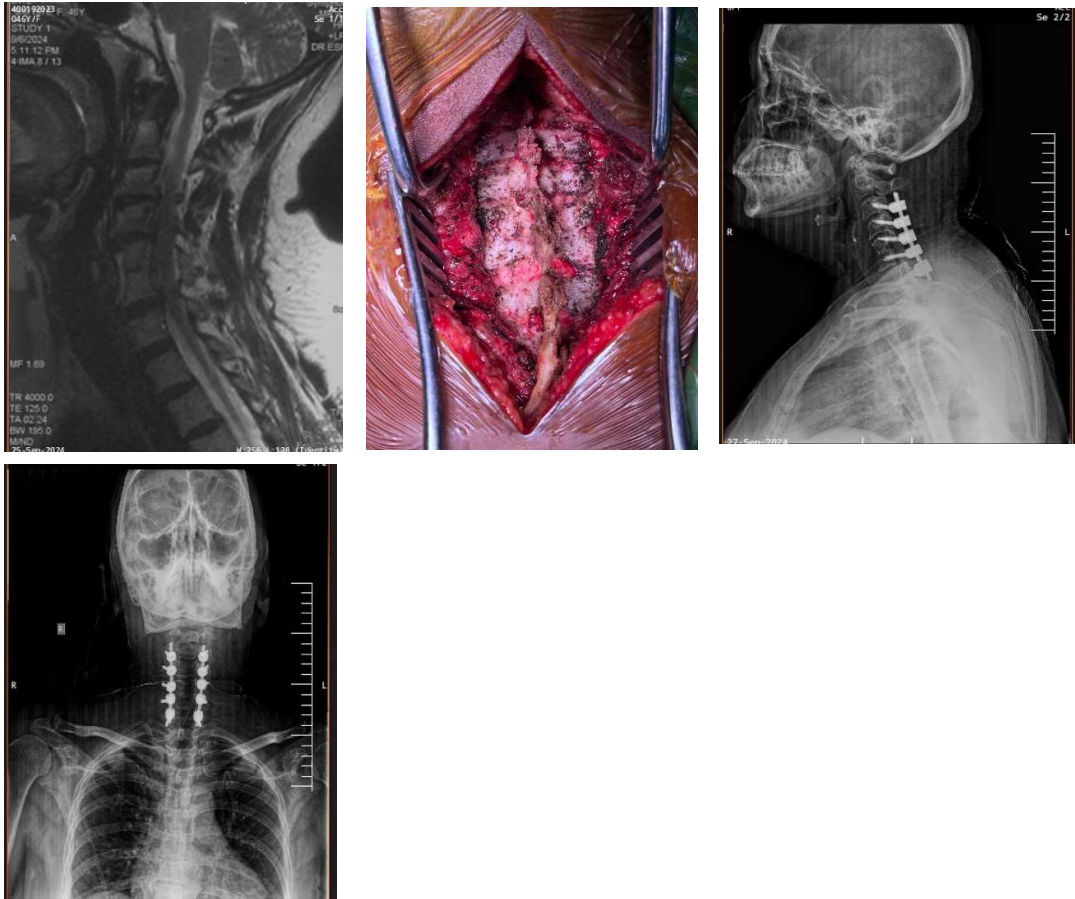
Case no. 4

ACDF



Case no. 5

Posterior Cervical Laminectomy and fusion



Conclusion:

During my fellowship at Kothari Medical Center, I would like to sincerely express my deepest gratitude to Dr. S. Basu, and the all faculties of spine department, the anesthesia and neurosurgery teams, and all the members of the Spine Foundation for their warm hospitality and for making my fellowship a truly enriching and unforgettable experience. I am especially thankful to the spine department for hosting a memorable farewell dinner, which I deeply appreciate.

Surgical and Academic log book.

APPS Medtronic Spine Fellowship Clinical Log Book

Host Centre: Kothari Medical Centre, Kolkata, India

Submission for the month of July 2024

Fellow: Dr Gyanendra Shah

Mentor: Dr Saumyajit Basu

I. Surgical Log

Date of Surgery	Age	Gender	Specialty	Diagnosis	Procedure	Primary Surgeon	Role
03-07-2024	66	Male	Degenerative	L5/S1 PID with caudal migration	L5/S1 TLIF right sided	Dr Saumyajit Basu	Observer
03-07-2024	56	Female	Osteoporosis	L1 osteoporotic compression fracture	L1 Vertebroplasty	Dr Saumyajit Basu	Observer
05-07-2024	70	Male	Degenerative	L3/4 and L4/5 LCS	L3/4 and L4/5 PSF+ decompression and PL fusion	Dr.A.Biswas	Observer
08-07-2024	34	Female	Degenerative/ Minimal Access	PID L4-L5 with instability	OLIF L4-L5 with MIS PI	Dr Saumyajit Basu	Observer
08-07-2024	71	Female	Osteoporosis	D12 Compression Fracture	Kyphoplasty	Dr Amitava Biswas	Observer
08-07-2024	52	Male	Degenerative	PID L4-L5	PI + Decompression + PLF	Dr Saumyajit Basu	Observer
08-07-2024	61	Female	Degenerative	DDD L4-L5 and L5-S1	PI + Decompression + TLIF L5-S1 + PLF	Dr Saumyajit Basu	Observer
09-07-2024	58	Female	Degenerative	CSM C5-C6	ACDF	Dr Amitava Biswas	Observer
09-07-2024	48	Male	Degenerative	PID L4-L5	PI + TLIF + PLF	Dr Amitava Biswas	Observer

22-07-2024	73	Female	Deformity	Adult Spinal Deformity	PI: L2-S1 + TLIF L4-L5 & L5-S1 + PLF	Dr Saumyajit Basu	Observer
22-07-2024	60	Female	Degenerative	Listhesis L4-L5 with PID L3-L4	PI L3-L5 + Decompression TLIF L4-L5 + PLF	Dr Saumyajit Basu	Observer
22-07-2024	36	Female	Degenerative	Listhesis L4-L5 with PIVD L5-S1	TLIF L4-L5 L5-S1	Dr Saumyajit Basu	Observer
23-07-2024	53	Female	Degenerative	DDD L4-L5 with Listhesis L5-S1	TLIF L5-S1	Dr Amitava Biswas	Observer
23-07-2024	41	Male	Degenerative	C5/C6/C7 PID with Radiculopathy	ACDF C5-C6 & C6-C7	Dr Amitava Biswas	Observer
23-07-2024	60	Female	Degenerative	PIVD L5-S1 with Instability with disc height reduction	TLIF L5-S1	Dr Amitava Biswas	Observer
23-07-2024	54		Degenerative	Left SI joint arthrosis	Left SI joint block	Dr Amitava Biswas	Observer
23-07-2024	67	Male	Degenerative	OPLL with CSM	C3-C6 Laminectomy with Lateral Mass Fixation	Dr Amitava Biswas	Observer
24-07-2024	63	Female	Degenerative	DDD L4-L5	PI + TLIF + PLF	Dr Saumyajit Basu	Observer
24-07-2024	70	Female	Degenerative	Listhesis L4-L5 with PID L3-L4	RoboticNavigation assisted PI with PLF with TLIF L4-L5	Dr Saumyajit Basu	Observer

II. Academic Log

Date	Surgeon	Activity	Key Discussions / Topic
05-07-2024	Dr Saumyajit Basu	Lecture	Hip Knee Spine Syndrome
11-07-2024	Dr Saumyajit Basu	Scoliosis Clinic	Choosing the right patient in Adult scoliosis Classification of Adult scoliosis
12-07-2024	Dr Saumyajit Basu	Lecture	Atlantoaxial Instability
16-07-2024	Dr Saumyajit Basu	Post-op Clinic	Importance of Supine and Standing X-ray

17-07-2024	Dr.Saumyajit Basu Dr.I.Roy Dr Amitava Biswas	Joint Neurosurgical Meet	1.Nilesh Sarkar, 8y/M, Congenital CVJ Anomalies 2. Athanu Sinha, 60y/M, L3/4 Arachnoid webs
17-07-2024	Dr Saumyajit Basu	Case Presentation	Pyogenic Spondylodiscitis and Solitary Plasmacytoma
20-07-2024	Dr Inderjit Roy	Case Presentation	Lumbar Radiculopathy
23-07-2024	Dr Saumyajit Basu	Post-op Clinic	Assessment of Interbody fusion during follow-up visits
25-07-2024	Dr Saumyajit Basu	Ward-rounds	Video consenting
25-07-2024	Dr Saumyajit Basu	Scoliosis Clinic	1. Management in Neuromuscular Scoliosis 2. Behavior of curve in Collagen disorders 3. Management of scoliosis in Tweeners 4. Limited fusion in Degenerative scoliosis 5. Maintaining balance in Adult scoliosis
25-07-024	Dr Saumyajit Basu	Ward rounds	Immediate post-op assessment and care

Journal Club/Seminar

Date	Topic	Presentor	Moderator
02-07-024	Lumbar canal stenosis	Dr.Shubham Kumar	Dr.A.Biswas
16-07-024	Intramedullary Spinal Cord Tumors	Dr. Sunkappa	Dr.A.Biswas
23-07-024	Thoracic,lumbar pedicle screw fixation	Dr.Harsh Patel	Dr.ABiswas

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Mentor: Dr. Saumyajit Basu

Basu

APSS Medtronic Spine Fellowship clinical log book

Host Centre: Kothari Medical Centre, Kolkata, India

Mentor: Dr. Saumyajit Basu

Fellow: Dr. Gyanendra Shah

Submission for the Month of August 2024

List of Surgical log

Date	Age/Sex	Diagnosis	Procedure	Primary surgeon	Role
01-08-024	70/F	D11 pathological burst fracture with L4 VOFC	D9 - L1 PSF + Biopsy + Anterior reconstruction	Dr. S.Basu	Observer
02-08-024	51/M	L3/4 degenerative spondylolisthesis	OLIF + MIS fixation	Dr. S.Basu	Observer
02-08-024	52/M	L5/S1 Grade II lytic spondylolisthesis	Lumbar Decompression+ Fixation +TLIF	Dr. S.Basu	Observer
05-08-024	6WK/M	Arnold Chiari type 2 Myelomeningocele	Excision + Repair	Dr. S.Basu	Observer
05-08-024	39/M	L5/S1 PID	L5/S1 PSF + Decompression	Dr. A Biswas	Observer
05-08-024	58/F	L3/4 & L4/5 lumbar canal stenosis	Lumbar Decompression+ Fixation +TLIF	Dr. S .Basu	Observer
06.08.2024	67/F	L2 OVCF	L2 Kyphoplasty	Dr. S .Basu	Observer
06.08.2024	69/F	D12 OVCF	D12 Kyphoplasty	Dr. S .Basu	Observer
06-08-024	59/M	L3/4 Adjacent Segment Degeneration	Extension of fusion to L3 + Decompression	Dr. A Biswas	Observer
07-08-024	76/M	L3/4 and L4/5 LCS	L4/5 TLIF	Dr. S .Basu	Observer
07-08-024	56/F	L4/5 PID.	Lumbar Decompression + Fixation + TLIF	Dr. S .Basu	Observer
08.08.2024	39/M	L4/5 PID	L4/5 Inter laminar Endoscopic discectomy	Dr. A Biswas	Observer
09-08-024	65/F	L4/5 Lumbar Canal Stenosis with spondylolisthesis	Lumbar Decompression + Fixation + TLIF	Dr. S. Basu	Observer

12-08-024	67/M	C5/6 3 column injury	Posterior Cervical Lateral mass Fixation + Laminectomy	Dr. S .Basu	Observer
14-08-024	22/F	AIS Lenke 3CN	Posterior Scoliosis Correction	Dr. S .Basu	Observer
15-08-024	50/F	L4/5 and L5/S1 PID	L4 - S1 PSF + Decompression	Dr. A Biswas	Observer
15-08-024	56/F	L3/4 and L4/5 LCS	L3 – L5 PSF + Decompression	Dr. A Biswas	Observer
15-08-024	61/F	L4/5 and L5/S1 PID	L4 - S1 PSF + Decompression	Dr. A Biswas	Observer
16-08-024	67/F	Pathological D3 fracture with cord compression - Plasmacytoma	Dorsal Decompression + Fixation + Biopsy	Dr. S .Basu	Observer
16-08-024	55/F	L4/5 Degenerative spondylolisthesis with L5/S1 B/L foraminal stenosis	Lumbar Decompression + Robotic assisted L4-S1 Fixation + TLIF	Dr. S .Basu	Observer
20-08-024	67/M	Multi-level lumbar canal stenosis with degenerative scoliosis	Lumbar Decompression + Fixation + PLF	Dr. S .Basu	Observer
20.08.2024	49/M	L4/5 PID	L4/5 Inter laminar Endoscopic discectomy	Dr. A Biswas	Observer
20.08.2024	63/M	C5/6, C6/7 PID	C5/6, C6/7 ACDf	Dr. A Biswas	Observer
26-08-024	55/F	Atlanto-Axial Instability with Destruction of Odontoid	Occipito-Cervical Fusion	Dr. S .Basu	Observer
26-08-024	67/F	D8 burst fracture	D7 -D9 Cement Augmented screws + Biopsy	Dr. S .Basu	Observer
28-08-024	62/M	C3/4 and C4/5 PID with ligamentum flavum hypertrophy	C3-C6 Laminoplasty	Dr. S .Basu	Observer
30.08.024	67/F	L4/5 Grade I spondylolisthesis with lumbar stenosis	Lumbar Decompression + Fixation + TLIF	Dr. S .Basu	Observer

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Mentor Dr. SAUMYAJIT BASU

Academic Log

Date	Surgeon	Activity	Key Discussion/Topic
02.08.2024	Dr. S.Basu	Lecture	Osteology of Spine
09.08.2024	Dr. S.Basu	Lecture	Congenital Scoliosis
29-08-024	Dr. S.Basu	Scoliosis clinic	Management/choosing the right patients adult scoliosis
31-09-024	Dr. S.Basu	OPD	CVJ Tuberculosis Assessment during F/U

Journal Club/Seminar

Date	Topic	Presenter	Moderator
03.08.2024	Bedside Clinic:62y/F, Tandem Stenosis	Dr. Ayon Ghosh	Dr. I Roy
20.08.2024	Bedside Clinic: 72/M, Cauda Equina Syndrome / AIDP (GBS)	Dr. Ayon Ghosh	Dr.A.Biswas
29.08.2024	Bedside Clinic: 67/M, L5/S1 Grade II lytic spondylolisthesis	Dr. Vikash H	Dr.I. Roy
30.08.2024	Bedside Clinic: 70/M, L3/4 and L4/5 LCS	Dr. Ayon Ghosh	Dr.S. Basu
31.08.2024	Bedside clinic Lumbar canal Stenosis with Foot drop	Dr. Vikas H	Dr.I.Roy

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Mentor Dr. SAUMYAJIT BASU

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
List of Surgical log

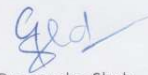
Date	Age/Sex	Diagnosis	Procedure	Primary surgeon	Role
02-09-024	66/M	L3-L4/L4-L5 / L5-S1 with LCS	Posterior fixation and Decompression	Dr. S. Basu	Observer
02-09-024	55/M	C5-C6/C6-C7 PID	ACDF	Dr. S. Basu	Observer
02-09-024	41/F	L5/S1 PID	MLD	Dr. S. Basu	Observer
02-09-024	53/F	L3/L4 ASD with PID	Extension of fusion to L2+ Decompression	Dr.S.Basu	Observer
02-09-024	75/M	L5-S1 Spondylolisthesis with Neural Compression	Lumbar Decompression and fixation with TLIF	Dr. S. Basu	Observer
02-09-024	68/F	Lumbar Neurogenic Claudication	L3-4 DLL+ PLF with L3 Root exploration and Decompression.	Dr. S. Basu	Observer
16-09-024	33/M	L4/L5 PID	MLD	Dr. S. Basu	Observer
17-09-024	59/F	L3,L4/L4,L5 PID with LCS	Lumbar Decompression and Fixation with TLIF	Dr.A.Biswas	Observer
17-09-024	49/M	Compressive cervical myelopathy	C3-C7 posterior fixation with laminectomy.	Dr.A.Biswas	Observer
17-09-024	40/M	L4/5 and L5/S1 PID	L4 - S1 PSF Decompression	Dr.A.Biswas	Observer
16-09-024	69/F	L4/L5 PID	Lumbar Decompression and Fixation +TLIF	Dr. S. Basu	Observer
16-09-024	70/M	L4/L5 Degenerative spondylolisthesis PID with LCS	Extension of fusion + Decompression	Dr. S. Basu	Observer
16-09-024	68/F	L3/L4 and L4/L5LCS with Adult Degenerative scoliosis	L3/L4 +laminectomy +L4/L5 PSF +Decompression	Dr. S. Basu	Observer
18-09-024	41/F	L5/S1 Lytic spondylolisthesis with neural compression	Lumbar decompression and Fixation+ Robotic Asst.+ TLIF	Dr. S. Basu	Observer
18-09-024	47/M	L4/L5 PID with Neural compression	Lumbar decompression and fixation, TLIF	Dr.S. Basu	Observer
18-09-024	69/F	Multi-level lumbar canal stenosis with degenerative scoliosis	Lumbar Decompression Fixation + PLF	Dr.S. Basu	Observer
19-09-024	79/F	OVCF	Kyphoplasty L2	Dr.S Basu	Observer
19-09-024	53/M	D12 Wedge compression Fracture	Posterior fixation with MIS	Dr.S Basu	Observer
20-09-024	74/M	OVCF	VTP D10-D12-L2 +Biopsy	Dr.S Basu	Observer

20-09-024	53/M	C6-C7/ C7-T1 PID	C6 To T2 Laminectomy and posterior fixation	Dr.S. Basu	Observer
20-09-024	65/F	Spondylodiscitis	TP Biopsy L2	Dr.S.Basu	Observer
20-09-024	59/M	L4/L5 Adjacent Segment Degeneration	Extension of Fusion to L2 and Decompression	Dr.S Basu	Observer
27-09-024	20/M	SMA Type 2, Scoliosis Correction	T10-S2AI+L5/S1 TLIF in 1 st stage	Dr.S. Basu	Observer
27-09-024	65/M	L4/L5 Pseudoarthrosis	L2/L3-S1/S2AI Screw fixation +TLIF +Infuse rh-BMP	Dr.S. Basu	Observer

Academic log

Date	Topic	Presenter	Moderator
04-09-024	Implants and Instruments in Spine Surgery	Lecture by Dr.S Basu	---
05-09-024	Implants and Instruments in Spine Surgery	Lecture by Dr.S Basu	----
07-09-024	Degenerative Cervical Myelopathy	Dr. Sunkappa SR	Dr.I. Roy
24-09-024	Cervical spine screw fixation Techniques and Complication	Dr. Dhruv Patel	Dr.A. Biswas
23-09-024	Observation of FNB Practical Exams	Dr. Saikrishna R, Dr. Sunkappa SR	Dr.A Biswas, Dr. Dilip Datta
28-09-024	Bedside Clinic: Lumbar Canal Stenosis	Dr. Saikrishna R	Dr.I. Roy


Mentor: Dr. Saumyajit Basu


Fellow: Dr. Gyanendra Shah