

International Workshop on Clinical Spine Biomechanics
4th & 5th March, 2017
Auditorium, ISIC
Program

Day-1 - 4th March, 2017

Time	Topic
0900-0945	Session I-Introduction to Spine Biomechanics Chairperson-Dr Dilip Sinha & Dr Venkatesh K
0900-0945 (30+15)	Introduction - Spine biomechanics and its clinical application: An overview - Dr Vijay Goel, PhD, Distinguished University Professor, Co-Director, Engineering Centre for Orthopaedic Research Excellence (E-Core), University of Toledo
0945-1130	Session II- Degenerative Spine Lumbar Chairpersons- Col. V S Madan & Dr Suresh Pillai
0945-1000	Biomechanics of normal lumbar spine and influence of aging - Dr Venkatesh K, Professor, Spinal Disorders Surgery, Christian Medical College, Vellore
1000-1015	Clinical outcome of dynamic stabilization in lumbar degenerative disorder - Dr Ali Ozer, MD., Professor of Neurosurgery, Turkey
1015-1030	Case I – Significant leg pain & back pain in case of large PIVD - Dr Sunil Katoch, Consultant Spine Surgeon, Max Hospital, New Delhi
1030-1045	Case II- Isthmic spondylolysis - Dr Saumyajit Basu, Consultant Spine Surgeon, Park Clinic, Kolkata
1045-1130	Panel discussion Degenerative lumbar spine-correlating biomechanics to biology; Moderator- Dr Arun Bhanot Panelists Dr Vijay Goel, Dr Ali Ozer, Dr Aakash Agarwal, Dr Dilip Sinha, Dr Venkatesh K, Dr. Raghavendra S, Dr Suresh Pillai, Dr Manoj Sharma, Dr Saumyajit Basu, Dr Sunil Katoch Points for discussion : <ul style="list-style-type: none"> • How much facet can be sacrificed • Is laminectomy a surgery of past- for single level Lumbar Canal Stenosis • Effect of L5-S1 fusion on S1 joints • How much disc removal is safe • Large disc-When is TLIF a better option (Biomechanical perspective) • Comparison of exercise prescription for PIVD vs Spondylolisthesis • Role of posterior pedicle screw based dynamic system in multilevel PIVD
1130-1200	Tea Break
1200-1300	Session III- Degenerative Cervical Spine Chairpersons- Dr GR Vijay Kumar & Dr P Sarat Chandra
1200-1215	Peculiarity of cervical spine biomechanics and effect of aging - Dr P Sarat Chandra, Professor, Dept of Neurosurgery, All India Institute of Medical Sciences, New Delhi,
1215-1230	Stabilization options in cervical spine : Biomechanical basis for different indications - Dr GR Vijay Kumar, Senior Consultant Neurosurgeon, Fortis Hospital, Kolkata
1230-1245	Case I- Multilevel disc - Dr Raghavendra S, Consultant Spine Surgeon, Advance Spine Care & Management Centre, Bangalore
1245-1300	Case II- C1-C2 instability

	- Dr P Sarat Chandra, Professor, Dept of Neurosurgery, All India Institute of Medical Sciences, New Delhi,
1300-1400	Lunch
1400-1440	<p>Panel discussion Clinical Spine Biomechanics in cervical degenerative spine Moderator- Dr Ajoy Shetty Panelists: Dr K Das, Dr GR Vijay Kumar, Dr P Sarat Chandra, Dr Harsh Bhargava, Dr Amrithlal Mascarenhas, Dr Gururaj Sangodimath, Dr Shipra Chaudhary, Dr Sri Kumar, Dr S S Kale, Dr Deniz Erubult Points for discussions</p> <ul style="list-style-type: none"> • Cervical Laminectomy- Biomechanics • Instrumented vs non instrumented (when to do what?) • Multilevel ACDF vs multilevel ACCF • OPLL- Is it less likely to require instrumentation from a biomechanical perspective • Adjacent level disease- Are newer devices better than gold standard ACDF • Does TDR simulate normal cervical biomechanics • How is C1-C2 distraction technique better than transoral odontoid excision • Transarticular vs Harms technique- Which is biomechanically more sound? • Role of cervical traction in cervical PIVD
1440-1540	<p>Session IV - Thoracolumbar Trauma Chairpersons- Dr Sajan Hedge & Dr Shankar Acharya</p>
1440-1455	<p>Biomechanics of thoracolumbar injuries (Surgeon's perspective) - Dr Bhavuk Garg, Associate Professor, Dept. of Orthopaedics, AIIMS Delhi</p>
1455-1510	<p>Biomechanical principles of ideal stabilization construct in thoracolumbar trauma- Biomechanical perspective - Dr Deniz Erubult, PhD, Bio-engineer, Turkey</p>
1510-1525	<p>Case I- Thoracolumbar burst fracture with implant failure - Dr B Mohapatra, Consultant Spine Surgeon, Indian Spinal Injuries Centre, New Delhi</p>
1525-1540	<p>Case II - Conservative treatment of three column thoracolumbar injury - Dr Dilip Sinha, Professor of Orthopedics, Patna, Bihar</p>
1540-1600	Tea Break
1600-1640	<p>Panel discussion Biomechanical perspective of thoracolumbar trauma Moderator-Dr H S Chhabra Panelists- Dr Shankar Acharya, Dr Sajan Hegde, Dr Bhavuk Garg, Dr Neeraj Gupta, Dr Roop Singh, Dr S Karunakaran, Dr Nishit Patel, Dr Aakash Agarwal, Dr K L Kalra, Dr Dinesh Kalyansundaram, Dr Vishal Nigam Points for discussions</p> <ul style="list-style-type: none"> • Anterior stand alone fixation in thoracolumbar burst fracture. • Monoaxial Vs polyaxial screw fixation in thoracolumbar burst fracture • Length of fixation –short segment Vs long segment • Anterior column reconstruction in thoracolumbar burst fracture- Is it a thing of the past? • Are cross links biomechanically necessary in long pedicle screw constructs • Which fractures are amenable to posterior fixation without fusion • Posterior Ligamentous Complex (PLC) injury – How much is significant • Role of bracing in TL trauma

1640-1820	Session V – Cervical Trauma Chairpersons- Dr Ali Ozer & Dr Prashant Kekre
1640-1655	Choice of instrumentation in cervical trauma- Anterior vs Posterior - Dr S S Kale, Professor of Neurosurgery, All India Institute of Medical Sciences, New Delhi
1655-1710	Are the Biomechanical considerations at cervico-thoracic and thoracolumbar junction the same? - Dr Prashant Kekre, Consultant Spine Surgeon, Apollo First Med Hospitals and Sundaram Medical Foundation
1710-1725	Case I- Failed anterior construct - Dr Manoj Sharma, Consultant, Spine Surgeon, Fortis, Shalimar Bagh, Delhi
1725-1740	Case II- Flexion compression injury - Dr K L Kalra, Consultant, Spine Surgeon, Sir Ganga Ram Hospital, Delhi
1740-1820	Panel discussion Biomechanical perspective of cervical trauma Moderator- Dr Shankar Acharya Panelists- Dr Ali Ozer, Dr Arvind Jayaswal, Dr Deepak Joshi, Dr Dinesh Kalyansundaram, Dr Prashant Kekre, Dr H S Bhatoe, Dr M L Bansal, Dr Arun Sharma, Dr Harsh Bhargava, Dr Abhishek Srivastava Points for discussions <ul style="list-style-type: none"> • When to do posterior fixation in three column injury of cervical spine with anterior corpectomy in non junctional scenario • Cervico Thoracic injury- How is it different biomechanically? • Tapered rod in cervico thoracic stabilization – Is it biomechanically stable or unstable • Can flexion compression injury of subaxial cervical spine be managed posteriorly alone • Design of sport protection equipments to prevent cervical spine injuries in athletes
1830-1915	Inauguration
1915 Onwards	Dinner

Day-2 - 5th March, 2017

0845-0900	<ul style="list-style-type: none"> - Future of craniovertebral junction surgery: C1-2 arthroplasty - Dr Pravin Salunke, Associate Professor, Dept of Neurosurgery, PGIMER, - Chandigarh
0900-1040	<p>Session VI – Deformity Chairpersons – Dr Arvind Jayaswal & Dr Saumyajit Basu</p>
0900-0915	<p>Biomechanical considerations in instrumented correction of scoliotic curve</p> <ul style="list-style-type: none"> - Dr Sajan Hegde, Head of Dept. of Spine Surgery, Apollo, Chennai
0915-0930	<p>Finite element analysis of growing rods</p> <ul style="list-style-type: none"> - Dr Arvind Jayaswal, Head of Dept. of Spine Surgery, Primus Super Specialty Hospital, New Delhi / Dr Aakash Agarwal, PhD, USA
0930-0945	<p>Case I- PJ K</p> <ul style="list-style-type: none"> - Dr Ankur Nanda, Consultant Spine Surgeon, Indian Spinal Injuries Centre, New Delhi
0945-1000	<p>Case II- Adding on phenomena in an operated scoliosis case</p> <ul style="list-style-type: none"> - Dr Gururaj Sangodimath, Consultant Spine Surgeon, Indian Spinal Injuries Centre, New Delhi
1000-1040	<p>Panel discussion Biomechanical perspective in Deformity Moderator- Dr Saumyajit Basu Panelists- Dr Vijay Goel, Dr Arvind Jayaswal, Dr Venkatesh K, Dr Sajan Hegde, Dr Saumyajit Basu, Dr Ankur Nanda, Dr Rajat Mahajan, Dr Vandana Phadke, Dr Aakash Agarwal, Dr Aditya Ingalhalikar Points for discussions</p> <ul style="list-style-type: none"> • Role of Sagittal parameters in clinical decision making • Anterior vs Posterior correction of scoliosis- which is biomechanically better • Different correction maneuvers and their biomechanical perspective • Role of schroth exercises in scoliosis • Role of side loading vs tulip instrumentation in deformity- which is better? • Role of stiff coccr rods: when it is appropriate to use them
1040-1100	Tea Break
1100-1115	<p>Decompression and Spinoplasty for Lumbar canal stenosis : A Biological option</p> <ul style="list-style-type: none"> - Dr S M Tuli, Senior Consultant Spinal Diseases & Orthopaedics, VIMHANS Hospital, Delhi
1115-1255	<p>Session VII – Osteoporosis Chairpersons- Dr H S Bhatoe & Dr Ramesh Kumar</p>
1115-1130	<p>Biomechanics of osteoporotic vertebral fracture</p> <ul style="list-style-type: none"> - Dr Ajoy Shetty, Senior Consultant, Dept of Spine Surgery, Ganga Hospital, Coimbatore
1130-1145	<p>Biomechanical challenges in management of osteoporotic fracture</p> <ul style="list-style-type: none"> - Dr Suresh Pillai, Spine Surgeon, Pathanamthitta, Kerala
1145-1200	<p>Case I- Failed isolated cement augmentation procedure</p> <ul style="list-style-type: none"> - Dr Rupinder Chahal, Spine Surgeon, Sir Ganga Ram Hospital, New Delhi
1200-1215	<p>Case II - Implant failure in Osteoporotic spine</p> <ul style="list-style-type: none"> - Dr Rushama Tandon, Consultant Spine Surgeon, Central Railway Hospital, New Delhi
1215-1255	<p>Panel Discussion Augmentation techniques in osteoporotic spine and biomechanical perspective Moderator- Dr Amrithlal Mascarenhas</p>

	<p>Panelists- Dr H S Bhatoe, Dr K Das, Dr Aditya Ingalhalikar, Dr Rushama Tandon, Dr Vikas Tandon, Dr Rupinder Chahal, Dr Gaurav Sachdeva, Dr S Karunakaran, Dr Ramesh Kumar, Dr Vishal Nigam</p> <p>Points for discussions</p> <ul style="list-style-type: none"> • Vertebroplasty vs Kyphoplasty vs vesseloplasty vs stenoplasty • Revision strategies in failed osteoporotic instrumented construct • Peculiarities of deformity correction in osteoporotic spine • Orthotic management in osteoporotic fracture
1255-0145	<p>Session VIII –Applied Biomechanics : Rehabilitation perspective Chairpersons- Dr S L Yadav & Dr Roop Singh</p>
1255-0105	<p>Biomechanical analysis of dorsolumbar fascia and role of bone muscle for spinal stability - Dr Gita Handa, Professor, Department of Physical Medicine and Rehabilitation, AIIMS, New Delhi</p>
0105-0115	<p>Ergonomic design of chairs and wheelchairs for the prevention of back pain - Mr. Nekram Upadhyay, Head, Department of Assistive Technology, Indian Spinal Injuries Centre, New Delhi</p>
0115-0125	<p>Biomechanics of lifting and carrying load - Dr Sri Kumar, Assistant Professor, Department of Physical Medicine and Rehabilitation, All India Institute of Medical Sciences, New Delhi</p>
0125-0135	<p>Effectiveness of general conditioning exercises for management of low back pain - Dr S L Yadav, Professor (Department of Physical Medicine and Rehabilitation), All India Institute of Medical Sciences, New Delhi</p>
0135-0145	<p>Neuromechanics – An engineering perspective - Dr Deepak Joshi, Assistant Professor, Indian Institute of Technology New Delhi</p>
0145-0215	<p>Lunch</p>
0215-0430	<p>Session IX – Spinal implant Biomechanics: Current Indian Scenario Chairpersons- Dr Vijay Goel & Dr Dinesh Kalyansundaram</p>
0215-0230	<p>Biomechanics and biomaterial issues-India - Dr A K Mukherjee, Director General, Indian Spinal Injuries Centre, New Delhi</p>
0230-0245	<p>How to conceptualize, implement and analyse a biomechanical study - Dr Dinesh Kalyansundaram, Biomedical engineering, IIT Delhi & AIIMS</p>
0245-0300	<p>How to set up a biomechanical lab (Man power + hardware) - Dr Aditya Ingalhalikar, PhD, Founder and CEO, INDIUS Medical Technologies</p>
0300-0315	<p>Role of industry in advancement of understanding of implant biomechanics - Mr. K Vijay, CEO, Jayon Implants Pvt. Ltd.</p>
0315-0330	<p>Indian regulatory requirements for marketing implants: Current scenario - Dr S Eswara, Reddy, M Pharm, PhD, Joint Drugs Controller of India, Central Drugs Controller of India, Central Drugs Standard Control Organization, - Ministry of Health & Family Welfare, Govt. of India</p>
0330-0430	<p>Panel Discussion Challenges of setting up a biomechanics laboratory in India and ways & means to overcome it Moderator- Dr Vijay Goel Panelists: Dr Sajan Hegde, Dr Arvind Jayaswal, Dr H S Chhabra, Dr Deepak Joshi, Dr Aditya Ingalhalikar, Dr Dinesh Kalyansundaram, Dr Aakash Agarwal, Mr. K Vijay, Dr Ramesh Kumar</p>
0430-0445	<p>Tea Break</p>