PASS Silver Jubilee 25

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AO SPINE

JB&JS

14th

PAN ARAB SPINE SOCIETY CONFERENCE

In Collaboration with

MENA SPINE CONGRESS

24 - 26 January, 2025

Ritz-Carlton (DIFC), Dubai, UAE

Ethical MedTech
MedTech Europe compliance portal

DHA ACCREDITATION CME

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COB Conference Organizing Bureau

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WELCOME MESSAGE

Dear Colleagues,

Welcome to the 14th Pan Arab Spine Society Conference!

This year marks the silver Jobilee of PASS. I am honoured to have you join us for this gathering of esteemed professionals dedicated to advancing spine care in our region. Together, we will share knowledge, foster collaboration, and drive innovation in spinal health.

I am eagerly looking forward to your contribution to the success of this event.

Warm regards,

Sameh Abolfotouh
Conference Chairman

SCIENTIFIC COMMITTEE

SCIENTIFIC COMMITTEE

Sameh Abolfotouh

Omar Alnori

Faisal Konbaz

Mohamed Khattab

Waleed Awwad

Muzahem Taha

Youssry Elhawary

PAN ARAB SPINE SOCIETY GOVERNANCE

PAN ARAB SPINE SOCIETY GOVERNANCE

Current Chairman:

Abdul Razzaq Al-Obaid

Chairman Elect:

Sameh Abolfotouh

Society Secretary-General:

Youssry Elhawary

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Abdulmoeen Baco
Amin Hanine
Badria Tourani
Imad Hashim
Firas Husban
Joseph El Khalil
Khaled Batterje
Khaled Faraj
Khaled Swailem
Khalil Elzuoriqi
Maen Elzaeem
Mohamed Khattab
Mohanad Ali
Muzaham Taha
Nayef Bin Dajim
Ramzy Buzaidi
Tarek Kanaan
Tuhami Benzakour
Waleed Awwad
Zaid Al Aubaidi
Ziad Elzoubi

FACULTY
SPEAKERS

Faculty Speakers

Jeffrey Wang
USA

Dan Riew
USA

Richard Bransford
USA

Jens Chapman
USA

Ali Baaj
USA

Stefano Boriani
ITALY

Mohit Bhandari
CANADA

Sherif Rashad
JAPAN

Luke Kim
SOUTH KOREA

Ahmed Shawky
GERMANY

Abhay Nene
INDIA

Ayush Sharma
INDIA

Faculty Speakers

Tony Tannoury
USA

Muhammad M. Abd-El-Barr
USA

Marcus Head
UK

Klaus Schnake
GERMANY

Oscar Alves
PORTUGAL

Anas Dyab
LUXEMBOURG

Sameer Parpia
CANADA

Naresh Kumar
SINGAPORE

Sami Aleissa
KSA

Saleh Baeesa
KSA

Mohammad El Sharkawy
EGYPT

Tareq Kanaan
JORDAN

Faculty Speakers

SalahAddeen Khalifah
KSA

Anouar Bourghli
KSA

Ghazwan Hasan
IRAQ

Nayef Bin Dajim
KSA

Joseph El Khalil
LEBANON

Mason Alnouri
UAE

Ahmed Al-Jahwari
OMAN

Khalifa Al Ghafri
OMAN

Ali Aboumadawi
EGYPT

Rami Al Qroom
JORDAN

Ghanem Al Sulaiti
QATAR

Abdulaziz Al Mutair
KUWAIT

Faculty Speakers

Tarek El Hewala
EGYPT

Adnan Alkandari
KUWAIT

Firas Husban
JORDAN

Tarek Elfiky
EGYPT

Youssry Elhawary
EGYPT

Imad Hashim
IRAQ

Faisal Konbaz
KSA

Omar Alnori
QATAR

Waleed Awwad
KSA

Mohamed Armouty
JORDAN

Mohamed Khattab
EGYPT

Muzahem Taha
IRAQ

Faculty Speakers

Khaled Faraj
UAE

Rami Salameh
UAE

Wael Alsammak
UAE

Ziad Alzoubi
JORDAN

Osama Aldahamsheh
JORDAN

Tyler McKechnie
CANADA

Nader Hebela
UAE

Mohamed Asha
UAE

Charbel Moussallem
UAE

Waseem Aziz
UAE

Zaid Al Aubaidi
UAE

Ziad Aljian
UAE

Ahmed Alkhani
KSA

Amer Aziz
PAKISTAN

PRE-CONFERENCE WORKSHOPS

Day 1

24 January 2025

Pre-conference Workshops

Morning 08:00 - 13:00 (Parallel Workshops)			
Research Workshop JB&JS OrthoEvidence+	Physical Therapy Workshop Knowledge Bridge From Knowledge to Practice Dry Needling	ZAHRAWI Medtronic	BRAINLAB
Afternoon 14:00 - 17:00 (Parallel Workshops)			
Physical Therapy Workshop ISST Schroth Method for Scoliosis	RIWOSPINE A Richard Wolf Company Powered By AMICO	GLOBUS MEDICAL Powered By AMICO	Johnson&Johnson MedTech

Day 1

24 January 2025

Pre-conference Workshops

Morning
08:00 - 13:00
(Parallel Workshops)

JB&JS OrthoEvidence+

Research Workshop

Mohit Bhandari
Editor in chief JB&JS

Faculty
Sameh Abolfotouh
Sameer Parpia
Tyler Mckechnie

08:00 - 08:15	Welcome/Introduction
08:15 – 08:30	The 5 Traits of a High-Impact Researcher
08:30 – 08:50	5 Study Designs that Deliver Hi-Impact for Publications
08:50 – 09:10	5 Tips to Improve Your Scientific Writing for More Acceptance
09:10 – 09:30	Impactful Presentations: 5 Things Every Great Presenter Does!
09:30 – 10:00	Morning Break and Networking
BREAKOUT SESSIONS	
10:00 – 11:00	How to Tell a Great Scientific Story
11:00 – 12:00	How to Create a Compelling Communication Strategy for Your Research
12:00 – 12:30	Break and Networking
12:30 – 13:00	Panel Discussion and Summary

Day 1

24 January 2025

Pre-conference Workshops

Morning
09:00 - 13:00
(Parallel Workshops)

Physical Therapy Workshop

14th Pan Arab Spine Conference - Dry Needling Workshop
Introduction to dry Needling - Dr. Jan Dommerholt, PT, DPT

Knowledge Bridge
From Knowledge to Practice

Time	Topic
09:00 - 09:15	**Welcome/Introduction**
09:15 - 10:00	Introduction to Dry Needling
10:00 - 10:30	Dry Needling for Pain Management
10:30 - 10:45	**Coffee Break**
10:45 - 11:15	Dry Needling for Mobility Deficits
11:15 - 11:45	Dry Needling in Neurology
11:45 - 12:15	Dry Needling in Athletics and Sports
12:15 - 12:45	Practical Demonstration and Q&A
12:45 - 13:00	**Closing Remarks**

Zahrawi - Medtronic Workshop

January 24th- 08:00 - 13:00

MIS TLIF: Expandable Technology	Saleh Baeesa
OLIF 25 & OLIF 51: Latest Solutions	Firas Husban
Scoliosis Correction Hands-On	Sami Aleissa
Global Alignment with UNID Rods	
Mazor - Spine Robotic Guidance	

Johnson & Johnson Medtech Workshop

January 24th- 14:00 - 17:00

Posterior Cervical Approach	Waleed Awwad
MIS TLIF	Ali Baaj
Anterior to Psoas Approach (ATP)	Tony Tannoury

Schroth Method Workshop

January 24th- 14:00 - 17:00

ISST

- Schroth Method is the -3Dimensional corrections of the spine and trunk using elongation, 3D pelvic corrections and Breathing to reverse spinal deformities' symptoms and pathomechanism.
- It is the most widespread conservative method regarding scoliosis and spinal deformities treatment.
- Using its precise and innovative way of assessment and treatment makes it easy for practitioners to approach every patient.
- In Addition to exercises we have our specific bracing style and classification that we tailor to every patient with respect to the 3D aspect of the deformity.
- Its worldwide Multidisciplinary team ensures best decision making and to understand each healthcare professional perspective for the sake of the highest treatment standards.
- Schroth method capable to follow and upgrade its content with a leading international team that investigates and approach every aspect of spinal deformities research.

AMICO

Date	January 24th
Location	Ritz-Carlton Hotel (DIFC)-Dubai- UAE Samaya Ballroom C & D
Workshop	Dry Workshop on Realists Spine Models

Agenda/ Samaya Ballroom D

January 24th- 14:00 - 17:00

RIWOSPINE
A Richard Wolf Company

14:00 -14:15	Lecture session- Interlaminar Spinal Endoscopic Technique	Luke Kim
14:15 -15:15	Interlaminar Endoscopic Approach Demonstration on Realists	Luke Kim
15:15 - 15:30	Lecture session- Transforaminal Spinal Endoscopic Technique	Luke Kim
15:30 - 16:45	Transforaminal Endoscopic Approach Demonstration on Realists	Luke Kim
16:45 - 17:00	**Q&A**	

Agenda/ Samaya Ballroom C

January 24th- 14:00 - 17:00

GLOBUS MEDICAL

14:00 - 14:15	Lecture session- Proper patient selection for Anterior Cervical Disc Replacement (ACDR)/Case Discussion	Dan Riew
14:15 - 15:15	ACDR Technique Demonstration on Realists	Dan Riew
15:15 - 15:30	Lecture session- Selecting right candidate for Vertebral Body Tethering (VBT)/Case Discussion	Firas Husban
15:30 - 16:45	VBT Technique Demonstration on Realists	Firas Husban
16:45 - 17:00	**Q&A**	

هـيـئـة الـصـحـة بدبـي
DUBAI HEALTH AUTHORITY

12
HOURS

DHA ACCREDITATION
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18.50
HOURS

SCIENTIFIC PROGRAM

Program at a glance

25 - 26 January 2025

07:00 - 17:15	25 January 2025	
07:00 - 08:00	Registration	
08:00 - 08:30	Opening Ceremony	
08:30 - 10:40	Session 1: Debate Session	
10:40 - 11:00	Coffee Break	
11:00 - 13:00	Session 2: AO Spine Session: Leadership in Spine Surgery in the Modern Healthcare System	
13:00 - 14:00	Lunch Break	
14:00 - 15:30	Session 3: Spinal Tumors	AO Spine Knowledge Forum Trauma and Infection Symposium **(Exhibition Area)**
15:30 - 15:50	Coffee Break	
15:50 - 17:15	Session 4: MENA Spine Congress (MSC) Hosted Session: The Everyday Decision Dilemmas	Abstract Session 1 (Exhibition Area)
08:00 - 17:30	**26 January 2025**	
08:00 - 11:15	Session 1: Spine Deformity	
11:15 - 11:30	Coffee Break	
11:30 - 12:45	Session 2: Future Directions	Abstract Session 2 (Exhibition Area)
12:45 - 13:45	Lunch Break	
13:45 - 14:55	Session 3: Spine Trauma: Current Concepts and Practices, A Case-Based Discussion	
14:55 - 15:10	Coffee Break	
15:10 - 16:10	Session 4: My Worst Case	
16:10 - 17:20	Session 5: Challenging Cases: Hosting Country "UAE" Experience	
17:20 - 17:30	Closing Remarks	

DAY 2

25 January 2025

07:00 - 08:00	Registration	
08:00 - 08:30	Opening Ceremony	
08:30 - 10:40	Session 1: Debate Session	Speakers
08:30 - 09:00	Central Cord Syndrome Moderator: Sameh Abolfotouh	
	They all improve. I wouldn't operate on them	Ali Baaj
	I need to operate immediately	Dan Riew
09:00- 09:30	Lateral Lumbar Surgeries Moderator: Omar Alnori	
	Single position prone surgery is the time-saving and the least morbid	Muhammad M. Abd- El-Barr
	Two-position surgery is more versatile	Ayush Sharma
09:30- 10:00	Multilevel Spinal Canal Stenosis Moderator: Muzahem Taha	
	Endoscopic spine surgery is the future of spine surgery	Luke Kim
	Open surgery remains the best option	Richard Bransford
	MIS spine surgery established a real balance	Ghazwan Hasan
10:00 - 10:30	Cervical Radiculopathy Moderator: Faisal Konbaz	
	ACDF is the gold standard	Jeffrey Wang
	ADR: Motion preserving surgery	Oscar Alves
	Laminoforaminotomy/endoscopic discectomy	Luke Kim
10:30 - 10:40	**Q & A**	
10:40 - 11:00	Coffee Break	

DAY 2

25 January 2025

11:00 - 13:00	Session 2: AO Spine Session: Leadership in Spine Surgery in the Modern Healthcare System	Speakers
	Moderators : Sameh Abolfotouh, Nayef Bin Dajim	
11:00 - 11:10	Leading with a "creative mindset" in spine surgery	Mohit Bhandari
11:10 - 11:20	Panel discussion	
11:20 - 11:30	Leading through adversity: Strategies for resilience in spine surgery societies	Jeffrey Wang
11:30 - 11:40	Panel discussion	
11:40 - 11:50	Understanding your leadership style: Effective communication strategies	Youssry Elhawary
11:50 - 12:00	Panel discussion	
12:00 - 12:10	When big changes require big leaders	Dan Riew
12:10 - 12:20	Panel discussion	
12:20 - 12:30	Innovative approaches to leadership development in spine surgery medical education	Richard Bransford
12:30 - 12:40	Panel discussion	
12:40 - 13:00	Final remarks and take-home messages	
13:00- 14:00	Lunch Break	

DAY 2

25 January 2025

14:00 - 15:30	Session 3: Spinal Tumors	Speakers
	Moderators: Stefano Boriani, Faisal Konbaz, Abdulmoeen Baco	
14:00 - 14:15	Building up a spine oncology unit	Saleh Baeesa
14:15 - 14:30	Tumor surgeries in under-developed countries	Stefano Boriani
14:30 - 14:40	Use of non-metallic implants in metastatic spine tumour surgery, past, present and future	Naresh Kumar
14:40 - 14:50	Cervical Spine Tumors: Current treatment concepts	Tarek Kanaan
14:50 - 15:00	Treatment principles of metastatic spinal tumors	Nayef Bin Dajim
15:00 - 15:15	Mobile VS sacral chordoma: Are we dealing with different pathologies?	Stefano Boriani
15:15 - 15:30	**Q&A**	
14:00 - 15:30	**AO Spine Knowledge Forum** **Trauma and Infection Symposium** **(Exhibition Area)** AO SPINE	Speakers
	Chair: Klaus Schnake	
14:00 - 14:08	AO Spine research – How to get involved	Klaus Schnake
14:08 - 14:20	Treatment of geriatric odontoid fractures	Jens Chapman
14:20 - 14:32	Treatment of upper cervical fractures	Richard Bransford
14:32 - 14:44	Treatment of subaxial fractures	Mohammad El Sharkawy
14:44 - 14:56	Treatment of osteoporotic fractures	Klaus Schnake
14:56 - 15:08	Treatment of thoracolumbar A3/A4 fractures	Mohamed Ali
15:08 - 15:30	**Q&A**	

DAY 2

25 January 2025

15:30 - 15:50	Coffee Break	
15:50 - 17:15	**Session 4: MENA Spine Congress (MSC) Hosted Session: The Everyday Decision Dilemmas** MENA SPINE CONGRESS	Speakers
Moderators: Sameh Abolfotouh, Omar Alnori, Muzahem Taha		
15:50 - 16:00	How osteoporosis affects my preoperative and perioperative plan?	Richard Bransford
16:00 - 16:10	Thoracic Disc Herniation: What are my options?	Ahmed Alkhani
16:10 - 16:20	Narcotics in spine surgery: How did we reach that far?	Jens Chapman
16:20 - 16:30	The smoker who tries but can't quit	Joseph El Khalil
16:30 - 16:40	Bone grafts and biologics; what's the best evidence?	Jeffrey Wang
16:40 - 17:00	Cervical spine surgery in a professional athlete	Dan Riew
17:00 - 17:15	**Q&A**	

25 January 2025

15:50 - 17:15	**Abstract Session 1 (Exhibition Area)**	Speakers
Moderators: Faisal Konbaz, Waleed Awwad, Ghazwan Hasan		
15:50 - 15:54	Results of biphasic calcium phosphate bone graft with submicron needle-shaped surface topography as a standalone alternative to autografts are favorable in a prospective, intra-patient controlled trial	Katherine Sage
15:54 - 15:58	Efficacy of needle-shaped biphasic calcium phosphate ceramic versus autograft in instrumented posterolateral spinal fusion: A multicenter, randomized, controlled, noninferiority trial with intrapatient design	Katherine Sage
15:58 - 16:02	Comparative analysis of morphological changes in multifidus muscle regarding surgical techniques for single-level lumbar decompression	Dongeon Lee
16:02 - 16:06	Intraoperative neuromonitoring has poor correlation with postop neurological deficits in non-cord level adult deformity surgery	Ahmed Shawky
16:06 - 16:10	Use of D-wave in intramedullary spine tumours and complex spine deformities	Sivan Ali
16:10 - 16:14	Understanding bilateral MEP changes during cord-level spinal deformity surgery: Etiology, significance, and response	Ahmed Shawky
16:14 - 16:18	A novel technique to decrease the risk of infection post-coccygectomy: A case series study	Mohannad W Awwad
16:18 - 16:28	Discussion	All Speakers

25 January 2025

16:28 - 16:32	Endoscopic transforaminal discectomy for recurrent lumbar disc herniation	Ahmed Baraka
16:32 - 16:36	The first case of robot-assisted uniportal and biportal endo-foraminotomy	Maria Camila Pedraza
16:36 - 16:40	Comparison in complications of endoscopic vs. open discectomy	Mohamed Malabari
16:40 - 16:44	Unilateral biportal endoscopic spine surgery: Managing complex and revision cases with a minimally invasive approach	Jin Hwa Eum
16:44 - 16:48	Optimizing revision lumbar surgery: The unilateral biportal endoscopic approach	Alhareth Maaya
16:48 - 16:52	Iraqi mentorship program vs. fellowship program in endoscopic spine surgery	Ahmed Alqatub
16:52 - 16:56	Physicians› referral preferences: Orthopedic spine surgeons vs. neurosurgeons – a multinational study in the Middle East	Osama Aldahamsheh
16:56 - 17:00	Open midline decompression and ligament reconstruction for multiple level spinal stenosis in elderly patients	Shin-Jae Kim
17:00 - 17:04	Vertebral body tethering for adolescent idiopathic scoliosis: Quality of evidence and recommendations from a systematic overview of systematic review in literature	Jawad Nouraldeen Derbas
17:04 - 17:08	Single-stage surgical treatment of congenital spinal deformity associated with intraspinal anomalies	Wael Alkasem
17:08 - 17:15	Discussion	All Speakers

26 January 2025

08:00 – 11:15	Session 1: Spine Deformity	Speakers
Moderators : Mohamed Khattab, Ziad Alzoubi , Khaled Faraj		
Pediatric: Early Onset Scoliosis (EOS)		
08:00 - 08:10	Bracing vs. casting: Can we cure patients with infantile scoliosis	Mason Alnouri
08:10 - 08:20	Ideal age of index surgical treatment; is anytime a good time?	Abhay Nene
08:20 - 08:35	Growing constructs in EOS	Zaid Al Aubaidi
08:35 - 08:45	EOS in underdeveloped countries	Amer Aziz
Pediatric: Adolescent Idiopathic Scoliosis (AIS)		
08:45 - 08:50	Case Presentation	SalahAddeen Khalifa
08:50 - 09:00	What are the indications for selective fusion?	Mohamed Armouty
09:00 - 09:10	Motion Preservation: When should we consider VBT as the best option?	Firas Husban
09:10 - 09:20	Is there still a role for -3column osteotomies in Adolescent Scoliosis?	Anouar Bourghli
09:20 - 09:30	Surgical management of severe aggressive scoliosis curve	Ziad Alzoubi
09:30 - 09:37	Case resolution	SalahAddeen Khalifa
09:37 - 09:45	Could Schroth method change the natural history of AIS?	Nikola Jevtic
09:45 - 09:55	**Q & A**	
Adult Spine Deformity		
Moderators: Omar Alnori , Ahmed Shawky		
09:55 - 10:00	Case presentation	Tarek El Hewala
10:00 - 10:10	Risk stratification in elderly deformity patients, when to say no	Anas Dyab
10:10 - 10:20	Navigating the curves: Tips and tricks in adult spine deformity surgeries	Jens Chapman
10:20 - 10:30	Adult spinal deformity patient; Should we always fuse to the pelvis?	Sami Aleissa
10:30 - 10:40	Is there a role for anterior surgery in ASD?	Tony Tannoury
10:40 - 10:50	L4-5 Spondylolisthesis with deformity: One-level fusion vs. go big or go home	Jens Chapman
10:50 - 11:00	Case resolution	Tarek El Hewala
11:00 - 11:15	**Q & A**	
11:15 - 11:30	Coffee Break	

26 January 2025

11:30 - 12:45	Session 2: Future Directions	Speakers
Moderators: Firas Husban, Abdulmoeen Baco, Rami Salameh, Sherif Elghamry		
11:30 - 11:45	Enabling technology in modern spine surgery	Ali Baaj
11:45 - 12:00	AI and adult spine deformity surgeries	Jens Chapman
12:00 - 12:15	Stem cell therapy in spinal cord injury: Myth VS reality, The Japanese experience	Sherif Rashad
12:15 - 12:30	Ethical and legal considerations in the era of advanced spine surgery technologies	Abhay Nene
12:30 - 12:45	**Q&A**	
12:45 - 13:45	Lunch Break	

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11:30 - 12:45	**Abstract Session 2 (Exhibition Area)**	Speakers
Moderators: Faisal Konbaz, Mohammed Khattab		
11:30 - 11:34	Underreporting of proximal junctional kyphosis and failure in adult spine deformity surgery: a multicenter radiological review using multiple diagnostic criteria	Ahmed Shawky
11:34 - 11:38	Study of spine sagittal alignment according to the SRS Schwab classification before and after osteosynthesis in acute spinal tuberculosis disease	Amin Henine
11:38 - 11:42	Clinical and radiological outcomes of the novel technique: reduction and circumferential fusion without decompression for high-grade spondylolisthesis in adolescents	Mohamed Sakr
11:42 - 11:46	Evaluation of functional outcome and the quality of life with surgical correction of post-tubercular thoracolumbar kyphosis with the posterior approach	Shah Waliullah
11:46 - 11:50	Multicenter external validation of the accuracy of computed tomography criteria for detecting thoracolumbar posterior ligamentous complex injury	Mohamed Ali
11:50 - 11:54	Surgical anterolateral decompression of type A3 thoracolumbar fractures and fixation using vantage anterior plate system. A report of six cases	Mohamed Ismail
11:54 - 11:58	How does vertical laminar fracture impact the decision-making in thoracolumbar fractures? A systematic scoping review and meta-analysis	Mohamed Ali
11:58 - 12:02	Anterior column reconstruction through posterior approach in tubercular spondylodiscitis	Shah Waliullah

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12:02 - 12:12	Discussion	All Speakers
12:12 - 12:16	Comparative analysis of three generations of vertebral body augmentation procedures for osteoporotic compression fractures - our experience	Dhinesh N L
12:16 - 12:20	Far-lateral cervical approach as a minimally invasive technique for excision of upper cervical anterolateral and anterior meningiomas and dumbbell schwannomas- technical report and case series	Ali Abumadawi
12:20 - 12:24	Comparative radiological outcomes of stand-alone cage versus anterior cervical discectomy and fusion (ACDF) with plating: A retrospective analysis	Amgad Mohamed Elshoeibi
12:24 - 12:28	C5 pedicle-subtraction-osteotomy (PSO) for focal cervical kyphosis following failed anterior cervical discectomy and fusion: A case report	Mansour Aljishi
12:28 - 12:32	Anterior cervical corpectomy and fusion with stand-alone cages in patients with multilevel degenerative cervical spine disease is safe	Mohamed Tohamy
12:32 - 12:36	Role of C2-1 spacer and grafting in basilar invagination and C2-1 instability	Wael Alkasem
12:36 - 12:45	Discussion	All Speakers

26 January 2025

13:45 -14:55	**Session 3: Spine Trauma: Current Concepts and Practices, A Case Based Discussion**	Speakers
Moderators: Marcus Head, Tony Tannoury, Wael Alsammak		
13:45 - 13:55	Case 1 : Post traumatic cervical kyphosis: Tips & Tricks	Abdulaziz Al Mutair
13:55 - 14:05	Case 2 : Gunshot injury to the spine	Adnan Alkandari
14:05 - 14:15	Case 3 : A rare case of traumatic upper cervical instability, Evidence-based management	Mohammad El Sharkawy
14:15 - 14:25	Case 4 : Spinal trauma dilemmas	Rami Al Qroom
14:25 - 14:35	Case 5 : Cervical case, Odontoid fracture, Challenges in management	Khalifa Al Ghafri
14:35 - 14:45	Case 6 : Thoracolumbar fractures: Evaluation & management Qatar experience	Ghanem Al Sulaiti
14:45 - 14:55	Case 7 : Challenges with cervical Spine trauma	Mohammad Asha
14:55 - 15:10	Coffee Break	

26 January 2025

15:10 - 16:10	Session 4: My Worst Case	Speakers
Moderators: Waleed Awwad, Imad Hashim, Sami Aleissa, Ziad Aljian		
15:10 - 15:20	**Case 1:** When to stop the snowball	Tony Tannoury
15:20 - 15:30	**Case 2 :** The unexpected turn: When less isn't always more!	Ahmed Al-Jahwari
15:30 - 15:40	**Case 3 :** Avoidable events	Ali Aboumadawi
15:40 - 15:50	**Case 4 :** Spinal deformity	Tarek Elfiky
15:50 - 16:00	**Case 5 :** Things can always get worse	Ahmed Shawky
16:00 - 16:10	**Case 6 :** How deep is your TLIF cage?	Abhay Nene
16:10 - 17:20	Session 5: Challenging Cases: Hosting Country "UAE" Experience	Speakers
Moderators: Ali Baaj, Anas Dyab, Oscar Alves		
16:10 - 16:20	**Case 1:** Revision spine surgery a case discussion	Charbel Moussallem
16:20 - 16:30	**Case 2:** MIS in adult spine deformity	Firas Husban
16:30 - 16:40	**Case 3:** Case with take home messages, Tips & Tricks	Ziad Aljian
16:40 - 16:50	**Case 4:** Dural tears	Imad Hashim
16:50 - 17:00	**Case 5:** Surgical approaches to fractures of L3, L4, L5 vertebra	Waseem Aziz
17:00 - 17:10	**Case 6**: How many times do I have to perform an I&D to get rid of this infection?	Nader Hebela
17:10 - 17:20	**Case 7**: Spine fixation failure and peri-implant infection	Osama Aldahamsheh
17:20 - 17:30	**Closing Remarks**	

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ABSTRACTS

ABSTRACT 1

Study of Spine Sagittal Alignment According to the SRS Schwab Classification before and after Osteosynthesis in Acute Spinal Tuberculosis Disease

Author Name: Amin Henine

Introduction & Objectives: Tuberculosis of the vertebral column can lead to significant kyphotic deformities, disrupting the spine's normal architecture. Despite appropriate medical treatment, the healing phase is prolonged. This study aimed to analyze spinal sagittal alignment before and after early surgical instrumentation in patients with acute spinal tuberculosis and to assess the efficacy of this intervention.

Methods: This prospective single-center study included 21 patients (19 women, 2 men) with a mean age of 42 years (range 19–67). The disease locations included 2 cervical, 8 thoracic, 7 thoracolumbar, and 4 lumbar cases. All patients underwent instrumentation and fusion. Spinal alignment was evaluated using full-spine radiographs (AP and lateral views) and included parameters defining pelvic-spinal harmony: Pelvic Incidence (PI) – Lumbar Lordosis (LL), Sagittal Vertical Axis (SVA), and Pelvic Tilt (PT).

Results: Patients were followed for an average of 32.7 months (range 7–72). Preoperatively, pelvic-spinal harmony (PI–LL) was within normal limits (<10°), measured at 7.4° ± 11.9° (range -8° to 40°), and remained stable postoperatively at 7.3° ± 11.7° (range -8° to 40°). The SVA was also within normal limits (<4 cm), recorded at 1.2 cm ± 5.1 cm (range -11.2 cm to 13.5 cm) preoperatively and 3.1 cm ± 5.1 cm (range -6.1 cm to 12.4 cm) postoperatively. PT remained normal (<20°), measured at 17.1° ± 6.4° (range 10° to 30°) pre-surgery and 14.2° ± 6.0° (range 6° to 26°) post-surgery.

Conclusion: In early-stage Pott's disease, spinal sagittal balance is minimally altered. Early stabilization with simple surgical instrumentation effectively preserves spinal sagittal alignment throughout the fusion process.

ABSTRACT 2

Comparative Radiological Outcomes of Stand-alone Cage versus Anterior Cervical Discectomy and Fusion (ACDF) with Plating: A Retrospective Analysis

Author Name: Amgad Mohamed Elshoeibi

Affiliation: Qatar University, College of Medicine, QU Health, Doha-Qatar

Introduction & Objectives: Anterior cervical discectomy and fusion (ACDF) is a widely used surgical technique for neural decompression in degenerative cervical radiculopathy and cervical myelopathy. The debate over the superiority of ACDF augmented with anterior cervical plate (ACDF-CPA) versus stand-alone cage (ACDF-SA) persists, as both techniques remain prevalent. This study aimed to compare radiological outcomes of ACDF-SA and ACDF-CPA in single-level cervical degenerative disc disease.

Methods: This retrospective review analyzed data from patients who underwent single-level ACDF for cervical radiculopathy or myelopathy between January 2011 and December 2019. Inclusion criteria comprised adult patients with at least 12 months of follow-up. Exclusion criteria included systemic infections, trauma injuries, malignancy history, inadequate radiographs, or less than 12 months of follow-up. Radiological outcomes evaluated included cage subsidence, fusion rates, and adjacent segment degeneration, assessed independently by two senior orthopedic spine fellows. Adjusted risk ratios (ARRs) were calculated to compare outcomes, adjusting for age and gender.

Results: A total of 43 patients were included in the study, with 58% undergoing ACDF-SA and 42% undergoing ACDF-CPA. At six months, the overall fusion rate was 76%, with ACDF-SA achieving 88% and ACDF-CPA achieving 61%. By 12 months, the overall fusion rate was 81%, showing no significant difference between groups. Cage subsidence and adjacent segment degeneration rates were comparable across both groups at six and 12 months. Adjusted relative risk analysis indicated a 50% higher probability of fusion at six months in the ACDF-SA group compared to ACDF-CPA (95% CI: 1.01–2.22) and a 22% higher probability at 12 months, though this was not statistically significant (95% CI: 0.90–1.64). Female patients were associated with higher fusion rates and lower subsidence risks at 12 months.

Conclusion: ACDF with anterior cervical plate augmentation did not demonstrate superior radiological outcomes compared to the conventional stand-alone cage in single-level cases. Both techniques showed similar results for cage subsidence, adjacent segment disease, and fusion rates at 12 months. However, the stand-alone cage group achieved faster fusion at six months than the plate group.

ABSTRACT 3

Physicians' Referral Preferences: Orthopedic Spine Surgeons vs. Neurosurgeons, a Multinational Study in the Middle East

Author Name: Sereen Halayqeh

Affiliation: Hospital for Special Surgery – USA

Introduction & Objectives: Spine pathologies are diverse, with overlapping treatment options that can be provided by both orthopedic spine surgeons and neurosurgeons. This cross-sectional study aimed to compare referral patterns for spinal pathologies from physicians in various medical specialties to either orthopedic spine surgeons or neurosurgeons in the Middle East.East.

Methods: A multinational cross-sectional online survey was conducted to investigate referral decisions for patients requiring long-term spinal care to either orthopedic spine surgeons or neurosurgeons. The study sample comprised health professionals actively practicing in the Middle East, primarily from Saudi Arabia, Iraq, Egypt, Jordan, and Palestine. Statistical analyses were performed using IBM SPSS version 27.

Results:

- A total of 749 responses were collected, of which 725 were included in the final analysis. Most healthcare professionals practiced at university hospitals (51.9%), followed by community hospitals (23.9%) and private hospitals (22.8%). The majority of respondents had less than 5 years of practice experience (30.2%), while 22.8% had between 6 and 10 years of experience. The most represented specialties were internal medicine (14.6%), pediatrics (9.5%), general surgery (9.2%), general practice (9.2%), and orthopedic surgery (8.1%).

- Of the respondents, 77% reported having access to a comprehensive spine institute, while 23% did not. When asked about their perception of equal training between neurosurgeons and orthopedic spine surgeons, responses were nearly evenly distributed: 32.1% agreed, 33.4% disagreed, and 34.5% were neutral.

- Regarding who provides better long-term spinal care, opinions were closely split, with 52.8% favoring neurosurgeons and 47.2% favoring orthopedic spine surgeons. Access to a comprehensive spine institute significantly influenced referral preferences for long-term spinal care (P = 0.024). Without access to a spine institute, 60.5% of participants preferred referring to neurosurgeons, while 39.5% preferred orthopedic spine surgeons. Participants with access to a spine institute exhibited a more balanced preference, with 50.5% favoring neurosurgeons and 49.5% favoring orthopedic spine surgeons.

- When asked to choose between orthopedic spine surgeons and neurosurgeons for specific spinal pathologies:
  Radiculopathies, intra- and extradural spinal tumors, and minimally invasive spinal surgeries were significantly referred to neurosurgeons ($P < 0.001$).

  Spinal fractures, sacroiliac joint pain, scoliosis, kyphosis, spinal fusions, and disc replacements were primarily referred to orthopedic spine surgeons ($P < 0.001$).

  Referrals for chronic neck and back pain were evenly distributed between the two specialties ($P = 0.277$).

  A logistic regression model adjusted for demographic factors revealed no specific patient characteristics significantly influenced physicians' perceptions of which specialty provides better long-term comprehensive spinal care.

Conclusion:

Referral preferences between neurosurgeons and orthopedic spine surgeons for long-term spinal care were nearly evenly split. Access to a spine institute significantly influenced referral decisions, and patterns varied depending on the specific spinal pathology.

ABSTRACT 4

Comparative Analysis of Three Generations of Vertebral Body Augmentation Procedures for Osteoporotic Compression Fractures: Our Experience

Author Name: Dhinesh N L

Affiliation: Fellow in Spine Surgery, Sri Ramachandra Medical College and Research Institute.

Introduction & Objectives: Osteoporotic fracture incidence typically ranges between 500 and 1000 per 100,000 person-years among adults aged 50 and older. In the older population, treatment options tend to be limited. In view of this, we need modalities that avoid anesthetic complications while providing complete pain relief. Vertebral body augmentation (VBA) procedures have evolved significantly, with vertebroplasty, kyphoplasty, and vertebral body stenting emerging as primary techniques for treating osteoporotic vertebral compression fractures (OVCFs). This paper presents a comparative analysis of these three generations of VBA procedures based on our experience with a sample size of 150 patients, divided equally into three cohorts of 50 patients each, with a follow-up duration of one year.

Methods: Our study retrospectively evaluated clinical outcomes, including pain relief, functional improvement, and complication rates. Pain was assessed using the visual analog scale (VAS), while functional outcomes were measured with the Oswestry Disability Index (ODI). Radiological outcomes, such as vertebral body height restoration and segmental kyphosis correction, were also evaluated. Postoperative assessments were performed at 1 week, 3 months, 6 months, and 1 year.

Results: The results demonstrated significant reductions in VAS scores across all groups, with vertebroplasty achieving an average decrease of 6.5 points, kyphoplasty 7.8 points, and vertebral body stenting 8.4 points at the one-year follow-up. Functional improvements, as measured by ODI, were also notable: vertebroplasty showed a mean improvement of 45%, kyphoplasty 52%, and vertebral body stenting 58%. Complication rates varied among the cohorts, with vertebroplasty exhibiting the highest rate of cement leakage (12%) and re-fractures (8%). Kyphoplasty had a lower complication rate (5% leakage, 2% re-fractures), while vertebral body stenting demonstrated the lowest overall complications (2% leakage, no re-fractures).

Conclusion: This comparative analysis highlights the evolving landscape of vertebral augmentation procedures. While all three techniques are effective for pain relief, vertebral body stenting shows promising results in terms of functional recovery and safety profile. These findings advocate for a tailored approach to selecting VBA techniques based on individual patient characteristics and clinical needs, ultimately enhancing patient outcomes in the management of OVCF.

ABSTRACT 5

Efficacy of a Needle-Shaped Biphasic Calcium Phosphate Ceramic versus Autograft in Instrumented Posterolateral Spinal Fusion: A Multicenter Randomized Controlled Noninferiority Trial with Intrapatient Design

Author Name: Katherine Sage

Affiliation: Kuros Biosciences, Atlanta, GA, USA

Introduction & Objectives: Successful spinal fusion with a solid bone bridge between the vertebrae is traditionally achieved by grafting with autologous iliac bone. However, the disadvantages of autograft and unsatisfactory fusion rates have prompted the exploration of alternative bone grafts. This study investigates a slowly resorbable biphasic Calcium Phosphate bone graft with submicron microporosity (BCP<µm) as an alternative for autograft.

Methods: Adults indicated for lumbar posterolateral fusion (PLF; one to six levels) were enrolled at five participating centers. After bilateral instrumentation and fusion-bed preparation, the randomized allocation side (left or right) was disclosed. Per segment, 10cc of BCP<µm granules (1-2 mm) were placed in the posterolateral gutter on one side and 10cc autograft on the contralateral side. Fusion was systematically scored on one-year follow-up CT scans. The study was powered to detect >15% inferiority with binomial paired comparisons of the fusion performance score per treatment side. At the segment level, a Generalized Estimating Equations (GEE) model was used to account for the clustering of fusions within segments and within patients.

Results: Out of 100 patients (57 ±12.9 years, 62% female), 91 subjects and 128 segments were analyzed. The overall posterolateral fusion rate per segment (left and/or right) was 83%. For the BCP<µm side, the fusion rate was 79% vs. 47% for the autograft side (difference 32 percentage points, 95% CI = 23 to 41). The estimated odds ratio was 4.2 (95% CI = 2.7 to 6.8) in favor of the BCP<µm. Analysis of the primary outcome confirmed the non-inferiority of BCP<µm with an absolute difference in paired proportions of 39.6% (95% CI = 26.8 to 51.2%, p<0.001).

Conclusion: This clinical trial demonstrates non-inferiority and even superiority of BCP<µm as a standalone ceramic compared to autograft for posterolateral spinal fusion. Further studies are needed to confirm these findings, but these results challenge the belief that autologous bone is the optimal graft material.

ABSTRACT 6

C5 Pedicle-Subtraction-Osteotomy (PSO) for Focal Cervical Kyphosis Following Failed Anterior Cervical Discectomy and Fusion: A Case Report

Author Name: Mansour Aljishi

Affiliation: Artemed Klinikum München Süd - Munich, Germany

Introduction & Objectives: Anterior cervical discectomy and fusion (ACDF) is a standard surgical intervention for cervical spine pathologies; however, complications such as cage subsidence and cervical malalignment can occur, necessitating revision surgery. We present the case of a 49-year-old male with spondylarthritis and (undiagnosed) osteoporosis who developed symptomatic cervical kyphosis following failed ACDF. Due to the particular aspects of the case (cervical malalignment, neck pain, secondary anterior osteophytic bridging, and the need for posterior stabilization), an all-posterior approach was considered.

Methods: The patient had undergone ACDF at C4-C6 levels using PEEK cages 18 months prior, resulting in persistent neck pain and radiculopathy in the C5 dermatome. Despite conservative measures and posterior foraminotomies (Frykholm), symptoms persisted. We weighed the relative risks and benefits of a repeat anterior approach with 2-level-corpectomy and reconstruction plus additional posterior fixation versus an all-posterior option – even though cervical PSO at the C5-level has not previously been described. A PSO of the C5 vertebra was performed, resulting in a 30-degree sagittal correction.

Results: Key factors influencing the decision-making process included the patient's underlying symptomatic spondylarthritis after posterior foraminotomies, the particular risks of a revision anterior approach, the newly diagnosed osteoporosis, stable anterior bridging osteophytes, and the possibility of an existing low-grade infection. The surgical procedure under multimodal intraoperative neuromonitoring (mIONM) involved meticulous exposure, pedicle subtraction osteotomy with complete removal of all posterior elements of C5, and instrumentation placement, resulting in successful correction of cervical malalignment and preservation of neurological function. The patient's immediate postoperative course was largely uneventful, with early mobilization and return to functional status. No additional levels were fused.

Conclusion: This case highlights the potential value of posterior corrective spinal osteotomies, even at higher cervical levels, in managing focal cervical kyphosis following failed ACDF, particularly in patients with comorbidities such as spondyloarthritis and osteoporosis. By carefully considering patient-specific factors, favorable outcomes can be achieved, with significant improvement in symptoms and quality of life. Long-term follow-up is essential to assess the durability and efficacy of this surgical intervention in maintaining spinal stability and functional outcomes.

ABSTRACT 7

Results of Biphasic Calcium Phosphate Bone Graft with Submicron Needle-Shaped Surface Topography as Standalone Alternative to Autograft are Favorable in a Prospective, Intra-patient Controlled Trial

Author Name: Katherine Sage

Affiliation: Kuros Biosciences, Atlanta, GA, USA

Introduction & Objectives: Pseudoarthrosis after spinal fusion is an important complication leading to revision spine surgeries. Iliac Crest Bone Graft (ICBG) is considered the gold standard, but with limited availability and associated co-morbidities, spine surgeons often utilize alternative bone grafts. This study serves to determine the non-inferiority of a novel submicron-sized needle-shaped surface biphasic calcium phosphate (BCP<µm) as compared to autograft in instrumented posterolateral spinal fusion (PLF).

Methods: Adult patients indicated for instrumented PLF of one to six levels from T10-S2 were enrolled at five participating centers. The randomized allocation side of the graft type was disclosed after preparation of the bone bed. One side was grafted with 10 cc of autograft per level containing a minimum of 50% ICBG. The other side was grafted with 10 cc of BCP<µm granules standalone. In total, 71 levels were treated. Prospective follow-up included a fine-cut (<1mm) Computerized Tomography (CT) at one year. Fusion was systematically scored as fused or not fused per level per side by two spine surgeons blinded for the procedure.

Results: The first fifty patients enrolled are included in this analysis. The diagnoses included deformity (56%), structural instability (28%), and instability from decompression (20%). The fusion rate for BCP<µm was 76.1% (54/71 levels), which compared favorably to the autograft fusion rate of 43.7% (31/71 levels). Fusion of the BCP<µm side was not contingent upon fusion of the autograft side, as 36.6% (26/71) of levels fused on the BCP<µm side but did not fuse on the autograft side. Statistical analysis through binomial modeling showed that the odds of fusion of BCP<µm was 2.54 times higher than that of autograft.

Conclusion: This preliminary data, aiming to determine the inferiority of standalone BCP<µm as compared to autograft for posterior spinal fusions, is promising. Ongoing studies to increase the power of the statistics with more patients are forthcoming.

ABSTRACT 8

Comparative Analysis of Morphological Changes in Multifidus Muscle Regarding Surgical Techniques for Single-Level Lumbar Decompression

Author Name: Dongeon Lee

Affiliation: Saint Marys Hospital Seoul

Introduction & Objectives: This study aims to compare the morphological changes in the multifidus muscles following single-level unilateral laminotomy bilateral decompression and discectomy using three distinct surgical techniques: Microscopic open surgery microscopic tubular surgery full-endoscopic surgery.

Methods: A retrospective, single-center study with 115 patients was finally included for analysis. Inclusion criteria: Single-level ULBD or discectomy. Three techniques: 1. Microscopic open surgery using Caspar retractor, 2. Microscopic tubular, 3. Full-endoscopic technique. Preoperative and follow-up MRI (>12 months) are available. Exclusion criteria: Revision, multi-level, infection, lumbar operation history on the index level. 37 patients underwent microscopic open surgery, 31 patients underwent microscopic tubular surgery, and 47 underwent full-endoscopic surgery.

Results: In the f/u MRI of patients who underwent tubular ULBD, the cross-sectional area of the multifidus muscle was found to decrease by an average of 10% or more, while the cross-sectional area of the muscle in patients who underwent endoscopic ULBD was maintained.

Conclusion: Full-endoscopic surgery is the least invasive technique for the multifidus muscle during single-level lumbar decompression, while microscopic tubular surgery results in the most pronounced morphologic changes in the multifidus muscle. Although the three surgical techniques demonstrated similar clinical outcomes, their respective impacts on the multifidus muscles may differ.

ABSTRACT 9

A Novel Technique to Decrease the Risk of Infection Post Coccygectomy: A Case Series Study

Author Name: Mohannad W Awwad

Affiliation: Medical student, College of Medicine, King Saud University, Riyadh, Saudi Arabia

Introduction & Objectives: Coccygectomy is the definitive treatment of coccygodynia refractory to conservative therapy, but post-operative wound infection poses a significant challenge in these patients. We introduce a novel peri-operative technique incorporating a specific pre-operatively dietary regimen, polyethylene glycol enema, and prophylactic antibiotics. Post-operatively, patients adhered to strict hygienic protocols in addition to receiving antibiotics. This technique successfully reduced the incidence of surgical site infection post-coccygectomy to a rate of 0.0 %.

Methods: A retrospective review was conducted on 21 patients who underwent partial or complete coccygectomy for coccygodynia refractory to 6 months of conservative therapy. Patients were treated using our novel protocol to minimize the infection risk and significant improvement in their pain.

Results: All of the patients experienced uneventful post-operative recovery except for 1 solitary case of delayed wound healing. This case was treated with a silver-impregnated dressing and demonstrated full wound recovery 1 week later. Additionally, pain scores showed a significant reduction in pain before and after surgery. These results highlight the efficacy of our enhanced peri-operative protocol in preventing surgical site infection as well as substantial pain relief.

Conclusion: Our findings are consistent with the existing literature, demonstrating that an enhanced peri-operative protocol not only effectively prevents post-operative infections but also facilitates significant pain relief in patients undergoing coccygectomy. This novel peri-operative protocol may offer a new standard for managing post-surgical outcomes in coccygectomy, though prospective studies are needed to further validate these results.

ABSTRACT 10

Endoscopic Transforaminal Discectomy for Recurrent Lumbar Disc Herniation

Author Name: Ahmed Baraka MD

Affiliation: Apex Spine Center Munich

Introduction & Objectives:
Recurrent herniation is a significant problem as scar formation and progressive disc degeneration may lead to increased morbidity after traditional posterior re-operation. The advantage of the ETD could be that there is no need to go through the old scar tissue. The disadvantage may be a long learning curve for the spinal surgeon.

Methods:
First, a discography of at least 2 levels was conducted. The prolapsed or ruptured part of the posterior disc segment was removed with special forceps and special curettes in the outside-in technique. The procedure was performed under analgosedation.

Results:
At two years 87 % of the patients rated the result of the surgery as excellent or good. 10,3 % reported a fair and 2,7 % patients an unsatisfactory result. Patients recorded an average improvement of their back pain of 6,6 points and 7,2 points of their leg pain on the VAS scale(1-10). According to Mac Nab criteria, 33,2% of the patients felt fully regenerated, 52 % felt their efficiency to be slightly restricted, 11,8% felt their efficiency noticeably restricted and 3% felt unaltered. All patients had a 3-month follow-up where possible complications were registered. The complication included: 5 nerve root irritations, 9 (2,1%) early recurrent herniations (<3 months), and 32 (7,3 %) late recurrent herniations (>6 months). There was no case of infection or discitis.

Conclusion:
Endoscopic transforaminal discectomy appears to be an effective treatment with few complications and high patient satisfaction for recurrent disc herniation.

ABSTRACT 11

The First Case of Robot-Assisted Uniportal and Biportal Endo-foraminotomy

Author Name: Maria Camila Pedraza

Affiliation: The Catholic University of Korea Seoul ST.MARY`S Hospital

Introduction & Objectives:

With the introduction of various diagnostic imaging techniques and management protocols, less invasive methods have been developed to enhance patient safety and reduce complications. The use of robotic assistance in minimally invasive uniportal and biportal spine surgeries offers increased precision, helps preserve surrounding anatomical structures during the procedure, and reduces radiation exposure for the surgical team.

Methods:

A case is presented involving a patient with multilevel degenerative spinal pathology, including symptoms resulting from foraminal narrowing. The patient also has a history of chronic myeloid leukemia as a comorbidity. To address these issues, the patient undergoes foraminotomy using uniportal and biportal endoscopic techniques with robotic assistance.

Results:

Using a uniportal and biportal endoscopic approach guided by robotic assistance, key anatomical landmarks were verified intraoperatively to ensure the successful execution of the foraminotomy. The patient experienced a resolution of clinical symptoms upon admission, with a swift recovery and early discharge from the hospital.

Conclusion:

Minimally invasive spinal techniques can be refined to enhance precision and safety during procedures, utilizing robotic-endoscopic techniques to prevent damage to nearby anatomical structures and ensure proper preservation of bone and nerve tissues. This approach helps minimize intraoperative complications and reduces the likelihood of needing additional interventions. Additionally, robotic assistance lowers the surgical team's exposure to radiation during the operation.

ABSTRACT 12

Comparison in Complication of Endoscopic vs. Open Discectomy

Author Name: Mohamed Malabari

Affiliation: Saudi German Hospital Jeddah

Introduction & Objectives:

Comparison of the complications between different techniques of endoscopy And microscopic discectomy surgery

Methods:

Literature review

Results:

Endoscopic surgery is safe surgery

Conclusion:

Complications in endoscopy mainly less safe major complications not found in the endoscopy group

ABSTRACT 13

Unilateral Biportal Endoscopic Spine Surgery : Managing Complex and Revision Cases with a Minimally Invasive Approach

Author Name: Jin Hwa Eum

Affiliation: Ain Al Khaleej Hospital

Introduction & Objectives: Revision spinal surgeries present challenges due to complications from previous surgeries, such as scar tissue and altered anatomy. Unilateral biportal endoscopic (UBE) spine surgery is a versatile, minimally invasive technique that can effectively address a wide range of spinal pathologies, including complex and revision cases. This study aimed to evaluate the safety and efficacy of UBE spine surgery in managing complex and revision spinal cases through a series of three challenging patient cases.

Methods: This study retrospectively reviewed three challenging cases managed with UBE surgery. The cases included a cervical spine revision, a lumbar spine revision, and a complex thoracolumbar pathology in an elderly patient. Each case was evaluated for clinical outcomes, including VAS scores, neurological function, and overall patient satisfaction.

Results: Case 1 involved a 45-year-old female who experienced persistent radicular pain after anterior cervical discectomy and arthroplasty. UBE decompression resulted in complete pain relief (VAS 8/10 to 0/10) at two-year follow-up. Case 2 was a 49-year-old male with cauda equina syndrome post-L5/S1 PLIF, who showed marked improvement in left foot power (0/5 to 4/5) and reduced VAS scores (9/10 to 1/10) at six-month follow-up. Case 3 involved a 71-year-old female with pathological fractures and multiple comorbidities where UBE cord decompression, kyphoplasty, and screw fixation performed under local anesthesia resulted in significant pain relief (VAS 0-1/10) and improved mobility at two-year follow-up.

Conclusion: This case series showcases the versatility of UBE surgery in managing complex and revision spinal cases, with excellent clinical outcomes, especially in patients with significant comorbidities.

ABSTRACT 14

Optimizing Revision Lumbar Surgery: The Unilateral Biportal Endoscopic Approach

Author Name: Alhareth Maaya

Affiliation: Ain Alkhaleej Hospital

Introduction & Objectives: Revision lumbar spine surgeries present significant challenges due to altered anatomy and scar tissue from previous procedures. Traditional open revision surgeries often resulting in increased morbidity and longer recovery times. Unilateral biportal endoscopic (UBE) spine surgery, a minimally invasive technique, offers a promising alternative. This study investigates the efficacy and safety of UBE in managing complex lumbar revision surgeries.

Methods: A retrospective review was conducted on 10 patients who underwent revision lumbar surgery using UBE between February 2022 and February 2024. Patient demographics, surgical details, clinical outcomes, and complications were analyzed. Clinical outcomes were assessed using the Visual Analog Scale (VAS) for pain and the Oswestry Disability Index (ODI), with follow-up periods ranging from 6 months to 2 years. Statistical analysis was performed to determine the significance of improvements in VAS and ODI scores.

Results: The patient cohort included individuals with previous surgeries such as discectomies and fusions. Postoperatively, patients exhibited significant improvements in VAS scores for leg and back pain, as well as ODI scores. The mean preoperative VAS score for leg pain was 8.1, which improved to 0.8 postoperatively ($p < 0.001$). The mean preoperative VAS score for back pain was 7.5, which improved to 1.7 postoperatively ($p < 0.001$). Additionally, the mean ODI score improved from 67.5 preoperatively to 17.5 postoperatively ($p < 0.001$). No major complications were observed, and patient satisfaction was high.

Conclusion: Unilateral biportal endoscopic spine surgery is an effective and minimally invasive technique for managing complex and revision lumbar cases. The significant improvements in VAS and ODI scores, coupled with minimal complications, underscore the potential of UBE as a superior alternative to traditional open revision surgeries. Future studies with larger cohorts and longer follow-up periods are recommended to further validate these findings.

ABSTRACT 15

Open Midline Decompression and Ligament Reconstruction for Multiple Level Spinal Stenosis in Elderly Patients

Author Name: Shin-Jae, Kim

Affiliation: Chungdam Wooridul Spine Hospital, Seoul, South Korea

Introduction & Objectives: Multiple lumbar spinal stenosis (LSS) is a common degenerative spinal disease whose incidence is increasing with the aging of the modern world. Fusion surgery is abandoned in elderly patients because of their old age and the risk of blood loss during surgery. For elderly patients, decompression spinal surgery is needed with preservation of the posterior arch. We describe the technique and clinical results of open midline decompression (OMD) and ligament reconstruction, which can provide alternative stabilization for elderly patients with multiple LSS.

Methods: This retrospective review was performed on elderly patients aged 70 years or older who were diagnosed with LSS at three or more levels (with or without spinal instability) and underwent OMD with ligament reconstruction from January 2019 to December 2019. Pre-, and post-operative clinical data, and radiologic data were analyzed.

Results: Overall, 18 men and 27 women underwent OMD with ligament reconstruction between January 2019 and December 2019. Patients' mean age was 76.3 (± 3.79) years, and mean BMI was 24.97 (± 3.16) kg/m2. Thirty-three patients underwent 3-level surgeries, and 12 patients underwent 4-level surgeries. The mean operative time was 240 ± 42.2 minutes (74.6 ± 14.9 minutes per level).

Conclusion: OMD and ligament reconstruction are efficient surgeries that can be safely performed in elderly patients with multilevel LSS. The advantage of sufficient nerve decompression without facet and posterior arch destruction and soft stabilization of the artificial ligament might be partial substitutes for fusion surgery in elderly patients with multilevel LSS.

ABSTRACT 16

Single stage Surgical Treatment of Congenital Spinal Deformity Associated with Intraspinal Anomalies

Author Name: Wael Alkasem

Affiliation: MD Spine Surgeon

Introduction & Objectives:

Congenital spinal deformities associated with intraspinal anomalies are usually treated sequentially, first by treating the intraspinal anomalies followed by deformity correction after a period of 3–6 months, now we are doing a single-stage approach which we assume it show better postoperative results and reduced complication rates

Methods:

41 patients were retrospectively evaluated for the single-stage surgical treatment of congenital spinal deformity with concurrent intraspinal anomalies from 2017 to 2022

Results:

The average angle of deformity was 63°±26° preoperatively, 23°±14° postoperatively, and 25°±14° at the final follow-up. The average surgical time was 220±50 minutes, with a mean blood loss of 1,200±500 mL

Conclusion:

Single-stage surgical intervention for intraspinal anomalies with congenital spinal deformity correction with neuromonitoring is a viable option in appropriately selected patients and has minimum complication rates

ABSTRACT 17

Clinical and Radiological Outcome of Novel Technique of Circumferential Fusion without Decompression for High-Grade Spondylolisthesis in Adolescent

Author Name: Mohamed Sakr

Affiliation: Senior Spine Fellow

Introduction & Objectives: The incidence of Spondylolisthesis in the general population is around 4-8 percent. Isthmic or Lytictype of spondylolisthesis is one of the commonest. The condition has frequently been attributed to stress fracture of the pars interarticularis. A study by Frederickson et al showed that the incidence of spondylolysis and spondylolisthesis were 4.4% and 2.6% respectively at age 6 years and 5.4% and 4.0% respectively, in adulthood.? The difference is attributed to an increase in the degree of slippage seen mainly during the adolescent growth spurt. Though this condition is twice as common in males compared to females; there is a higher incidence of slip progression in the latter group.' Higher grades of slip are known to be associated with a greater rate of slip progression. Spondylolisthesis associated with dysplasia or absence of posterior elements is known to progress significantly. The association of Isthmic type with spina bifida occulta has been reported to be between 24-70 %.47It is now generally accepted that low-grade Isthmic spondylolisthesis can be managed with conservative measures such as activity modification, bracing, exercises, and regular six monthly radiographs to evaluate progression. The treatment of high-grade Isthmic spondylolisthesis (Meverding grade III and above) continues to remain controversial. Various methods of surgical treatment ranging from posterior decompression alone, posterior decompression and posterolateral fusion without reduction, isolated in situ posterior spinal fusion, staged anteroposterior circumferential arthrodesis in situ, combined anterior reduction and posterior stabilisation, L5 vertebrectomy and stabilisation from L4 to S1, posterior instrumented reduction and decompression with posterior arthrodesis have been advocated. This is a retrospective case series reporting a new two-stage procedure to facilitate the reduction of high grade adolescent isthmic spondylolisthesis.

Methods:

Retrospective review of prospective spinal surgical database at GOSH and Evelina Children's Hospitals to identify:• All patients < 21 years undergoing surgical treatment for spondylolisthesis• Study design:• Retrospective case Series Vs retrospective cohort Study• Sub-group options:• Clinical Features:• Pre-operative neurological dysfunction Vs• Radiographic Features:• High-grade Vs Low-grade• ESR review to determine:• Indication for surgery (clinic letter)• Spondylolisthesis type / diagnosis (letter / BSR, if completed)• Dysplastic• Dysplastic with secondary lysis• Isthmic• Symptoms:• Radicular Sensory:• Paresthesia / Numbness• Radicular Motor:• Documented weakness• Documented effect on reflexes• Cauda equina symptoms• Co-morbidities (inc bone / connective tissue disorders) • Surgical plan (booking form / MDT outcome)Final (on-the-day) plan (operation note) - to check for any deviation• Date of admission• Date of surgery. Date of discharge. Time between posterior and anterior stages.
Other key information (if available): Blood loss return to theatre• SSi rate

Results: A total of 25 patients met the inclusion criteria: 12 underwent two-stage surgery, 13 underwent one-stage surgery. Mean operative time: 197 minutes for single-stage, 264 minutes for two stages. Perioperative radiculopathy improved in all patients. All patients achieve fusion. 1 patient had changes in neurophysiology required undo reduction and rescheduled a week later, with no neurological damage. The average hospital stays are 6 days.1 patient had a superficial wound infection required washout and VAC dressing. VAS leg pain improved in all patients, mean post-op VAS leg pain 2.VAS back pain improved in all patients, mean post-op VAS back pain 3. The mean improvement of the slip angle is 33 degrees.

Conclusion: Our technique is safe and efficient for the management of high-grade Spondylolisthesis with a low complication rate.

ABSTRACT 18

Evaluation of Functional Outcome and the Quality of Life with Surgical Correction of Post Tubercular Thoracolumbar Kyphosis with the Posterior Approach

Author Name: Shah Waliullah

Affiliation: King Georges Medical University Lucknow

Introduction & Objectives: Post-tubercular Thoracolumbar deformities with significant Cobbs angle require surgical management for correction. They can be managed by anterior, posterior, or combined procedures. With the advent of posterior approaches, these deformities are now successfully treated with the posterior approach. We evaluated the functional Outcome and the quality of life with surgical management in Patients with post-tubercular thoracolumbar kyphosis.

Methods: 17 patients with either thoracic or thoracolumbar kyphosis, after satisfying our inclusion and exclusion criteria were recruited in our study. All patients were evaluated clinically, radiologically, and neurologically. Pre-operatively all patients underwent whole spine X-rays and MRI. Pre-operatively Visual Analog Scale (VAS) score, Owestry Disability Index (ODI) and Scoliosis Research Society questionnaires (SRS-22) were assessed. All patients were managed by posterior approach with posterior column osteotomy with or without anterior column support and posterior instrumentation. All patients were followed for a minimum of two years. Variations between the baseline and last follow-up were evaluated. The correlation between the baseline score of the SRS-22 score and improvement in the SRS-22 score was evaluated at the final follow-up in all the patients.

Results: The mean surgical time was 184 minutes with a mean intraoperative blood loss of 640.5 mL. At the final follow-up of two years, there was a statistically significant improvement in Cobb's angle, VAS, ODI, and SRS 22. Postoperatively three patients had infections treated with prolonged antibiotics. There was a transient neurological deficit in two patients. There was no long-term neurological complication, implant breakage and deterioration in Cobb's angle.

Conclusion: Surgical treatment of post-tubercular Thoracolumbar kyphosis with a posterior approach only is an effective modality with minimum complications and is significantly associated with the change in HRQOL in appropriately selected patients.

ABSTRACT 19

Anterior Column Reconstruction through Posterior Approach in Tubercular Spondylodiscitis

Author Name: Shah Waliullah

Affiliation: King Georges Medical University Lucknow

Introduction & Objectives: Spinal tuberculosis primarily involves the anterior column, frequently results in the collapse of the vertebral body, if not treated adequately and timely, may result in kyphotic deformity and variable neurological deficit. Treatment requires decompression and correction of deformity that can be achieved either by anterior or posterior approach, anterior approach allows direct decompression, debridement and reconstruction however associated with greater morbidity and complications. We evaluated the efficacy of posterior approach for decompression and anterior column reconstruction in thoracolumbar tubercular spondylodiscitis patients presented with anterior vertebral collapse.

Methods: 22 patients (12 males and 10 females) with diagnosed spinal tuberculosis, average age 31.5±9.3 years, with mean kyphotic angle 54.5 degrees and mean vertebral body loss 1.8. All patients were managed by posterior approach either through extra-pleural or trans-facetal or trans-pedicular by decompression, debridement and anterior column reconstruction by mesh cage with bone grafting and posterior instrumentation. All patients were followed up clinically, radiologically, hematological and neurologically. Patients were followed up initially at six weekly intervals for 4 months then at three monthly intervals to assess long-term complications. Neurological recovery is accessed in terms of Frankel grading. Functional outcome was accessed in terms of Visual Analog score (VAS) and Oswestry Disability Index score (ODI score).

Results: All patients were followed for a minimum of 29 months. There was significant improvement in the VAS score from pre-operatively 9.2 to 1.4 at the final follow-up ($p<.001$). The mean kyphosis correction was 24.3 degrees There was a significant change in kyphotic angle between pre and post-operatively ($p<.05$). There was also a significant improvement in ODI score at the final follow-up from 57.5 to 23($p<.05$). There was also significant neurological recovery ($p<.05$). One patient developed loosening of the implant and deep infection, required the removal of implant.

Conclusion: We observed posterior approach is a safe, effective, and viable approach for the management of spinal tuberculosis as it allows adequate decompression of neural cord and anterior column reconstruction in a single stage, while pedicular instrumentation permits stable spinal fixation and subsequent rapid rehabilitation.

ABSTRACT 20

Multicenter External Validation of the Accuracy of Computed Tomography Criteria for Detecting Thoracolumbar Posterior Ligamentous Complex Injury

Author Name: Mohamed Aly

Affiliation: Prince Mohamed Ben Abdelaziz Hospital Riyadh

Introduction & Objectives: Recent studies have proposed computed tomography (CT) criteria for posterior ligamentous complex (PLC) injury: disrupted if ≥ 2 CT findings, indeterminate if single finding, and intact if 0 CT findings. The study aims to validate the CT criteria for PLC injury externally.

Methods: Three level 1 trauma centers enrolled 614 consecutive patients with acute thoracolumbar fractures (T1- L5) who received Computed tomography (CT) and magnetic resonance imaging (MRI). Three reviewers from each center were the patients from the respective center for sessed CT for facet joint malalignment, horizontal laminar fracture, spinous process fracture, and interspinous widening and MRI for disrupted PLC. The primary outcome is the diagnostic accuracy of CT criteria (0,1, ≥ 2 findings) in detecting disrupted PLC on MRI using all CT readings. Subgroup analysis for each participating center and reviewer was done. The inter-reader agreement on PLC status on MRI and CT criteria was assessed using Fleiss Kappa (k).

Results: The positive predictive value (PPV) for PLC injury was 0 findings, 3%; single positive CT, 43%; ≥ 2 CT findings, 94%, and was consistent among different centers and reviewers. The AUC for ≥ 1 CT findings in detecting PLC injury ranged from 90% to 97%, indicating excellent discrimination for all centers. The inter-reader k on PLC status by MRI and CT criteria was substantial (k >0.60).

Conclusion: This study externally validates the previously proposed CT criteria for PLC injury. ≥ 2 positive CT findings or 0 CT findings can be used as criteria for a disrupted PLC (B-type injury) or intact PLC (A-type injuries), respectively, without added MRI. A single CT finding implies indeterminate PLC status and the need for further MRI assessment. The CT criteria will potentially guide MRI indications and treatment decisions for burst fractures in patients without neurological impairment.

ABSTRACT 21

How Does Vertical Laminar Fracture Impact the Decision-making in Thoracolumbar Fractures? A Systematic Scoping Review and Meta-analysis

Author Name: Mohamed Aly

Affiliation: Prince Mohamed Ben Abdelaziz Hospital Riyadh

Introduction & Objectives: Although vertical laminar fracture (VLF) is generally considered a severity marker for thoracolumbar fractures (TLFs), its exact role in decision-making has never been established. This scoping review aims to synthesize the research on VLF's role in the decision-making of TLFs.

Methods: A systematic review was conducted following PRISMA guidelines. We searched PubMed, Scopus, and Web of Science from inception to 11 June 2023 for studies examining the association of VLF in thoracolumbar fractures with dural lacerations, neurological deficits, radiographic parameters, or treatment outcomes. Additionally, experimental studies that analyze the biomechanics of burst fractures with VLF were included. The studies extracted key findings, objectives, and patient population. A meta-analysis was performed for the association of VLF with dural laceration and neurological deficit, and ORs were pooled with a 95% confidence interval (CI).

Results: Twenty-eight studies were included in this systematic review, encompassing 2,021 patients, and twelve were included in the meta-analysis. According to the main subject of the study, the association of VLF with a dural laceration (n=14), neurological deficit (n=4), radiographic parameters (n=3), thoracolumbar fracture classification (n=2), treatment outcome (n=2). Seven studies with a total of 1010 patients reported a significant association between VLF and neurological deficit (OR= 7.35, 95% CI [3.97, 14.25]; P< 0.001). The pooled OR estimates for VLF predicting dural lacerations was 7.75, 95% CI [2.41, 24.87]; P< 0.001).

Conclusion: VLF may have several important diagnostic and therapeutic implications in managing TLFs. VLF may help to distinguish AO type-A from B-type injuries and A3 from A4. VLF may help preoperatively predict the risk of dural laceration, thereby choosing the optimal surgical strategy. Clinical and biomechanical data suggest VLF may be a valuable modifier to guide the decision-making in burst fractures; however, more studies are needed to confirm its prognostic importance regarding treatment outcomes.

ABSTRACT 22

Surgical Anterolateral Decompression of Type A3 Thoracolumbar Fractures and Fixation Using Vantage Anterior Plate System. A Report of Six Cases

Author Name: Mohamed Awad Mohamed Ismail

Affiliation: Ain Shams University

Introduction & Objectives: Anterior approach for thoracolumbar fracture is an old technique. The VANTAGE system is recently introduced as the spinal anterior fixation plate system. This work reports a three-year follow-up for patients operated by this system. Objectives: This study reports the use of new Vantage (Medtronic Sofamor Danek - Memphis, USA) in the treatment of these fractures and the evaluation of surgical technique feasibility and possible complications.

Methods: Over a 3-year period, 6 male patients with unstable thoracolumbar bursts admitted to the neurosurgery department of Saudi German Hospital were treated with anterolateral decompression and stabilization using the VANTAGE system. Inclusion criteria are; patients without neurologic or with partial neurologic deficits, intact posterior column structures (Type A3, AO classification), marked compromise of the neural canal, average body build, young ages, no history of active or chronic lung diseases, no previous renal surgery or ureteric injuries.

Results: The mean age at surgery was 38 Mean interval between initial injury and vantage plate instrumentation was 5 days Mean follow-up period was 18 months a total of six cases operated on. There was complete canal clearance and correction of deformity in all patients. All patients showed neurologic recovery except one patient with persistent incontinence. No major perioperative complication apart from one case with intercostal nerve injury which improved during follow-up. No hardware-related complications.

Conclusion: An anterior approach to the thoracolumbar spine is very effective in decompression and provides solid fixation by the vantage system. A low profile user-friendly vantage system makes anterior stabilization fixation easy and safe.

ABSTRACT 23

Anterior Cervical Corpectomy and Fusion with Stand-alone Cages in Patients with Multilevel Degenerative Cervical Spine Disease is Safe

Author Name: Mohamed Tohamy

Affiliation: Head of Spine Unit, Rothenburg Hospital, Germany. Consultant of Spine Surgery Ligamenta Spine Center, Frankfurt am Main

Introduction & Objectives: In the case of spinal cord compression behind the vertebral body, anterior cervical corpectomy and fusion(ACCF) prove to be a more feasible approach than cervical discectomy. The next step was the placement of an expandable titanium interbody in order to restore vertebral height. The need for additional anterior plating with ACCF has been debatable and such technique has been evaluated by very few studies. The objective of the study is to evaluate radiographic and clinical outcomes in patients with multilevel degenerative cervical spine disease treated in stand-alone cages for anterior cervical corpectomy and fusion (ACCF).

Methods: Thirty-one patients (66.5 ± 9.75 years, range 53–85 years) were analyzed. Visual Analog Scale (VAS) and the 10-item Neck Disability Index (NDI) were assessed preoperatively and during follow-up on a regular basis after surgery and after one year at least. Assessment of radiographic fusion, subsidence, and lordosis measurement of Global cervical lordosis (GCL); fusion site lordosis (FSL); the anterior interbody space height (ant. DSH); the posterior interbody space height (post. DSH); the distance of the cage to the posterior wall of the vertebral body (CD) were done retrospectively. The mean clinical and radiographic follow-up was 20.0 ± 4.39 months.

Results: VAS-neck ($p = 0.001$) and VAS-arm ($p < 0.001$) improved from preoperatively to postoperatively. The NDI improved at the final follow-up ($p < 0.001$). Neither significant subsidence of the cages nor significant loss of lordotic correction were seen. All patients showed a radiographic union of the surgically addressed segments at the last follow-up.

Conclusion: Application of a stand-alone expandable cage in the cervical spine after one or two-level ACCF without additional posterior fixation or anterior plating is a safe procedure that results in fusion. Neither significant subsidence of the cages nor significant loss of lordotic correction were seen.

ABSTRACT 24

Role of c1-2 Spacer and Grafting in Basilar Invagination and c1-2 Instability

Author Name: Wael Alkasem

Affiliation: MD spine surgeon

Introduction & Objectives:

basilar invagination is a difficult pathology to treat and has a high rate of complication

Methods:

25 patients retrospectively have been reviewed using a c 1-2 joint spacer for reduction and fusion

Results:

c1-2 spacer has a good outcome and avoids anterior odontoidectomy

Conclusion:

This technique should be considered as a sufficient approach for c 1-2 instability and basilar invagination

ABSTRACT 25

Understanding Bilateral MEP Changes during Cord Level Spinal Deformity Surgery: Etiology, Significance and Response

Author Name: Ahmed Shawky

Affiliation: MHBA Head of the department of spinal deformities Helios Klinikum Erfurt, Germany

Introduction & Objectives: Cord-level spinal deformity surgery carries a risk of neurologic injury. Intraoperative neurophysiologic monitoring (IONM) can help reduce the risk of neurologic deterioration and detect intraoperative injuries. This study aims to enhance our understanding of bilateral MEP alerts that occur during cord-level spine deformity surgery.

Methods: 20 international centers prospectively documented IONM (EMG, SSEP, MEP), demographics, radiographs, and surgical events of patients (10-80 years) undergoing spinal deformity correction for a major Cobb>80° or involving a cord-level osteotomy. This study is a descriptive analysis of patients who experienced bilateral MEP alerts during these surgeries. Alerts were further classified into MEP-only or MEP associated with SSEP changes (MEP+SSEP). MEP alerts were defined as a loss of 50% of MEP amplitude from baseline. Surgical (exposure, implant placement, osteotomy, correction/rod placement, traction) and nonsurgical (systemic, anesthesia, technical) events preceding the alert were recorded. The relationship between bilateral MEP alerts with traumatic preceding events, defined as osteotomies or implant placement, was assessed.

Results: Out of 349 cord-level spinal deformity surgeries, 25 patients (7%) experienced a total of 34 bilateral MEP alerts. Of the 34 MEP alerts, 19(56%) were associated with only surgical events, 9(26%) with only nonsurgical events, and 6(18%) with a combination of both. 85% (29/34) of the bilateral MEP alerts were MEP-only. These alerts occurred on an average of 271 minutes from skin incision. 76% (22/29) of the time a surgical event preceded the bilateral MEP-only alert. Correction/rod insertion was the most common surgical event preceding the alert (73%, 16/22), followed by a traumatic event (5/22) and another (3/22). 15% (5/34) of the bilateral MEP alerts were associated with SSEP changes (MEP+SSEP). A surgical event preceded the MEP+SSEP alert 60% (3/5) of the time. All (3/3) of the MEP+SSEP alerts with surgical preceding events occurred after a traumatic event. 80% (20/25) of bilateral MEP alerts with surgical preceding events had bilateral recovery at the time of closure. Recovery rates varied based on the type of preceding event. 88% (7/8) of alerts that occurred after a traumatic event demonstrated bilateral recovery. In contrast, the bilateral recovery rate of alerts after non-traumatic events was lower, at 76% (13/17). Among patients with a bilateral MEP alert, 20% (5/25) developed a neurological deficit immediately after surgery. This comprised 15% (3/20) from the bilateral MEP-only group and 40% (2/5) from the bilateral MEP +SSEP group. Manoeuvres were performed in response to the alerts. By the time of discharge, only 8% (2/25) had a neurological deficit in the MEP-only group and 0 in the MEP+SSEP group.

Conclusion:

Bilateral MEP changes during cord-level spinal deformity surgery occur infrequently and are most often related to surgical events. When MEP alerts occur in isolation, they are more commonly associated with correction maneuvers and rod insertion, potentially indicating an ischemic event to the spinal cord. In contrast, MEP changes accompanied by SSEP alterations after a surgical event are typically linked to more traumatic events. Alerts after traumatic surgical events have higher rates of bilateral intraoperative recovery than alerts after nontraumatic surgical events following appropriate surgical maneuvers.

ABSTRACT 26

Intraoperative Neuromonitoring Has Poor Correlation with Postop Neurological Deficits in Non-Cord Level Adult Deformity Surgery.

Author Name: Ahmed Shawky

Affiliation: MHBA Head of the department of spinal deformities Helios Klinikum Erfurt, Germany

Introduction & Objectives: In non-cord level spinal deformity surgery, postop neural deficits are incompletely associated with intraop neuromonitoring (IONM) alerts. The purpose of this study is to evaluate rates of new neural deficits relative to IONM alerts in non-cord-level spinal deformity surgery. Design: Prospective, international, multi-center cohort

Methods: 20 international centers prospectively documented IONM (EMG, SSEP and MEP), demographics, radiographic findings, and surgical events of adult patients undergoing spinal deformity surgery. Inclusion criteria: neurologically intact, major Cobb>80° or surgery involving any osteotomy. IONM change was defined as loss of amplitude>50% in SSEP or MEP from baseline or sustained EMG activity lasting>10 seconds

Results: Of 197 patients, 22(11.2%) had an IONM alert. More patients were undergoing revision surgery during an alert compared to those with no alert (40.9% vs. 18.9%, p = 0.026). IONM alerts did not correlate with Cobb angle, deformity angular ratio, sagittal vertical axis, or coronal vertical axis. There were a total of 26 alerts in 22 patients - 4 (18.2%) had 2 IONM alerts, while the other 18(81.8%) had 1 alert. MEPs were affected in 21 of 26 alerts (80.8%) and 15(71.4%) of those were recovered. SSEPs were affected in 8 of 26 alerts (30.7%). Lastly, EMGs were affected in only 2(7.7%). 5 of 21 MEP alerts (23.8%) were bilateral, whereas 16(76.2%) were unilateral. The most frequent event preceding an MEP change was an osteotomy in 6(28.6%) of 21 patients. The most frequent nonsurgical event preceding an MEP alert was technical in 5(23.8%), followed by systemic (low blood pressure/anaemia) and anaesthetic in 3 patients each (14.3%). 33 of 197 patients (16.8%) developed a new postop neural deficit. Of these patients, 24(72.7%) had no IONM alert. In the presence of an IONM alert, 9 of 22 (40.9%) had a new neural deficit. IONM alert had a crude negative predictive value (NPV) of 86.1%

Conclusion: In non-cord level spinal deformity surgery, IONM alerts occurred in 11.2% of patients with osteotomy being the most frequent preceding surgical event. A new postop neural deficit was observed in 16.8% of all patients and in 41% of patients with an IONM alert. A surprisingly high 73% of postop neural deficits occurred in patients who did not have an alert. This highlights the need for further refinement of IONM techniques for non-cord-level surgery.

ABSTRACT 27

Underreporting of Proximal Junctional Kyphosis and Failure in Adult Spine Deformity Surgery: A Multicenter Radiological Review Using Multiple Diagnostic Criteria

Author Name: Ahmed Shawky

Affiliation: MHBA Head of the department of spinal deformities Helios Klinikum Erfurt, Germany

Introduction & Objectives:

Proximal junctional kyphosis (PJK) and its severe form, proximal junctional failure (PJF), are common adverse events following adult spine deformity (ASD) surgery, which unfortunately are also frequently underreported due to its variable clinical significance and radiological subtlety. Several PJK criteria have been reported in the literature, affecting the reported PJK/PJF rates. Additionally, subjective clinician diagnoses are prone to bias, posing a challenge in data interpretation. The purpose of the present study was to review radiological data from an international multicenter study of ASD to determine PJK/PJF rates based on different diagnostic criteria and compare them with clinicians' diagnostic reports.

Methods:

A prospective, multicenter, multi-continental, observational longitudinal cohort study was conducted by AO Spine. The study enrolled patients aged ≥60 years undergoing primary spinal fusion surgery of ≥5 levels for coronal, sagittal or combined deformity (PEEDS). Patients with pre and 2-year postoperative standing whole spine X-rays were included in the analyses (n = 166). The proximal junctional angle (PJA) was defined as the sagittal Cobb angle between the upper instrumented vertebra (UIV) and UIV+2. PJK/PJF was diagnosed by the following criteria: (1) Glattes' PJK: (a) ∂PJA (preoperative vs. 2-year post-operative) > 10° and (b) PJA at 2-year post-operative > 10°, (2) ASLS-1 PJF: (a) ∂PJA > 20°, (b) UIV and/or UIV+1 fracture with >20% height loss, (c) screw dislodgement, and (d) spondylolisthesis at UIV+1/UIV > 3 mm, (3) Consensus-based PJF: review by four experts focusing on (a) bone failure: UIV/UIV+1 fracture, (b) construct failure: screw pull-out/cut-out, hook dislodgement, and (c) junctional failure: spondylolisthesis and posterior ligamentous complex damage. Lastly, adverse events were collected from the case report form (CRF), and PJK was defined when denominated as "junctional pathology" or "compression fracture" by 2 years postoperatively.

Results:

The detailed radiologic review identified Glattes' PJK in 84/163 (51.5%) cases, whereas ASLS-1 PJF was diagnosed in 75/164 (45.7%) cases, with only 58 cases (35.6%) fulfilling both criteria. Consensus-based PJF was reported in 87/165 (52.7%) cases. The kappa values against ASLS-1 PJF were 0.47 (95% confidence interval [CI]: 0.34 - 0.61) for Glattes' PJK, showing moderate agreement, and 0.81 (95%CI: 0.72 - 0.90) for consensus-based PJF, indicating almost perfect agreement. The most common criterion for the ASLS-1 PJF diagnosis was a fracture at UIV or UIV+1 (81.3%), followed by ∂PJA > 20° (44.0%) and screw dislodgement (29.3%). On the other hand, PJK reported in CRF was found in only 15 cases, indicating significant underreporting with a kappa value of 0.19 (95%CI: 0.09 - 0.29).

Conclusion:

PJK/PJF rates varied based on different radiologic criteria. PJK was underreported in the PEEDS study in CRF filled by clinicians, in contrast to the radiologic assessment of PJK/PJF based on geometric definitions.

ABSTRACT 28

Iraqi Mentorship program vs fellowship program in Endoscopic spine surgery

Author Name: Ahmed Alqatub

Affiliation: Alhassan Teaching Hospital

Introduction & Objectives:

Differentiation between the two programs and a vital example of the results that we have made in pushing up mentorship with teaching more newly graduated spines surgeons.

Methods:

Comparing the results of database cases and the progress over time in doing endoscopic spine surgery.

Conclusion:

A mentorship program could create a highly ranked spine surgeon.

Use of D Wave in Intramedullary Spine Tumours and Complex Spine Deformities

Author Name: Sivan J. Ali Mohammed

Affiliation: Clinical neurophysiology

Introduction & Objectives:

- D-waves represent a neurogram of the fast neurons of CST which is not significantly influenced by non-surgical induced factors, the technique operates with recordings of potentials from the spinal cord, evaluating the integrity of ascending and descending, and probably propriospinal pathways, within the spinal cord (1)

- This method is a direct clinical application of Patton's and Amassian's work in 1954 [2]. During surgery for intramedullary spinal cord tumors and complex deformity surgeries in the thoracic region, MEPs in the lower limb muscles will frequently disappear, while the D-wave remains unaffected (3)

Methods & Results:

- A study was conducted on 5 cases (4 intramedullary tumor and one severe kyphoscoliosis)

- D wave epidural catheter used in combination with Mep muscle responses.

- Results of monitoring of patients during surgery for intramedullary spinal cord tumor using the combination of D-wave and muscle MEPs.

- Intraoperative prediction of the patient's motor outcome at the end of surgery using this combined method of monitoring.

- Beginning of surgery, if the patient has recordable D-waves caudal to the site of spinal cord pathology together with muscle MEPs, the surgeon can proceed with surgery up to the point where muscle MEPs completely disappear and the amplitude of the D-wave diminishes up to 50% from the baseline-wave can be regarded as the "gold standard" for monitoring, if we do not have a recordable D-wave at the beginning of surgery, we do not know if a complete disappearance of muscle MEPs indicates a transient or permanent postoperative motor deficit. Using these criteria as a guideline, we predicted post-operative motor outcomes.
  If D wave is unchanged or 30% 50% decrease with preserved MEP/post-op motor will be unchanged.
  If D wave is unchanged or 30%50% decrease with unilateral or bilateral MEP loss/the post-op either unchanged or transient paraplegia.
  If D wave 50% decreases with lost MEP bilaterally/probably a motor deficit.
  If both lost long-term motor deficits.
  A) Recording of a well-synchronized D-wave caudally (lower trace) to the intramedullary spinal cord tumor.
  (B) Very small, barely recognizable muscle response with a well-synchronized D-wave epidurally recorded caudal to a high cervical intramedullary tumor.

ABSTRACT 30

Vertebral Body Tethering for Adolescent Idiopathic Scoliosis: Quality of Evidence and Recommendations from a Systematic Overview of Systematic Reviews in Literature

Author Name: Jawad Nouraldeen Derbas

Affiliation: MBBS Hamad Medical Corporation, Doha, Qatar

Introduction & Objectives: This systematic overview investigates prior systematic reviews exploring vertebral body tethering (VBT) in managing adolescent idiopathic scoliosis (AIS). The aim is to assess the quality of the literature and present the current best evidence, and formulate recommendations.

Methods: We independently conducted duplicate electronic searches in Embase, Medline, Scopus, and Web of Science until August 19 2023 for systematic reviews on VBT for AIS. Methodological quality was assessed using Oxford Levels of Evidence, AMSTAR scoring, and AMSTAR 2 grading. The Jadad decision algorithm was utilized to identify the study with the highest quality, representing the current best evidence for recommendations.

Results: Ten systematic reviews meeting eligibility criteria were included. AMSTAR scores ranged from 4 to 10 (mean: 6.8), indicating varied methodological quality. Most studies had critically low reliability in result summaries per AMSTAR 2 grades. The current best evidence (Level IV) suggests VBT as an effective surgical approach for scoliosis, with 73.88% achieving clinical success. However, 15.8% required unplanned reoperations, and 52.17% experienced complications. Thus, patient discussions should address the high reoperation and complication rates associated with this procedure.

Conclusion: The quality of evidence on VBT for AIS is critically low. Despite the systematic overview, and identifying the best evidence in the literature, high-quality recommendations for practice could not be generated. Future studies with extended follow-up periods are imperative to comprehend VBT's utility in AIS management.

ABSTRACT 31

Far-Lateral Cervical Approach as a Minimally Invasive Technique for Excision of Upper Cervical Anterolateral and Anterior Meningiomas and Dumbbell Schwannomas- Technical Report and Case Series.

Author Name: Ali Abu Madawi

Affiliation: Professor in Neurosurgery, Suez Canal University

Introduction & Objectives: To demonstrate the details of the far-lateral approach (FLA) as a minimally invasive technique for the excision of the upper cervical anterolateral and anterior meningiomas and dumbbell schwannomas, and to assess the clinical and radiological outcomes.

Methods: In this technical report and case series, we report the FLA technique and patients who underwent the FLA for C1-C4 anterolateral and anterior meningiomas and dumbbell schwannomas between June 2007 and June 2020. All patients' relative preoperative demographic, clinical, radiographic, operative, histopathological, and perioperative complications and follow-up clinical and radiographic data were reported.

Results: A total of 19 patients including 12 females and 7 males with a mean age of 56.7 ± 17.6 years and a mean duration of symptoms of 12.8 ± 12.3 months were reported. 9 patients with anterolateral meningiomas, 5 with anterior meningiomas, and 5 with dumbbell schwannomas underwent uneventful FLA procedures. Gross total resection of tumors was reported in 17 patients (89.5%). Preoperative JOA score was normal in ten, grade I in five, and grade II in 4 patients, while at the last follow-up, it improved to normal in seventeen and grade I in two patients. Reported postoperative JOA scores at 6 months and at the last follow-up showed that all patients improved at least one grade on JOA scores. There was a CSF leak in three patients and a superficial wound infection in one.

Conclusion: Our results advocate the far-lateral cervical approach as a minimally invasive technique in the resection of the upper cervical anterolateral 1 and anterior meningiomas and dumbbell schwannomas as a safe and effective 2 technique.

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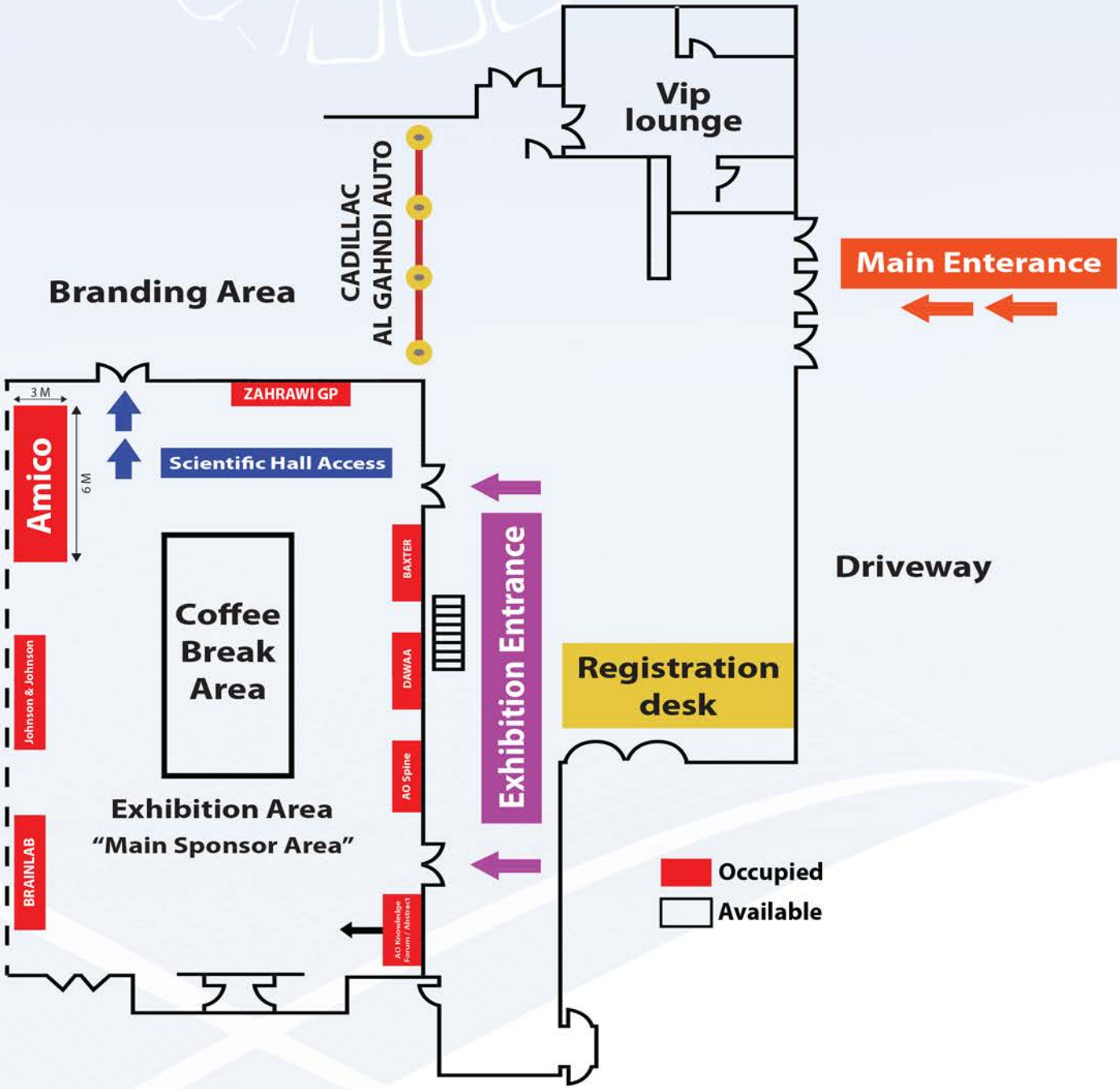
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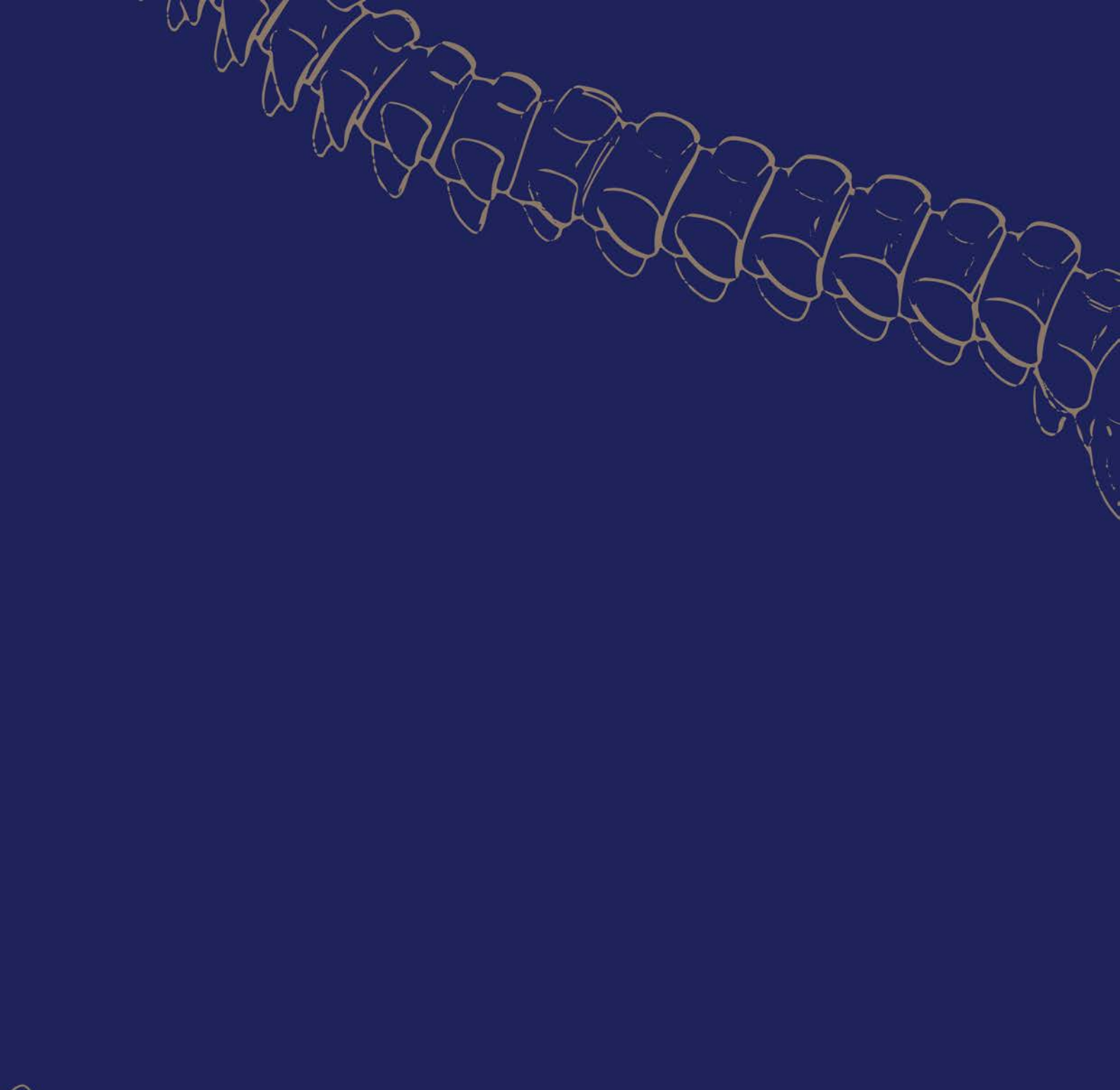

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