

Keynote Forum  
November 26, 2018

## *Spine 2018 & Addiction 2018*



Joint Event  
3<sup>rd</sup> International Conference on  
**Spine and Spine Disorders**  
&  
International Conference on  
**Addiction Research and Therapy**  
November 26-27, 2018 | Dubai, UAE

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## Giancarlo Guizzardi

*Tuscany Surgical Center, Italy*

### Ten years results with Interlaminar Disc Assistance implant "IntraSPINE®"

#### Introduction:

"Motion Preservation" it is not a name or a fashion, but when indicated, is a philosophy like "Minimally Invasive Surgery" or "Endoscopic Surgery" etc. To preserve the movement in the lumbar DDD surgery in the past 15 years have been used, often by chance, an unbelievable number of interspinous devices placed on the market. But the literature clearly shows us how with age the spinous processes undergo radical changes in their morphology (J.R. Jenkins 2001 and C. Aylott 2012); with the time from the implantation was also clearly highlighted a bone remodeling with loss of correction (R. Sobottke 2009), just to spinous processes fractures (D.H. Kim 2010). Finally, we can say that the spinous processes were not created to bear a load (D.E.T. Shepherd 2011).

The diffusion of the interspinous motion preservation devices is due to the easy and reversible surgical technique and to a low number of complications in the early time after the surgery. Biomechanical studies have also clearly shown that many of these devices do not retain absolutely the movement, even though they limit it, even in varying degrees, and are really just "spacers" (H.J. Wilke 2008). Their capability to assist the disc is also low, because their location is far from the I.A.R. The reasons for which preserve the movement are linked to the increasingly high knowledge of occurrence of a high percentage of cases of ASD after fusion surgery (P. Ekman 2009, K.J. Song 2011). For all these reasons many firms have shifted their focus on systems for "interspinous fusion" or other surgeons, like us, on motion preservation systems no more interspinous but "interlaminar".

We have therefore developed and diffused a new device for the treatment of degenerative disk disease of the lumbar spine which is called IntraSPINE®. The fundamental features of IntraSPINE® is the difference in compression ratio between the anterior and posterior parts of the device. The anterior part (the nose really interlaminar), is able to distract and to re-open the neuroforamen, which in turn re-lifts and re-aligns the facet joints, as well as re-strain the thickened yellow ligament due to the reduction of the disc height. The posterior part which is compressible because "tunnelized", does not refrain the spinous process movement and therefore the ROM (Range of Motion).

#### The indications are:

- Chronic low back pain in black disk with facet-syndrome (pre-operative evaluation with dynamic X-rays and block tests of the facet joints)
- Soft and/or dynamic and foraminal stenosis
- After operations for big expelled disc hernias in young patients so as to prevent the collapse of the disc and the subsequent CLBP
- Insufficiency of the supra-spinal fibrous complex
- Topping of after operation for synovial cyst
- Kissing spine

**Conclusion:** We present the pictures of various cases treated with minimum follow-up of 4 years. The absence of major complications, the minimally invasive surgical procedure and the good clinical results allow us to say that with a correct patient selection we can have a "new arrow in our bow" for the treatment of the lumbar DDD.

#### Speaker Biography

Giancarlo Guizzardi is staff at Neurosurgical Department of the University and City Hospital of Florence (Chief of the Spine Surgery Section to December 2015) since September the 1st 1977. He is Specialist in Neurosurgery, Neurophysiopathology and Sport's Medicine. From the beginning of 80's he devoted his surgical activity especially to the surgical procedures of the degenerative, traumatic and neoplastyc pathology of the spine (about 7000 procedures). He published about 90 papers and chapters in the most important Italian and international medical journals and books. He was invited as speaker, chairman and organizer to the most prestigious Italian and international meetings of spinal surgery. He invented and developed new devices, protocols and min-invasive approaches in "non-fusion" technologies in Degenerative Disk Disease of the Spine. Since 2002 he is agreement professor of the School of Medicine and Surgery at Florence University. He is in the editorial board of the "European Spine Journal", member of the editorial board of "Journal of Neurosurgical Sciences", of "World Neurosurgery", of "Asian Spine Journal", of the "World Spine Column Journal" and of the "Journal of Spinal Surgery". He is also corresponding member of the Society of South America Neurosurgical Societies, Honorary lifetime member of the Neuro Spinal Surgeons Association of India, active member of the EANS (European Association Neurosurgical Society), SINch (Italian Neurosurgical Society), GIS (Italia Spine Society), Eurospine (European Spine Society) and NASS (North American Spine Society). From December 1st, 2015 moved the surgical activity from Florence to the "Tuscany Surgical Hospital" in Arezzo where is the Head of the Spine Surgery Activity. From December 2016 "Guest Professor" by the first Affiliated Hospital of Zhejiang Chinese Medical University.

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## **Liz Karter**

*Level Ground Therapy, UK*

### **Gambling: Why a Drug of choice?**

**D**espite its ever-growing media profile gambling addiction remains the most misunderstood dependency. This lack of understanding prevents those suffering the addiction seeking treatment and tests the confidence and skills of even the most experienced drug and alcohol addiction therapists.

Threads of similarities run through the underlying causes and consequences of gambling addiction and some drug addiction, and in treatment methods, but these threads are broken in striking and surprising ways too. To begin understanding how to deliver effective treatment methods we need to understand- and to help our clients to understand- that what drives an addiction to gambling is so much more than money.


What drives someone to choose gambling as a drug of choice? Why do many of my clients tell me they made a conscious choice to let go of substance and alcohol addiction in favor of gambling

addiction? What are the key ingredients for effective treatment creating lifelong rewarding recovery? These questions are answered in this presentation based on my over sixteen years' experience of working as specialist in gambling addiction and learning through my practice what it is that really works.

#### **Speaker Biography**

Liz Karter is a therapist with over seventeen years' experience of treating gambling addiction in both men and women and is considered a leading UK expert. Working within leading UK treatment agencies, Liz was a pioneer in identifying differences in male and female gambling addiction patterns and developing specific treatment methods for women. She established the first UK women's recovery groups for problem gambling in 2006. Liz regularly appears on national and international TV and radio as consultant therapist and writes articles on addiction for worldwide publications. As well as contributing chapters to addiction treatment publications Liz has published two books on her area of specialization, which is gambling addiction in women.

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## **John Sutcliffe**

*London Spine Clinic, UK*

### **Disc replacement surgery: When should you “refuse to fuse”?**

**D**iscogenic pain is one of the commoner problems facing the spinal surgeon, but has been very variably managed. Lumbar fusion has become the gold standard of treatment, but we are all familiar with the long-term issues of fusion; as a result, arthroplasty of the lumbar spine has gained in popularity in Europe, less so in the United States.


Selecting cases suitable for lumbar total disc replacement, requires considerable input. Triaging the patients is discussed, together with the necessary diagnostic work-up. The author's experience of over 500 cases demonstrates the utility of certain diagnostic tests pre-operatively, the use of pre-habilitation and the multi-disciplinary approach necessary for managing these patients.

Surgical techniques tips are discussed, with particular reference to minimizing the trauma to the patient and surgeon.

#### **Speaker Biography**

John Sutcliffe trained as an undergraduate in Edinburgh, gaining the year prize for Systematic Surgery and qualifying in 1983. His early medical post-graduate training was also in Edinburgh, after qualification, taking in a large number of specialties including Plastic, Orthopaedic and Paediatric Surgery before focusing on Neurosurgery. He undertook Neurosurgical training posts in Sheffield and London and developed an extensive experience of treating spinal conditions ranging from tumours and trauma to the commoner degenerative spinal conditions. He was appointed as a consultant neurosurgeon in 1993 and since that time has concentrated exclusively in the management of patients with Spinal Disorders. He developed the concept of the multi-disciplinary team approach to Spinal Disorders, setting up the London Spine Clinic in 1997 and resigned from the NHS in 2000. He remains an Emeritus Consultant at Barts' and the London NHS Trust. The London Spine Clinic was the first unit of its kind in the UK and continues with the same philosophy today. Mr. Sutcliffe has trained many young spinal surgeons, as training director in his NHS career and as supervisor for the spinal fellowship at the London Spine Clinic and London Clinic Hospital. He runs a regular teaching and training program within the Clinic, in both surgical and non-surgical aspects of Spine care. Mr. Sutcliffe no longer undertakes open surgical procedures, but will focus on triaging the patients, arranging the multi-disciplinary management of their symptoms and running the London Spine Clinic as efficiently as possible.

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## **Malini Narayanan**

*National Neurosurgery Solutions, USA*

### **Minimally Invasive Spine Surgery Applied to Traumatic Spine Injury: My experience at University of Maryland Prince George Hospital, Second busiest trauma center**

**Introduction:** Traditionally, Traumatic Burst Fractures of the thoracic spine and lumbar spine are stabilized via an open Spine surgical approach. However, Minimally Invasive Spine Surgery is an adjunct and option to sick patients with multiple injuries.

**Methods:** Retrospective cases over from 2016-2018-year period are presented.


**Summary/conclusion:** Trauma patients with multiple injuries and fractures including the Spine are critically ill patients. Minimally Invasive Spine Surgery can be a good approach to reduce blood loss and tissue disruption in these critically ill patients in unstable spinal fractures. In this talk, I will be presenting application and my experience of Minimally Invasive Spine surgery to traumas.

#### **Speaker Biography**

Malini Narayanan is a Harvard-trained board-certified neurosurgeon who practices in the Washington D.C./ Maryland area. She is the recipient of the following awards: 2018 Top Doctor, 2017 America's top Surgeon, 2015 Washingtonian top Doc for Spinal Surgery, 2013 Vitals Patient Recognition, and 2007 America's Top Surgeon. As a practicing neurosurgeon

since 2007, her interests are cervical & lumbar spine disease, trauma, and brain tumours of adults. In the USA, she is one of approximately 450 board-certified female neurosurgeons in the country of approximately 6000 board-certified neurosurgeons. She founded and directs her practice, National Neurosurgery Solutions. Over the last twenty years, she has published numerous papers, posters and presentations at National Neurosurgery Conferences. She is an active member of the Congress of Neurological Surgeons, American Association of Neurological Surgeons and the Society for Minimally Invasive Spine Surgery. Her mission statement is "Patient first through dedication to the practice and advancement of neurosurgery". After receiving her undergraduate degree from University of Massachusetts (Amherst, Mass), she further continued her education through the master's degree program at Massachusetts Institute of Technology (Cambridge, Ma) in Electrical Engineering working on a retinal prosthesis for patients with Retinitis Pigmentosa. Her experience in Bioengineering spurred her interest in medicine, completing her medical degree at the University of Chicago's Pritzker School of Medicine (Chicago, Ill.) in 1998. Her relentless pursuit of excellence and love for neurosurgery led her to train in neurosurgery at the Harvard Medical School affiliated Brigham & Women's and Boston Children's Hospitals. There, she earned numerous accolades including the Congress of Neurological Surgeons Resident Research Award, 2003, where only two women have ever been awarded the accolade in the history of the award in the last 50 years. Returning to the University of Chicago, Dr. Narayanan augmented her surgical skills through a fellowship in paediatric neurosurgery at Comer's Children's Hospital (Chicago, Ill.), where she also completed her neurosurgical residency as chief resident.

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**Xiu Liu**

*University of Mississippi Medical Centre, USA*

**Differential roles of  $\alpha 4\beta 2$  and  $\alpha 7$  nAChRs in Nicotine Addiction process: Implications for smoking cessation medication development**


The primary reinforcing actions of drugs of abuse including nicotine and the conditioned motivational effects of environmental stimuli (e.g., smoking) associated with previous drug intake may be mediated by dissociable, yet connected, neurobiological mechanisms. We used animal models of nicotine self-administration and cue-induced relapse of nicotine-seeking behavior to examine effects of pharmacological blockade of specific neurotransmitter receptors on nicotine intake and cue-triggered nicotine seeking. Male Sprague-Dawley rats were trained to intravenously self-administer nicotine (0.03 mg/kg/infusion) on a fixed ratio 5 schedule of reinforcement. To establish a nicotine conditioned cue, an auditory/visual stimulus (5-s tone/20-s lever light on) was associated with each nicotine infusions. After lever responding was extinguished by withholding nicotine and its cue presentation, the cue-induced reinstatement tests were performed. Prior to the self-administration and the reinstatement test sessions, animals were subjected to receptor antagonist treatment to block activation of specific neurotransmitter receptors. Antagonists of the  $\alpha 4\beta 2$  nicotinic acetylcholine receptors (nAChRs) but not the  $\alpha 7$  nAChR

antagonists reduced nicotine self-administration. In contrast, antagonists of the  $\alpha 7$  nAChRs rather than the  $\alpha 4\beta 2$  nAChR antagonists effectively reversed cue-induced reinstatement of nicotine-seeking behavior. These results suggest distinct involvement of the  $\alpha 4\beta 2$  and  $\alpha 7$  subtypes of the nAChRs in nicotine primary and conditioned reinforcement. In addition, although bupropion suppressed nicotine self-administration, its enhanced cue-triggered reinstatement of nicotine-seeking behavior. Taken together, these findings may have implications for clinical effort to develop pharmacotherapies aimed at reducing nicotine consumption in current smokers and preventing environmental cue-triggered relapse in abstinent smokers.

**Speaker Biography**

Xiu Liu is a professor at the University of Mississippi Medical Center, USA. He has a two-decade track record of studying drug addiction, particularly nicotine and alcohol addictive behavior in animal models. His research has been funded by USA National Institute of Health and Food and Drug Administration grants. He has published 60 research papers, 6 book chapters and more than 80 research abstracts. Dr. Liu has served as a member of grant review panels for international and national research funding agencies and an editorial board member of more than a dozen reputed journals.

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## ***Malini Narayanan***

*National Neurosurgery Solutions, USA*

**Finding the right level – Operating on Spine**

**Introduction:** When we are operating on the spine, counting the level in spine is the one of the most important tasks we are burdened with, without ever making a skin incision. What do we do when the counting in the sagittal plane is different from the up view or when the radiologist official read differs from what we see in the or? This often happens in a transitional vertebra.

**Methods:** Retrospective cases (3-6) are presented.


**Conclusion:** Careful technique such as preoperative evaluation and recounting both in the up and a lateral view till absolute clarity on the level with all discrepancies resolved. Each case is unique.

### **Speaker Biography**

Malini Narayanan is a Harvard-trained board-certified neurosurgeon who practices in the Washington D.C. Maryland area. She is the recipient of the following awards: 2018 Top Doctor, 2017 America's top Surgeon, 2015 Washingtonian top Doc for Spinal Surgery, 2013 Vitals Patient Recognition, and 2007 America's Top Surgeon. As a practicing neurosurgeon since 2007, her interests are cervical & lumbar spine disease, trauma, and brain tumours of adults. In the USA, she is one of approximately 450

board-certified female neurosurgeons in the country of approximately 6000 board-certified neurosurgeons. She founded and directs her practice, National Neurosurgery Solutions. Over the last twenty years, she has published numerous papers, posters and presentations at National Neurosurgery Conferences. She is an active member of the Congress of Neurological Surgeons, American Association of Neurological Surgeons and the Society for Minimally Invasive Spine Surgery. Her mission statement is "Patient first through dedication to the practice and advancement of neurosurgery". After receiving her undergraduate degree from University of Massachusetts (Amherst, Mass), she further continued her education through the master's degree program at Massachusetts Institute of Technology (Cambridge, Ma) in Electrical Engineering working on a retinal prosthesis for patients with Retinitis Pigmentosa. Her experience in Bioengineering spurred her interest in medicine, completing her medical degree at the University of Chicago's Pritzker School of Medicine (Chicago, Ill.) in 1998. Her relentless pursuit of excellence and love for neurosurgery led her to train in neurosurgery at the Harvard Medical School affiliated Brigham & Women's and Boston Children's Hospitals. There, she earned numerous accolades including the Congress of Neurological Surgeons Resident Research Award, 2003, where only two women have ever been awarded the accolade in the history of the award in the last 50 years. Returning to the University of Chicago, Dr. Narayanan augmented her surgical skills through a fellowship in paediatric neurosurgery at Comer's Children's Hospital (Chicago, Ill.), where she also completed her neurosurgical residency as chief resident.

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## Anthony Hammond

KIMS Hospital, UK

### Contribution of Discal Treatment by Disc-FXTM in a pathway of interventional management of Back Pain and Sciatica in daily clinical practice

**Objective:** I here report the contribution of Discal Treatment by Disc -FXTM in a pathway of interventional management of back pain and sciatica in daily clinical practice.

**Design:** Prospective, Sequential, Open label case series as observed in clinical practice.

**Setting:** Single practitioner, Private practice, Southeast England

**Patients:** 100 sequential cases. 53 women. Mean age 44.8yrs. 38 back pain, 40 back and leg, 5 Sciatica, 10 complex (7 non-assigned). Mean total duration of pain 58.5 months, continuous pain 22.4 months. 1, 2, 3 and 4 levels treated in 39, 52, 8 and 1 cases respectively. Follow-up was until clinical discharge. Minimum 1month, maximum 13months, median 3 months.

**Results:** Average data integrity 83.1% and no statistical relationships between gender, age, duration of pain, number discs treated and patients' percentage global perceived improvement (%GI). Mean improvements in initial to final 100mm VAS score in average daily back pain were 58.2, 29.3 (49.6%), worst back pain: 74.7, 39.9 (46.6%), average daily leg pain: 36.9, 13.8


(62.7%), worst leg pain: 41.2, 20.0, (51.5%), area of pain: 11.3, 5.2 (52.8%), Oswestry DI 40.1, 27.1 (32,5%). Mean patients' GI was 57.4%. overall, 22% failed and 68% achieved more than 50% GI (mean 77.7%), 43.3% achieved over 75% (mean 87.7%). While 41 received Disc-FX with no other treatment, amongst 34 who received prior treatment, only 3.9% of total numerical difference in score was achieved before Disc -FX.

**Conclusion:** Percutaneous Decompression and Annulus Denervation by Disc -FX contributes most of the improvement recorded in the management of chronic discogenic spinal pain in daily practice.

#### Speaker Biography

Anthony Hammond graduated from Edinburgh Medical School and trained as a general physician and Rheumatologist in Bristol, Bath and London. He was a consultant at Maidstone and Tunbridge Wells, NHS Trust till 2011 and now practices at The Kent Institute, Maidstone, in London and Internationally. He is a SIS instructor and in addition to a broad-based spinal pain practice has developed a special interest in the minimally invasive and endoscopic treatment of disc related pain problems. He has recently founded Insight Spine UK to develop this speciality.

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## Pierpaolo Mura

Sapienza University of Rome, Italy

### Spinal Arthrodesis with instrumentation: Open Surgery vs Percutaneous Surgery

The study that was carried out is a comparison between patients, suffering from a severe degenerative pathology, treated surgically by an interspinous fixation system and by Spinal Arthrodesis instrumented with rods and screws.

The requirement of stability is of primary importance for the vertebral column in order to prevent a premature mechanical and biological degeneration of its components. In biomechanics, instability is defined as a lack of stability caused by an increase in mobility in the motion segments from the presence of anomalous vertebral movements and a slight rigidity of the FSU (Functional Spine Unit).

Spinal Arthrodesis is currently the gold standard in the treatment of severe lumbar instability and severe deformities. The aim of the surgeon is to restore the mechanical stability and the physiological balance of the spine in both the coronal and sagittal planes. To achieve these objectives it is necessary to use a means of synthesis endowed with great force associated with the execution, in selected cases, of specific techniques (osteotomies, cages, intersomatic cages, etc.).

In serious degenerative diseases and in deformities, Minimally Invasive Surgery does not allow optimal achievement of all the objectives of the case, furthermore there is an important exposure to ionizing radiation with risks to the patient, higher percentages of pseudo-osteoarthritis and impossibility to correct a deformity: in fact it is not possible to perform a cruentation of the joint apophyses and to implement a stable arthrodesis.

Open surgery, on the other hand, provides the possibility to improve the correction on both the coronal and sagittal planes, promote the arthrodesis which is more likely to obtain it, minimise radiation exposure with modest blood loss, easily control postoperative pain, have patients standing up on the first day and allow discharge on the third or fourth day. The success rate is around 95% in the medium term and in complex surgical cases, ie coronal and/or sagittal deformities, the success rate is around 87-90%.

All this, in most cases, is the result of combined anterior, lateral and posterior surgical approaches, with good results observed in the medium term. In the operating room average surgical times vary between one and a half hours and two hours with modest blood loss and easily managed post-operative pain relief.

Clinical Data	Open Surgery	Percutaneous Surgery
Operating time (min)	80/90*	190/230
Intra-operative blood loss (cc)	300/350	250/350
X-ray exposure time	28.9±8.2	45.3±11.7
Duration of hospital stay postoperative (d)	3-4	48h
VAS		
Preoperative	7±3	7.3±1.2
Postoperative	2±1.5**	2.2±0.6
Bone fusion	YES	NO
Complications (%)	1 dural tear, 1 screw mobilization, 2 dehiscence surgical wound	11.4
Achievement of goals	87/90% (severe deformity), 95% (traditional surgery)	Less chance of rebalancing of the spine. Greater risk of screw malposition. Greater possibility of pseudoarthrosis. No substantial difference in a decompression

Table: \* Stabilization of 2/3 vertebral segments associated with decompression;  
 \*\* Opiates and NSAIDs

#### Speaker Biography

Pierpaolo Mura is an orthopedic specialist in scoliosis and an expert in Spinal Surgery. He also serves as a professor at La Sapienza University of Rome, Polo Pontino and Chair in Orthopedics contract. He is specialized in Orthopedics and Traumatology and diagnostic radiology. He is the Director of the Department of Orthopedics; and Founder and Director of the Unit Complex Spine Surgery Center and Scoliosis Surgery Section. He is the head of unit of Orthopaedics and Regional Delegate of the Italian Society of Spine Surgery GIS (Italian Scoliosis Group) as well as an active member of SRS (Scoliosis Research Society). He is also scientific director of the research project on biomaterials in spine surgery at the Science and Technology Park in Pula.

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## **Walter Bini**

*Waldkrankenhaus Bad Duben, Germany*

### **Adipose derived mesenchymal stem cells in the treatment of DDD. Protocol and personal experience**


Lumbar degenerative disc disease (DDD) poses an ongoing challenge as far as treatment options and alternatives, especially when considering younger patients. Over 80% of the adult population presents with one or more episodes of ongoing-progressive low-back pain (LBP). The primary cause is associated with degeneration of the intervertebral disc and which is triggered by a decrease of the nucleus pulposus cell population, as evidenced in histological studies. Definitely, in the presence of a "black disc" without profusion and neurological compromise, microsurgery or even fusion surgery should not be contemplated. Numerous percutaneous techniques have been propagated as proper way to treat this condition throughout the literature in the past years. They have been primarily focused on the treatment of the pain generated by the involved disc and the subsequent segmental insufficiency, without addressing the degeneration of the disc and for this have had limited success and remain as pain management tools. Some significant trials in the past ( i.e. Chondrocyte transplantation trial ) and the increasing recent research and achievements with more biological strategies as far as tissue regeneration , have motivated the development of a new treatment concept initially applicable to the lumbar spine which will be presented and discussed. Advancements have led to a significant improvement in the

understanding of the cell environment and tissue transplantation at a molecular, cellular and immunobiological level. Adipose tissue has already become a central source of clinical and research work involving adipose tissue derived progenitor cells. Endothelial and mesenchymal stem cells derived from adipose tissue are being considered and used in an array of clinical conditions and seem to have clear therapeutic benefits for many disease conditions including those affecting bone, cartilage and muscle. The use of an accessible source with abundant cells which have a high potential for regeneration clearly is superior in comparison to the chondrocyte option for the lumbar disc. Mesenchymal cells have a high self renewal capacity and a potential for multi lineage differentiation. For this, adipose tissue derived MSCs (ADMSCs) are optimal candidates for tissue regeneration and can be obtained from the patient in a one step procedure-treatment.

#### **Speaker Biography**

Walter Bini has completed his diploma at Westminster School, Simsbury Conn, USA and post-graduate degree at Universidad de Zaragoza, Facultad de Medicina, Zaragoza-Spain. In 2014, he was the Middle East Chairman of ISLASS. He was head of Neurosurgery at Sheikh Khalifa General Hospital, UAQ-UAE from 2014-2016. Currently, he is Consultant Neurosurgeon in Orthopedic Department, spine section of Lanzo Hospital COF, Lanzo d'Intelvi in Italy and also visiting consultant Neurosurgeon in Orthopedic Department at Healthpoint Hospital, UAE. Currently he is Neurosurgeon at Waldkrankenhaus Bad Duben, Germany.

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