Syllabus

GABOR B. RACZ , MD, FIPP

BIOGRAPHICAL SKETCH

Gabor B. Racz, M.D. was born in Hungary and completed M.B. and Ch.B. degrees from the University of Liverpool Medical School in Liverpool, England. He served as house surgeon and physician at the Royal Southern Hospital in Liverpool before coming to America in 1963 for an anesthesiology residency at SUNY Upstate Medical Center, Syracuse, New York. Dr. Racz filled numerous assignments, such as respiratory consultant in the neurosurgical head injury unit and Associate Professor at SUNY, until 1977 when he moved to Lubbock, Texas to become the first Chairman of the Department of Anesthesiology at the new Texas Tech University Health Sciences Center. He held that position until March 1, 1999 when, as Director of Pain Services, he focused full attention to treatment of patients, expanding the operations of pain services, and the future development of an international pain center in Lubbock, Texas. He continues as professor and chair emeritus and co-director of the pain services at TTUHSC. In 1996 Dr. Racz was honored by Texas Tech University Health Sciences Center when he was awarded the first Grover Murray

Professorship recognizing his distinguished achievements in the institution as well as internationally. In December 1998, University Medical Center named Dr. Racz recipient of a $1 million endowed chair in recognition of his "greatness in patient care, teaching and research" at Texas Tech University Health Sciences Center and University Medical Center. He served as organizing chairman of the Department of Anesthesiology at TTUHSC from 1977 to 1999 and as director of the Pain Services from 1977 to 2006 when he became Co-Director with Miles Day, Director of the clinic. On October 16 2008, Dr. Racz received the TTUHSC Distinguished Professor Award.

Dr. Racz holds the certificate of Diplomat with the American College of Pain Management, the American Board of Anesthesiology, the American Board of Pain Medicine, Fellow of Interventional Pain Practice awarded by the World Institute of Pain and the Diplomat American Board of Interventional Pain Practice (DABIPP) certification awarded by ASIPP and WIP. He is an advocate for high standards of certification and training among pain physicians and works toward the advancement of those goals. He has earned numerous awards and honors, including the Lifetime Achievement Award from American Society of Interventional Pain Practice and is listed in all editions (1992-2011) of The Best Doctors in America. In July 2006 he received the MORICCA AWARD, the highest award presented by the Italian Pain Society. His vision of education, clinical practice and research was further fulfilled with the opening October 25 2008 of new Racz International Pain Center opened on the campus of Texas Tech University Health Sciences Center in September 2008 in Lubbock, Texas.

Dr. Racz has published numerous book chapters and journal articles describing his techniques in spinal cord and peripheral nerve stimulation, neurolysis, radiofrequency thermocoagulation and other interventional procedures used in management of pain.

LECTURE

ACCESSING THE EPIDURAL SPACE

This lecture will discuss the improved safety and new developments of needle technology when accessing the epidural space.

For more information, please visit the InTech Open Access Book:
http://www.intechopen.com/books/pain-management-current-issues-and-opinions

COSIMO BRUNI, MD

BIOGRAPHICAL SKETCH

Dr. Bruni is in charge of the Clinical Trials Unit, Department of Biomedicine - Division of Rheumatology, AOU Careggi - University of Florence, Italy.

LECTURE

CURRENT APPROACHES TO TREATING JOINT PAIN WITH BIOLOGICAL AGENTS AND DRUGS

Objectives

Upon completion of this presentation attendees will be able to discuss

- Joint pain in rheumatic diseases
- The role of cytokines in inflammation and pain
- How to assess joint pain joint pain and disease activity in Rheumatoid Arthritis in daily practice
- Biological therapy and Target therapy
- The comparison between Biological drugs and DMARDs
- Effects of TNF-α inhibitors on pain during RCTs
- Goals of therapy in Rhaumatic diseases
- Future potential treatment directions

Key Points

- Pain is one of the main features of rheumatic diseases and its management is an area of increasing research.
- Pain in rheumatic diseases is strictly connected with inflammation, whose pathogenesis depends on many cytochines as TNF-α, IL-1β and IL-6, which have also a very important role in maintaining pain.
- Old drugs like DMARDs are able to control mainly inflammation, with a minor effect on disability and bone damage.
- It's important to asses Pain in daily practice and it is also a parameter of the Disease Activity Score (DAS), which is the best index to assess disability too, together with its Clinical (CDAI) and its Simplified (SDAI) versions.
- Biological drug are produced using biotechnology and are directed against specific cytokines or molecular pathways: this is the so-called Target Therapy.
- The first biological drugs were TNF-α inhibitors, which proved to be effective in reducing pain, improving quality of life and managing disease activity in RA and other rheumatic and non-rheumatic diseases, as shown by many RTCs.
- In rheumatological diseases the sooner the therapy is started, the better the disease activity is controlled, as patients seem to be more prone to favourable treatment outcome during the very start of the disease.
- New biological agents in development include drugs that target proximal effects of the immune response and growth factors for T-cells.

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RICHARD RAUCK, MD, FIPP

BIOGRAPHICAL SKETCH

Dr. Richard Rauck, a well-known and respected Pain Management Physician, began his career at Wake Forest University Baptist Medical Center, where he began the Pain Management Center in 1986. He graduated from Bowman Gray School of Medicine (now called Wake Forest University School of Medicine) in 1982 and traveled to Columbus, Georgia and Cincinnati, Ohio to do his internship, residency and fellowship training. He began his research career in the 1980's and continues today. After leaving Wake Forest in 2000, he went into private practice with Piedmont Anesthesia and Pain Consultants, and started his own research center called The Center for Clinical Research. In 2004 he began his own pain management clinic and continued with The Center for Clinical Research, which is now housed together in one building. He treats a variety of pain management problems as well as speaking locally, nationally and internationally.

LECTURE

CURRENT STATUS OF INTRATHECAL DRUG DELIVERY – DRUGS AND PUMPS

JAMES E. HEAVNER, DVM, PhD, FIPP (Hon)

BIOGRAPHICAL SKETCH

Dr. James E. Heavner is a Professor Emeritus of Anesthesiology, Cell Physiology and Molecular Biophysics and Clinical Professor of Anesthesiology at Texas Tech University Health Sciences Center. He also is an honorary Fellow of Interventional Pain Practice. His scientific career spans more than 40 years. His areas of research include pain mechanism and treatment and the pharmacology and toxicology of local anesthetics. He pioneered the development of epiduroscopy. He is active in numerous national and international professional organizations and is the Registrar for the Fellow of Interventional Pain Practice examination.

LECTURE

SPINAL CANAL ENDOSCOPY 2012

Objectives

Upon completion of this presentation attendees will be able to discuss

- Primary reasons for performing spinal endoscopy and measures of success
- Indications and techniques for performing epiduroscopy
- How patients benefit from spinal canal endoscopy
- Complications

Key Points

1. Epiduroscopy is direct visualization of the epidural cavity with a percutaneously inserted fiber optic device that includes a working channel for injecting fluids and instruments.
2. Goals of epiduroscopy are to gain information by direct visual observation of the epidural cavity that assists in establishing a) a diagnosis b) a treatment plan and c) a prognosis.
3. Epiduroscopy is also used to execute the treatment plan and to investigate the patho physiological changes leading to the development or maintenance of LBP or radiating pain (RP).
4. Epiduroscopy is indicated for patients with LBP and/or pain radiating to the lower part of the body and lower extremities for whom alternative approaches have been unsuccessful, failed to meet treatment objectives or are contradicted.
5. Spinal canal endoscopy may identify causes of pain that cannot be determined by physical examination and imaging (CT scan, MRI)
6. Contraindications for epiduroscopy include systemic infection, infection at the intended epidural cavity access site, coagulopathy, increased intercranial pressure, sacral deformi ties or canal too narrow preventing entry or passage of the epiduroscope.
7. Observations noted during epiduroscopy depend upon prior treatments (eg surgery) and anatomical changes documented on physical and imaging examination, changes (increase, decrease absent/abnormal) in vascularity, fat and/or fibrous tissue and/or inflammation are commonly observed.
8. Major surgical intervention can often be avoided by using minimally invasive spinal canal endoscopy.

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JAN PETER WARNKE, MD

BIOGRAPHICAL SKETCH

Prof. Dr. Jan-Peter Warnke is currently Chief of Neurosurgery for The Paracelsus Clinic Group in Germany. He is appointed Professor for "Medicine-Ethics-Finances" at the University Zwickau, Germany. He held a post as Professor for Neurosurgery at the Gutenberg-University in Mainz, Germany.

Professor Warnke was appointed Chief of Neurosurgery for the Paracelsus Clinic Group for Germany in 1993, at age 33. He has developed the Paracelsus Clinic after the Wall fell from a community hospital to a centre of excellence, not only from a medical standpoint but also financially. Under his leadership, relations to universities throughout Europe have increased offering students an incite to practical medicine with state of the art equipment As a result, Paracelsus has been vaulted to an internationally recognized standard for neurosurgery in Europe, and for rare diseases as Leptomengeopathy and its variations, as Perineural Spinal Cysts (Tarlov Cysts) in the World.

Prior to joining Paracelsus Private Hospital Group, Jan-P. Warnke was a practicing Neurosurgeon and Assistant Professor in Neurosurgery at RWTH Aachen Germany, Rheinisch-Westfälische Technische Hochschule. His education is truly international including residencies in Germany, Hungary and Great Britain.

His interest in Neurosurgery focuses on Endoscopic Methods in Neuro-Oncology and the Neuro-Endoscopy of the spinal Subarachnoidal space.

LECTURE

ARACHNOIDITIS, THECALOSCOPY AND TORLOV CYSTS

Objectives

Upon completion of this presentation attendees will be able to discuss:

- Lumbar-sacral subarachnoidal space is approached by an endoscopic technique: Thecaloscopy
- Current techniques, practical use of the method for diagnostic and therapeutic reasons
- Most common pathologies of the leptomeningeals sheets (Arachnoid&Pia mater)
- Interventional options for treatment of Arachnoiditis
- Pathophysiology of Perineural Cysts, Cyst-related Pain-Syndroms and their relation to Arachnoiditis.
- Interventional options for Perineural Cysts.

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RAFAEL JUSTIZ, MD, MS, FIPP, DABIPP

BIOGRAPHICAL SKETCH

Dr. Rafael Justiz is currently the Director of Interventional Pain Management , Department of Neurosciences, Saint Anthony's Hospital, Oklahoma City, Oklahoma.

Dr Justiz earned a Bachelor and Masters in Sciences from Florida International University in Miami, Florida, then went on to receive his Doctor of Medicine from Medical college of Wisconsin. He completed his anesthesia residency at the University of South Florida in Tampa, and received his fellowship in Interventional Pain Management at Texas Tech University in Lubbock, Texas. Dr. Justiz joined the faculty at the international pain institute at University Health Sciences Center and now is currently in private practice.

He is board-certified in anesthesiology by the American Board of Anesthesiology and has Added Qualifications in Pain Management by the same board. He also holds the WIP Fellow in Interventional Pain Practice certification (FIPP) and is a Diplomate of the American Board of Interventional Pain Physicians (ABIPP).

Dr Justiz has published several book chapters and journal articles. His areas of interest's include peripheral field/spinal cord stimulation and treatment of refractory head and facial pain.

LECTURE

VERTEBRAL BODY STABILIZATION TECHNIQUES

Objectives

Upon completion of this presentation attendees will be able to discuss

- Osteoporosis
- Treatment options for osteoporosis
- Vertebral Augmentation
- Identify patient and workup
- Different Techniques
- How to perform vertebral augmentation
- Complications

Key Points

- Discuss osteoporosis including risk factors, epidemiology, its economic effects and clinical consequences. Look at the guidelines for determining osteoporosis, and be able to recognize the disease process and what treatment options there are available.
- Discuss ideal patient selection and workup, and define fracture configurations.
- Discuss different imaging modalities that can be used and their differences.
- Discuss how vertebral augmentation reduces pain and what mechanism are involved.
- Look at the indications, contraindications and relative contraindications involved with vertebral augmentation.

- Discuss the different techniques employed in vertebral body augmentation, transpedicular and extrapedicular approaches. Look at the anatomical landmarks and proper imaging technique for safety. In detail define how each technique is performed and the approaches that can be employed including proper trajectory and vertebral access.
- Recognize the common complications and practice safe techniques to avoid these complication

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RICHARD RAUCK, MD, FIPP

LECTURE

URINE DRUG SCREENING IMPACT ON CARE

RICARDO RUIZ-LÓPEZ, MD, FIPP

BIOGRAPHICAL SKETCH

Ricardo Ruiz-López, MD, Neurosurg., FIPP, is Director of Barcelona Spine and Pain Institute (Institut de Columna Vertebral / Clínica del Dolor de Barcelona), Executive Member of the Board of Directors of Hospital Delfos (Barcelona) and CEO Project for Barcelona Spine & Pain Surgery Clinic.

After receiving his MD degree from the University of Madrid in 1975 and the Board of Neurosurgery in 1980, he founded in 1986 Clínica del Dolor de Barcelona.

His major areas of scientific interest are the Neurosurgery of Pain, the Interventional Techniques and Surgery for Spinal Chronic Pain Conditions, and the development of new organizational models for Patient´s Care.

Editor of a number of medical journals, he has published extensively on Pain Management and Interventional Pain Therapies.

He is a Founding Member of various National and International Medical Societies on the Pain Field, and Visiting Professor and Lecturer at European and American Universities.

President of the Organizing Committee of the II EFIC Congress (European Federation of IASP Chapters) "Pain in Europe" Barcelona, September 1997 and of the 3rd World Congress on Pain of WIP (World Institute of Pain), Barcelona, September 2004.

President of World Institute of Pain (WIP) 2011-2014, President of the Catalan Pain Society (Catalonia, Spain) 2006-2010, and Permanent Trustee of the World Institute of Pain Foundation, NC. USA.

LECTURE

RF - NEW IDEAS

AARON CALODNEY, MD, FIPP

BIOGRAPHICAL SKETCH

Aaron Kenneth Calodney, MD is Past President of the Texas Pain Society. He currently sits on the Board of Directors of the American Society of Interventional Pain Physicians (ASIPP), and advisory Board for the World Institute of Pain (WIP). Dr. Calodney is board certified in Anesthesiology and carries subspecialty certification in Pain Management through the American Board of Anesthesiology.

Dr. Calodney earned his medical degree from the University of Missouri School of Medicine and completed a family medicine internship at St Joseph's Hospital in Syracuse, New York. His residency in anesthesiology and subsequent interventional pain management fellowship was completed at the University of Texas Health Science Center at Houston. He subsequently completed a fellowship in pediatric anesthesia at the Denver Children's Hospital.

With particular interest in Spine and special interests including Neuromodulation and Intrathecal Drug Delivery, Biological treatment of the painful degenerative disc, Peripheral nerve injury, and Radiofrequency ablation, Dr. Calodney has presented and published many articles and textbook chapters. He is actively involved in clinical research and has delivered over 250 invited lectures in the US and abroad.

Dr. Calodney is a member of the American Society of Anesthesiologists, American Society of

Regional Anesthesia and Pain Medicine, and many other elite medical societys.
He is an author of the first Evidenced Based Treatment Guidelines in Interventional Pain and Evidenced Based Guidelines for the Use of Opioids published in the Pain Physician journal and on the National Guideline Clearinghouse

LECTURE

TREATMENT OPTIONS FOR SACROILIAC PAIN

LUDGER GERDESMEYER, MD, PhD, FIPP

BIOGRAPHICAL SKETCH

Prof. Dr. Gerdesmeyer has practiced orthopedic and trauma surgery since 1991. During his time at the University Hospital Luebeck and the Department of Orthopedics and Traumatology of the Technical University of Munich, he has specialized in the areas of joint replacement, spine surgery, pediatrics and specialized orthopedic tumor. He is instrumental in the development of modern and minimally-invasive surgical techniques. Through national and international collaborations, patients receive treatments and information corresponding to the current state of scientific knowledge. Since July 2010 he has been the chief physician in the Orthopedic and Rheumatological Oncology Section of the University Hospital, Schleswig Holstein Campus, Kiel. Prof. Dr. Gerdesmeyer has been written over 100 publications in international journals and books, over 200 lectures worldwide, and published his own textbooks.

LECTURE

UPDATE ON EPIDURAL ADHESIOLYSIS STUDIES

GABOR B. RACZ, MD, FIPP

LECTURE

SPECIFIC VS NON SPECIFIC SPINAL PAIN

This lecture will discuss the topic of specific vs. non specific spinal pain. Back pain is the one of the most common reasons for patients to visit their physicians. First contact with a patient often results with an inadequate evaluation of the patients back pain. The evaluation of patients with back pain must include physical examination where different structures in the spinal canal need to be evaluated such as the disc, spinal canal content, nerve root, posterior longitudinal ligament elements, the facet joint, muscle groups, ventral lateral iliopsoas muscle spasm, and posterior element muscle groups related causes. For more information, please visit the InTech Open Access Book: http://www.intechopen.com/books/pain-management-current-issues-and-opinions

RAY M. BAKER, MD, FIPP

BIOGRAPHICAL SKETCH

Ray M. Baker, MD is the Medical Director of the EvergreenHealth Spine and Musculoskeletal Program in Kirkland, WA. He is President of the International Spine Intervention Society.

LECTURE

CONTROVERSIES IN THE DIAGNOSIS OF PAINFUL LUMBAR DISC DEGENERATION

Objectives

Upon completion of this presentation attendees will be able to:

- Understand the current role of provocation discography in the diagnosis of painful disc degeneration.
- Understand the current role of analgesic discography in the diagnosis of painful disc degeneration.
- Understand the nature of several current controversies in the diagnosis of painful lumbar disc degeneration, including acceleration of disc degeneration related to disc puncture.
- Understand the limitations of provocation discography.
- Understand the potential future role of other diagnostic tests, including MR Spectroscopy, in the diagnosis of painful lumbar disc degeneration.

Key Points

- Although we do not have a Gold Standard for the diagnosis of painful lumbar disc degeneration, Provocation Discography is the best diagnostic tool to date and has a high sensitivity and a relatively low false positive rate when performed correctly on low risk individuals.
- Given a high false positive rate in certain, high-risk populations, Provocation discography is best used to determine who does not have painful lumbar disc degeneration.
- Analgesic discography can be a useful adjunct to provocation discography.
- Provocation discography is controversial:
- There is the potential for false positive results in the exact population that we most often treat: chronic pain patients, workers compensation patients, patients with significant psychological stress, patients on chronic opioids.
- There is no reference standard for painful lumbar disc degeneration.
- Rightly or wrongly, provocation discography has been linked with fusion outcomes. Thus, patient outcomes from fusion have been used as a surrogate marker for the positive predictive value of provocation discography in the diagnosis of painful lumbar disc degeneration.
- Negative predictive values are superior to positive predictive values with all injection based diagnostic procedures, including provocation discography.
- There is limited evidence from the cervical and lumbar spine that provocation discography might accelerate disc degeneration and increase the need from surgery.
- In view of the above, consideration should be given to changing the way we select patients to undergo provocation discography.
- Early studies are encouraging that markers for painful disc degeneration exist that can be measured using non-invasive, objective tools.

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ADNAN A. AL-KAISY, MB ChB, FFRCA, FPMRCA, FIPP

LECTURE

HIGH FREQUENCY SPINAL CORD STIMULATION IN THE MANAGEMENT OF AXIAL BACK PAIN

Objectives

Upon completion of this presentation attendees will be able to discuss

- The role of conventional Spinal Cord Stimulation (SCS) in management of Failed back Surgery Syndrome (FBSS).
- Limitations of conventional SCS in the management of Axial back pain (ABP)
- Strategies used to improve the efficacy of the conventional SCS
- What is High Frequency Stimulations?
- How High Frequency Stimulations work? How safe is it?
- What are the advantages of the high frequency stimulation for the Patients, operators and the providers?
- Future direction of high frequency SCS

Key Points

- Spinal Cord Stimulation is evidence based treatment used in the management of chronic pain conditions.
- While SCS is very effective for radicular pain, one notable area that SCS has had less success in is ABP, which is a mix of nociceptive and neuropathic pain.
- In conventional SCS, paraesthesia coverage has been essential for pain relief. However, coverage of low back pain without dorsal root stimulation and without undesirable stimulation is difficult to accomplish.
- One promising approach for this unmet need is High frequency SCS using up to 10 KHZ.
- In a multi-centre prospective European open label study with 84 implanted patients, High Frequency SCS technology showed significant relief for chronic back pain in difficult-to-treat patients, such as predominant back pain patients.
- Leads can be placed in anatomic midline rather than physiologic midline, making the procedure simpler. Paraesthesia mapping step is not required, making the time for High Frequency SCS surgery more predictable and potentially shorter.
- Future direction of HR SCS includes use different algorithm in programming, different application and advances in equipment technology.

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ERIC COSMAN, JR.,PhD

BIOGRAPHICAL SKETCH

Dr. Eric Cosman, Jr, PhD, is the Scientific Director of Cosman Medical (Burlington, MA, USA), where his research focuses on the physical and biological mechanisms of Radiofrequency (RF) in pain management, and their translation into clinical practice. Dr. Cosman earned a BS, MEng, and PhD in Electrical Engineering and Computer Science from MIT.

LECTURE

RF PHYSICS, SAFETY AND APPLICATIONS

An understanding of the physics of radiofrequency (RF) can improve its clinical application and is critical to understanding, developing, and proving the efficacy of new applications of RF in pain management. Even after 60 years of radiofrequency's use in medicine, the last decade has seen the introduction of new RF treatment modalities like Pulsed RF (PRF) and Bipolar RF, an expansion of target structures for RF in axial and peripheral anatomy, and substantial advances in RF biophysics. Upon completion of this lecture, attendees will be able to discuss:

- The electric, thermal, and biological effects of continuous/thermal RF and PRF in pain management, including the latest research results.
- The physical meaning of RF generator readings and how to apply them clinically
- Thermal lesion size for monopolar and bipolar RF

Key Points

- Physicians have almost 60 years of experience using radiofrequency to create controlled, reproducible thermal lesions in the central and peripheral nervous system for the treatment of various types of pain.
- Strong electric fields/current densities near the uninsulated tip of radiofrequency electrodes induce tissue heating, and heat-conduction/blood-flow dynamics influence the resulting thermal distribution.
- Voltage, current, and power are measures of RF generator output. Impedance and temperature characterize the physical state of the tissue and RF electrode.
- Thermal lesion geometry is a function of electrode size, lesion time, and lesion temperature.
- Bipolar RF, in which current passes between two nearby active electrodes, is expanding treatment options by enabling more conformal and larger lesion geometry than does standard, monopolar RF.
- PRF exposes tissue to stronger electric fields with less average heating than continuous RF. Highly local "heat flashes" are present at points of high curvature on a PRF electrode.

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PETER STAATS, MD, FIPP

BIOGRAPHICAL SKETCH

Peter S. Staats, MD, MBA is a Managing Partner of Premier Pain Centers in Shrewsbury, New Jersey. He is also an Adjunct Associate Professor in the Department of Anesthesiology and Critical Care Medicine and the Department of Oncology at Johns Hopkins University School of Medicine in Baltimore, Maryland. He was the founder of the Division of Pain Medicine at Johns Hopkins University, where he was the director for ten years. Dr. Staats is internationally known for developing and implementing minimally invasive procedures for chronic pain. Dr. Staats received his medical degree from the University of Michigan Medical School in Ann Arbor and completed his residency and fellowship training at the Johns Hopkins University School of Medicine. Dr. Staats has written or co-edited five books, and close to two hundred articles, abstracts, monographs and book chapters on pain medicine in publications that include the Journal of the American Medicine Association, Pain, Anesthesiology, and the Journal of Clinical Oncology.

LECTURE

MILD PROCEDURE

Lumbar spinal stenosis (LSS) is a degenerative, age-related condition that causes symptoms of pain, numbness and tingling in the back, legs and buttocks. By some estimates, over 1.2 million people are diagnosed and in treatment for LSS in the United States.[1] The narrowing of the spinal canal is believed to create an increase in pressure in the epidural space, which causes nerve root ischemia, and subsequent neurogenic claudication symptoms. Estimates in the literature indicate that neurogenic claudication may be present in 80-100% of LSS patients.[2] The current treatment protocol for LSS with neurogenic claudication includes decompression procedures such as laminotomies and laminectomies.
The mild® procedure provides a new treatment option for patients with mild-to-moderate LSS with neurogenic claudication. It is a fluoroscopically guided procedure that uses a specialized device kit to decompress the spinal canal by removing small pieces lamina and hypertrophic ligamentum flavum posterior to the epidural space through a 5.1 mm treatment portal. The procedure can be performed in about an hour in an outpatient setting under light/MAC sedation, no implants are used, and no stitches are required. The mild® procedure has been performed on approximately 12,000 patients in 45 states and data has been published in 12 peer-reviewed journal articles.

The clinical data on the mild® procedure indicate a high responder rate (79%)3, comparable to more invasive open surgery decompression techniques.[4] Long term efficacy is also comparable. Studies show that mild® patients experience dramatic functional improvement and pain reduction. At one year post-mild® patients mean standing time increased from 8 minutes to 56 minutes, mean walking distance increased from of 246' to 3,956'[5] and mean pain was reduced by 53%.[3] These dramatic outcomes come without the risks associated with open surgery and allow LSS patients to stand longer and walk father with less pain. (0% complication rate in all clinical trials.[6])

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6. Based on mild® procedure data collected in all clinical trials. Complications include dural tear and blood loss requiring transfusion.

KEN REED, MD

LECTURE

NEUROMODULATION FOR MIGRAINE

HEMMO BOSSCHER, MD, FIPP

BIOGRAPHICAL SKETCH

Dr. Bosscher graduated from Vrije Universiteit te Amsterdam Medical School in Amsterdam, The Netherlands, and completed his Internal Medicine Internship at the Veterans Affairs Medical Center at Georgetown University, in Washington, DC and his Anesthesia Residency at the University of Massachusetts Medical Center in Worcester, MA. Dr. Bosscher received subspecialty training through a Pain Management Fellowship at the Texas Tech University Health Sciences Center, in Lubbock, Texas. Dr. Bosscher received additional subspecialty training through a Pediatric

Anesthesiology Fellowship at the Hospital for Sick Children, at the University of Toronto, in Ontario, Canada. More subspecialty training was received in Anesthesia for Cardiac Surgery and Critical Care, St. Antonius Ziekenhuis (Hospital), in The Netherlands. Dr. Bosscher received additional medical training at the Bolton Royal Infirmary and Bolton General Hospital, both in Bolton, England. Dr. Bosscher was on staff as Assistant Professor within the Department of Anesthesiology at Texas Tech University Health Sciences Center in El Paso, and Lubbock, Texas, for more than four years. Dr. Bosscher has been in private practice for more than twelve years.

LECTURE

COMMON LOW BACK PAIN AND LATERAL RECESS STENOSIS

Objectives

Upon completion of this presentation attendees will be able to discuss

- Common low back pain
- Lateral recess stenosis and inferior angle stenosis
- The role of inferior angle stenosis in the pathophysiology of low back pain
- The difference between radicular and radiating pain
- Prognostic indicators of treatment using diagnostic markers obtained through epiduroscopy including inferior angle stenosis
- Some suggestions how to treat common low back pain

Key Points

- Common low back pain: Diverse clinical presentation but mostly one pathology
- Pathology is localized, not well defined but inferior angle stenosis is important in the pathophysiology of low back pain
- The nerve root is not involved in the pathophysiology of common low back pain
- Disc pathology is not trivial in the pathophysiology of common low back pain
- MRI is not helpful in many patients with common low back pain

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ANDREA TRESCOT, MD, FIPP

BIOGRAPHICAL SKETCH

Andrea Trescot, MD is past president of ASIPP, a former professor at the University of Washington in Seattle, Washington, and previous director of the pain fellowship programs at the University of Washington and the University of Florida. She graduated from the Medical University of South Carolina, with internship and residency in anesthesia at Bethesda Naval Hospital and a fellowship in pediatric anesthesia at National Children's Hospital in DC. She is a Diplomate of the American Board of Interventional Pain Physicians, a Fellow of Interventional Pain Practice, and chair of the US section of the World Institute of Pain. Dr. Trescot is board certified in anesthesia, pain management, interventional pain management and critical care. She was a pain clinic director in private practice for 20 years before she moved to academics. She returned to private practice, first back in Florida, and most recently in Alaska as director of the Trescot Pain Fellowship.

LECTURE

NEUROPATHIC PAIN: WHAT'S NEW?

Learning Objectives

Upon completion of this presentation, attendees should be able to:

- Discuss the presentations of neuropathic pain
- Describe some of the key features of neuropathic pain
- Recognize some of the newly recognized pathology of neuropathic pain

Key Points

- Neuropathic pain is very common, and often under-recognized
- Listening to the words that the patient uses to describe their pain may give clues to the appropriate treatment.
- There are new medicines and new treatments now available for neuropathic pain

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CHRIS WELLS, MB, ChB, LRCP, MRCS, LMCC, FRCA, FIPP

BIOGRAPHICAL SKETCH

Dr Wells trained at, and then became Director of, the Walton Centre for Pain Relief, organizing services there from 1983 to 1994. He currently practices at Spire Cheshire Hospital and Spire Murrayfield Hospital Wirral, where he sees, assesses and treats all types of pain problems from acute back pain with sciatica, through to chronic neurological pain. Dr Wells has been Honorary Secretary of EFIC, has been made an Honorary Member of the British Pain Society, and also of the neuropathic pain Special Interest Group of IASP (NeuPSIG). Outside of work he is a keen curler, skier and enjoys anything to do with boats.

LECTURE

BOTULINUN TOXIN, PROPERTIES AND USE IN PAIN MEDICINE

Objectives

Upon completion of this presentation attendees will be able to discuss

- The history of therapeutic use of Botulinum Toxin (BT)
- The pharmacological properties of BT
- The various types of BT and their differing properties
- Possible modes of action in pain relief
- The therapeutic indications for use in pain conditions
- Expected outcomes of treatments
- Limitations, complications and types of treatment
- Future direction in use of BT

Key Points

In addition to its cosmetic applications, Botox is currently widely used therapeutically. The main conditions treated with botulinum toxin are:

- Cervical dystonia (spasmodic torticollis) (a neuromuscular disorder involving the head and neck)
- Blepharospasm (excessive blinking)
- Severe primary axillary hyperhidrosis (excessive sweating)
- Strabismus (Squints)
- Achalasia (failure of the lower oesophageal sphincter to relax)
- Chronic focal neuropathies. The analgesic effects are not dependent on changes in muscle tone.
- Migraine and other headache disorders, although the evidence is conflicting in this indication

Other uses of botulinum toxin type A that are widely known but not specifically approved by the U.S. FDA (off-label uses) include treatment of:

- Idiopathic and neurogenic detrusor overactivity
- Pediatric incontinence
- Incontinence due to overactive bladder
- Incontinence due to Neurogenic Bladder
- Anal Fissure
- Vaginismus
- Movement disorders associated with injury or disease of the CNS including trauma, stroke, multiple sclerosis, Parkinsons's Disease, or cerebral palsy
- Focal dystonias affecting the limbs, face, jaw, or vocal cords
- TMJ pain disorders
- Diabetic Neuropathy
- Wound healing
- Excessive saliva
- Vocal Cord Dysfunction(VCD) including spasmodic dysphonia and tremor
- Reduction of Masseter Muscle size to improve appearance of jaw
- Painful bladder syndrome
- Detrusor sphincter dyssynergia
- Benign prostatic hyperplasia
- Treatment and prevention of chronic headache
- Chronic musculoskeletal pain
- Weight loss, by increasing the gastric emptying time
- A study in China reports benefit in the management of postherpetic neuralgia.
- Management of spinal cord injury-related pain.

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LORAND EROSS, MD, PhD, FIPP

BIOGRAPHICAL SKETCH

Dr. Lorand Eross is the director of Functional Neurosurgical Program and head of the Functional Neurosurgical Department at the National Institute of Neuroscience in Budapest. He is a board certified neurologist and neurosurgeon. He has got his PhD degree at Semmelweis University, Faculty of Medicine in 2010. His main interest is epilepsy surgery, movement disorder surgery, pain treatment, spasticity, intraoperative neuormonitoring and neuromodulation. He is teaching at Semmelweis University at the Faculty of Medicine and at Pazmany Peter University Faculty of Information Technology. His research activity is in vitro and in vivo electrophysiological investigational methods in epilepsy.

LECTURE

NEUROSURGICAL APPROACHES TO CHRONIC PAIN MANAGEMENT

Learning objectives:

This summary focuses exclusively on neurosurgical procedures against pain. SCS and periferial nerve stimulation will be discussed by other authors.

Key Points:
The neurosurgical treatment of pain is divided into two subgroups: ablative and neuroaugmentative therapies.

Ablative procedures include all types of surgical interventions, when an irreversible action is taken to stop pain. **Neurolysis**: separation of a peripheral nerve from the surrounding structures to which is adherent. The use of internal neurolysis is clearly necessary in dissecting an injured nerve for interfacicular nerve graft or to evaluate a neuroma-in-continuity. **Trigeminal neurectomy:** Peripheral trigeminal neurectomy can be useful in elderly debilitated patients who cannot undergo more substantive procedure for V/1 division neuralgia. 50-60% of trigeminal neuropathic pain cases are successfully treated with neurectomy. **Dorsal Root ganglionectomy and Dorsal Rhizotomy (DR):** The largest series of DR in cancer pain was published in 1982 by Sindou and Lapras, success rate was 47% in a series of 585 patients. **Sympathectomy:** Currently surgical sympathecomy is reserved for treating hyperhydrosis, sympathetically maintained pain and limited cases of vasculitis (i.e. Raynaud's syndrome). The success rate of sympathectomy in the literature after 1990 ranges from 65% to 100%. **Dorsal Root Entry Zone leasioning:** Indications for drezotomy includes 1.Cancer pain that is limited in extent (e.g.: Pancoast syndrome), 2.Persistent neuropathic pain, 3.Disabling hyperspasticity, especially when associated with pain. Surgery in the DREZ must be considered within the frame of all the methods belonging to the armamentarium of pain surgery. **Midline myelotomy:** Gildenberg and Hirschberg (1984) performed myelotomy for visceral pain with excellent results in 8 out of 12 patients. Punctuate midline myelotomy after laminectomy at T8 level for malignant visceral pain found efficient by Nauta et al. (2000). This technique has limited indication today. **Anterior Cordotomy:** The ideal candidates for Percutan Cordotomy (PC) are cancer patients with unilateral localized pain if the primary malignant disease is under control. The initial success rate of 3742 cases collected by Lorenz was 75 to 96%. **Percutaneous extralemniscal myelotomy:** Indicated in cancer patients with pelvic or lower trunk or lower extremity pain. Kanpolat reported 15 cases, with rectal, pancreatic, colon, renal tumors without complication rate. 6 of the 15 patient had complete 5 of 15 cases had partial pain relief. **Mesencephalotomy:** Amano in 1998 reported 76% long-term pain relief in patients with central and deafferentation pain with an overall morbidity of 4%. No recent report of this procedure in practice. **Medial Thalamotomy (MT):** MT is capable of alleviating neuropathic and nociceptive pain and has the advantage of low morbidity. Medial thalamotomy in any nucleus is more effective in relieving nociceptive than neuropathic pain and those results are modest: 46% relief of nociceptive usually cancer pain and 29% in neuropathic pain. **Stereotactic cingulotomy:** 394 patients were reported until today, in patients with benign origin 53% was useful and 47% of non-useful. In malignant pain the result was just similar. The initial good response to cingulotomy progressively fades over time. **Hypophysectomy:** There are few clinical report on hypophysectomy for pain in the literature since 1984. Recently some center reported on few patients gamma knife hypophysectomies with limited results. **Percutan Radiofrequency Trigeminal Gangliolysis or Rhizotomy:** In summary of several series of RF trigeminal rhizolysis 99% of patients became pain free immediately after the procedure. In a review of 1200 patients followed 1-20 years (mean 9 years), 93 % reported excellent or good results, and 4% reported fair results because undesirable side effects, 1% reported poor results because of severe denervation dysesthesia. RF trigeminal rhizolysis is effective in primary trigeminal neuralgia. RF leasion-ing can effectively treat paroxysmal facial pain associated with tumors and multiple sclerosis. **Percutan Retrogasserian Glycerol Rhizotomy (PRGR) PRGR** is a useful minimal invasive technique in trigeminal neuralgia when MVD is not possible. Long term pain control (7 years) was 85%; the 11 years follow up in Lundsford series showed 77% pain relief. **Microvascular decompression (MVD) for Trigeminal Neuralgia:** Jannetta reported a total

success rate of 88% at 1 year and 74% at 10 year follow up. MVD is the treatment of choice for patient with typical trigeminal neuralgia, with MRI diagnosed neurovascular compression if the patient medical condition allow the risk of craniotomy. **Posterior Fossa Trigeminal Rhizotomy (PFTR):** Several contemporary neurosurgeons indicate PFTR when MVD surgery or other procedures failed. In 3% of patients operated with MVD no vascular compression is found. In these cases an optional treatment strategy could be partial sectioning the nerve. **Gamma Knife Radiosurgery for Trigeminal Neuralgia:** With this method by the end of 2010 more than 17 000 patients were treated worldwide. Approximately 75% of patients achieve good (pain free on medication) or excellent results (pain free w/o medication) within 1-8 weeks of the initial treatment.

Neuromodulative therapy includes only reversible neurostimulation type procedures: **Primary Motor Cortex Stimulation (MCS):** Chronic epidural MCS can control central deafferentation pain in 45-75% of cases. The best results were observed in central post-stroke pain and trigeminal neuropathy (>90%). The results improved during the last 10 years due to better targeting of the motor cortex (fMRI, neuronavigation, SSEP, intraoperative stimulation). **Deep Brain Stimulation (DBS):** In general patients with refractory neuropathic pain should undergo paraesthesia producing stimulation, whereas those with nociceptive pain should undergo periventricular gray/periaqueductal gray matter stimulation, long-term success rate varies between 26% to 72%. The best results of DBS are in cancer pain, FBSS, cervical and brachial avulsions and peripheral neuropathy. **Gasserian Ganglion Stimulation:** Stimulation of the gasserian ganglion presents a surgical option with atypical trigeminal pain. In a large clinical series of 182 patients 92 had more than 50% pain relief and 82 were implanted. At long-term follow up 70% of patients had 75 -100% pain relief. The most benefiters were patients with neuropathic pain after intervention of the maxillary sinus, posttraumatic facial pain, and those with severe dysesthesia after trigeminal destructive procedures.

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GABOR B. RACZ, MD, FIPP

LECTURE

FAILED NECK SURGERY

This lecture will discuss failed neck surgery cases and share interventional solutions for specific pain conditions.

For more information, please visit the InTech Open Access Book:
http://www.intechopen.com/books/pain-management-current-issues-and-opinions

CHAN HONG PARK, MD, PhD, FIPP

BIOGRAPHICAL SKETCH

Dr. Park is Director of Pain Medicine and Non-Surgical Treatment Center, and Vice President, Departments of Anesthesiology and Pain Medicine, Wooridul Spine Hospital, Daegu, South Korea

LECTURE

ULTRASOUND GUIDED TREATMENT 2012

Objectives

Upon completion of this presentation attendees will be able to discuss

- Why we should use ultrasound as a guidance method in pain treatment
- What the basic principle of ultrasound imaging is
- For what ultrasound guided is used in the field of pain treatment
- Relationships between the inserted needle and inner structures
- Proper postures during ultrasound guided intervention
- How Sonoanatomy compare with real anatomy
- Examples of ultrasound application for pain treatment

Key Points

- Ultrasonography has potential usefulness in pain management including diagnosis and interventional treatment.
- The rational for performing ultrasound guided treatment is that it provides information that aids in establishing a diagnosis and prognosis, locating areas of pathology, and providing therapy via a real-time visualization.
- Ultrasonography is the only modality that allows direct visualization of relationships between the inserted needle and inner structures such as vessels or nerves in the way of target areas to avoid an iatrogenic injury of them.
- Barriers to the use of ultrasound in clinical practice include necessity of training for operation.
- Expected outcomes include ruling in or out area or areas of pathology, facilitating treatment, better forecasting of prognosis and future treatment options.

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Dr Al-Kaisy is currently Clinical Lead and Consultant at the Pain Management and Neuromodulation Centre/ Guy's and St Thomas Hospital. He trained in Chronic Pain Medicine at The Walton Centre, Liverpool for Neurology and Neurosurgery. He has a fellowship in Chronic Pain Management at University of Toronto Hospital, Canada.
He has a number of publications and research in variety of categories in pain management. His interest is in management of Spine and Neuropathic pain. He has extensive experience in Neuromodulation: Spinal Cord Stimulation for Failed Back Surgery Syndrome, Intractable Angina, Nerve Lesion, and Sacral Nerve Stimulation for Urinary Incontinence, Interstitial Cystitis and Bowel Incontinence.
Dr. Al-Kaisy was voted the Hospital Doctor of the Year in 2001 for the Pain Management.

LECTURE

TREATMENT OF CHRONIC PELVIC PAIN

This lecture will discuss pelvic pain. Pelvic Pain can be lumbosacral nerve root origin as well as autonomic dysfunction. Examination of the patient and the patient's history is significant as well as identifying pain generators. Pelvic and/or rectal examination to identify pelvic pain is often helpful.
For more information, please visit the InTech Open Access Book:
http://www.intechopen.com/books/pain-management-current-issues-and-opinions

MILES DAY, MD, FIPP, DABA

BIOGRAPHICAL SKETCH

Dr. Miles R. Day is the Pain Management Fellowship Director and Professor for the Department of Anesthesiology and Pain Management at Texas Tech University School of Medicine. Dr. Day received his MD from Texas A&M University, and did his residency and fellowship at Texas Tech. He currently serves on the editorial boards of Pain Physician and Pain Practice journals, and is the chair of the WIP Board of Examination.

LECTURE

INTERVENTIONAL PAIN THERAPY COMPLICATIONS – RECOGNITION, AVOIDANCE, MANAGEMENT