

2nd International Congress on Gait & Mental Function

February 1-3, 2008, Amsterdam, The Netherlands

The 2nd International Congress on Gait & Mental Function was an outstanding success, demonstrating the importance of scientific study and collaboration in a rapidly expanding field that envelops the complex interplay between gait and mental dysfunction. Gait and balance are traditionally seen as largely automatic motor functions. The conference challenged this conventional perspective by highlighting the many interactions between mental functions and walking or balancing. In only the second time this congress has been held, close to 600 delegates came together from over 46 countries across the world to engage in three days of intensive clinical and scientific interactions.

The conference was opened with a dance choreographed by the Movement Network, performed by young dancers who mimicked specific psychogenic gait disorders, thereby highlighting the prominent influence of cognition on gait and balance. This was followed by a lively opening lecture by Dr John Morley, whose preference for active participation and confidence building by dancing with his elderly patients will certainly be remembered. Dr Morley stressed during his lecture that exercise is clearly the best evidenced treatment in the elderly, with the least adverse effects.

The breakfast symposium with the Chelsea Football Club medical team was one of the highlights of the conference and an eye-opener into modern age rehabilitation medicine, seen from the perspective of elite sports. The team stressed that the ultimate goal of rehabilitation after each physical injury should be to return to football stronger, both physically and mentally, than ever before. Setting targets for rehabilitation with each individual player and visualising these targets were important tools that would easily lend themselves well for application in everyday clinical practice. Moreover, the team underscored that in movement science, one should also look at factors such as nutrition, footwear, attentiveness, and speed of eye movements, as practiced routinely in the Chelsea laboratory.

Dr Mark Carpenter of Vancouver, Canada, highlighted our rapidly expanding knowledge on balance and posture in relation to fear of falling, clearly showing that body stiffening, as a result of increased anxiety, may be counterproductive in elderly subjects, thereby increasing the chance of falling and fractures. He also elegantly demonstrated how standing at an elevated surface (thus producing experimentally an increase in the level of postural threat) may lead to increased monitoring of somatosensory information, thereby leading to amplification of sensory gain with resultant changes in postural responses.



Diffusion Tensor Imaging was noted as a promising tool to disentangle the heterogeneity in white matter lesions by Dr Caterina Rosano. Dr Rose Anne Kenny pointed out the often forgotten impact of neurocardiogenic instability, being associated both with cognitive decline and with orthostatic syncope, resulting in falls. The results presented from trials on pacemaker treatment in cases of cardio inhibitory carotid sinus syndrome were largely new to the audience.

A highlight of the congress was presented by Dr Giselle Petzinger, who introduced her latest results on exercise and disease-modification in rats with experimental parkinsonism. The results of her studies emphasise the potential of exercise to induce adaptive plastic changes in the rodent brain, and the first evidence is emerging to suggest that exercise may also have functional beneficial effects in human patients with Parkinson's disease.

In a provocative lecture, Prof Eric Scherder took the audience on a virtual tour through the brain, highlighting the similarities in anatomic lesions for cognition and motor function, as observed in patients affected by Alzheimer's disease.

During the workshops, the attendants engaged in lively debate on the pros and cons of, among others, ambulatory gait and balance monitoring, cognitive testing, and neuroimaging. For example, one workshop discussed the merits of "paper and pencil" versus computerised testing of cognition (presented by Prof Jeffrey Hausdorff and Prof Roy Kessels), con-

cluding that there is still place for both methods, and that choices have to be made based on application (clinical use versus scientific use), the domain to be tested attention and reaction time (best computerised), insight, abstract reasoning and valuation (best paper and pencil). The number of computerised tests is rapidly increasing, so choices should be re-evaluated from time to time. The interactive video session of usual and unusual presentations of gait or balance impairments (presented by Prof Tony Lang and Dr Evzen Ruzicka) was received with great enthusiasm, with standing room only in the audience.

The Congress closed with a remarkable lecture by Dr Kenneth Rockwood, a geriatrician from Halifax, Canada. In his lecture, he emphasized the need for further development and refinement of individually based outcome measures for cognition and mobility, as valid and responsive tools for clinical trials.

The conference will be followed by the 3rd International Congress on Gait and Mental Function to be held in Washington DC, February 26-28, 2010.

Website: www.kenes.com/gait

*Bastiaan R. Bloem, MD, PhD &
Marcel Olde Rikkert, MD, PhD,
conference chairs,*

*Department of Neurology and Geriatrics,
Radboud University Nijmegen Medical Centre,
The Netherlands.*

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Claims Management Rehabilitation Conference

12 February, 2008; London, UK.

The first Claims Management Rehabilitation Conference took place on the 12th February this year at One Great George Street. The day was chaired by Robin de Wilde QC, Chairman of the Ogden Working Party, Secretary of BICMA and former Chairman of the Professional Negligence Bar Association and Fellow at the Royal Society of Medicine. Speaking at the conference, Susan Scott Parker OBE, founder and chief executive of the Employers' Forum on Disability, warned that employers are 'losing good people' through misunderstanding of the Disability Discrimination Act.

She said that DDA compliance is not static; it requires flexibility and an ongoing commitment to meeting the changing needs of staff. These people could end up being forced to make avoidable claims because they are unable to return to, or stay at, their workplace. Susan also said she thought that 'the rehabilitation community fail to provide services to employers that are adequate and efficient.' Her comments coincide with the health secretary Alan Johnson's suggested overhaul of the sick note system to focus on what workers are able to do, rather than what they are not, to help people back to work.

The second speaker of the day, Norman Cottington, President of BICMA and Chairman of The Injury Care Clinics, spoke of the origins and application of the Rehabilitation Code.

Norman covered the Code's beginnings as the Early Assessment Agreement through to the 1997 launch and publication of the Rehabilitation Code in 1999 and the subsequent establishment of the charity Case Management Society UK (CMSUK). Commenting on the current Personal Injury Protocol, which contains the Rehabilitation Code, Norman commented, "Rehabilitation is here to stay, and the courts will not look at whether it was cost-effective, but at whether it was reasonable in all the circumstances". An insurer who declines an opportunity to participate in the process will often find that the solicitor will proceed independently with the cost to be recovered within the claim. This will extract the insurer from the decision making process, meaning that the claim will likely be the subject of litigation. All of this will make the process more protracted and expensive.

Christopher Mercer followed this with a detailed look into the role of physical therapy and investigations in the management of back and neck pain. He explained the risks associated with the overuse of x-rays and CT scans and shocked delegates with the fact that there is a one in 2000 likelihood of developing fatal cancer from one CT abdomen scan. Obviously this risk becomes preferable if it helps to enable treatment of the patient but, Christopher explained, often clinicians revert to x-rays and CTs when a clinical examination could have

given them the same information.

Other speakers included Melanie Summers, Managing Director of AIG Medical & Rehabilitation; Tony Goff, chairman of Motor Accident Solicitors' Society; Liz Haunch Independent Case Management Consultancy; Heather Batey, a head injury specialist; David Bingham, CEO of IPRS UK; and Claire Ginders Remploy, and trustee of the Vocational Rehabilitation Association.

The conference proved a great success, with more than 170 delegates attending and excellent opportunities for debate and networking. The headline sponsor was AIG Medical & Rehabilitation; silver sponsors were HCML; Reach Personal Injury Services; TICCS The Injury Care Clinics; and Nuffield Diagnostics.

*Laura Callicott,
Events Manager, Barker Brooks Media.*

For more information, visit www.legal-medical.co.uk/rehabilitation2008
For further media information, please contact Susan Reid or Jane Burgess on 01423 851150 or email susan.reid@barkerbrooks.co.uk or jane.burgess@barkerbrooks.co.uk

Highlights from the 4th Annual Clinical Neurology and Neurophysiology Update Symposium

February 18-19, 2008. Tel Aviv, Israel.

Cosponsored by the Department of Neurology and Neuroscience of Weill Cornell Medical College, New York, the Adams Super Center for Brain Studies, Tel Aviv University, and the Joseph Sagol Neuroscience Center at Chaim Sheba Medical Center, Tel Hashomer, Tel Aviv, Israel, this year's conference took place not far from the Mediterranean seashore in sunny but windy, downtown Tel Aviv. The busy two day scientific program covered neuromuscular diseases, neuroimmunology, ageing, neurodegenerative diseases, and dementia. Twenty-seven speakers from Israel, the United States, and Germany presented their work to nearly 200 attendees and discussed significant advances in their field.

Neuromuscular diseases

Despite a paucity of adequate, critically performed, controlled trials for most therapeutic modalities in myasthenia gravis, a majority of patients are successfully treated despite a lack of therapeutic uniformity (Zohar Argov, Hebrew University, Jerusalem). Regarding immune mediated neuropathies, including Guillain-Barré syndrome, chronic inflammatory demyelinating polyneuropathy, multifocal

motor neuropathy, and paraproteinaemic neuropathy, intravenous immunoglobulin or corticosteroids remain the first choice of treatment, but again evidence-based second choices are found wanting (Yitzhak Wirguin, Saroka Medical Center, Be'er Sheva, Israel).

Creutzfeldt-Jakob disease

Joav Chapman (Sheba Medical Center, Tel Aviv, Israel), one of the symposium directors, discussed Creutzfeldt-Jakob disease (CJD), a disease caused by the conversion of a normal protein into the self-propagating prion protein. He noted that genetic forms are all linked to mutations in the prion precursor protein PrP and that the most common genetic form is found in Israel. Currently little data exists on effective treatment but prophylactic treatment of PrP mutation carriers will likely be the first step forward.

Isak Prohovnik, (Mount Sinai School of Medicine, New York, USA) discussed recent advances in neuroimaging of human prion diseases. It has long been known that high T2 signal in the basal ganglia is common in these diseases. Recent literature, mainly in sporadic, variant and familial CJD, has established such

hyperintense signals, in basal ganglia, thalamus and cortex, as sensitive and specific markers. Diffusion-weighted MRI (DWI) appears to provide the most promising imaging modality, and may reveal fundamental features of pathophysiology early on, raising the possibility of developing DWI as a surrogate marker of disease progression and treatment response.

Stroke in systemic inflammatory disorders

Steven R Levine (Mt. Sinai School of Medicine, New York) covered the various systemic inflammatory disorders which cause cerebrovascular disease, including systemic lupus erythematosus, the antiphospholipid syndrome, and the vasculitides. Key concepts included (a) involvement of which sized vessel(s) – large, medium, or small? (b) different diseases having predilection for different sized vessels. (c) is the clinical syndrome due to an inflammatory vasculopathy? (d) is there good evidence of an underlying systemic illness or is it a primary, isolated CNS process? (e) are there other potential causes for the cerebrovascular disease? Mechanisms of autoimmune cerebrovascular injury discussed encompassed inflammation, fibrin deposition,

necrosis, anaphylactic, cytotoxic/cell activation, immune complex, cell-mediated, cytokine mediated, genetically mediated, infectious, and environmental/chemical mediated vasculitis. Differential diagnoses, emerging new imaging technologies, and management and treatment closed the session.

Immunology of neurological disorders

An informative talk by Philipp von Landenberg (Institute for Clinical Chemistry and Laboratory Medicine, Johannes Gutenberg University, Mainz, Germany) focused on the data regarding the involvement of toll-like receptors (TLR) in inflammatory neurological disorders. Particularly in experimental allergic encephalitis (EAE) models and in multiple sclerosis, expression and signaling via TLR 2 and 4 seems to have some impact. Data regarding ischaemic neurological disease, with the antiphospholipid antibody syndrome (APS) presented as an example, showed the specific upregulation of TLR8 mRNA, with augmented expression and secretion of TNF α and IL1 β in monocytes. Using monocytes in an in vitro system, this increase in cytokine secretion can be further enhanced by adding the specific ssRNA-ligand for TLR8, and may be subsequently neutralised by adding an inhibitory DNA-oligonucleotide. These findings provide a first indication that endogenous stimulation of TLR8 in APS patients and consequent elevation of inflammatory cytokines might lead to increased

thrombotic risk, as well as to specific changes in the CNS.

White matter imaging

Using magnetic resonance diffusion tensor imaging as a tool for characterising and visualising white matter in normal subjects as well as in pathological conditions, striking illustrations, including the pyramidal tract, optic radiations, and arcuate fasciculus, as well as the smaller uncinate, cingulum, and anterior commissure, and even the carpal tunnel were demonstrated (Yaniv Assaf, Tel Aviv University, Israel).

Dementia

David M Blass (Johns Hopkins University School of Medicine, Baltimore, USA) discussed the management of depression and behavioral abnormalities in dementia. He noted that psychiatric disturbances are highly prevalent in dementia patients and may persist for long periods of time. Psychiatric symptoms may have a variety of causes and therefore require careful evaluation, preferably using a structured approach. These symptoms cause significant patient and caregiver suffering, and are associated with nursing home placement. Treatment for these disturbances must be multifaceted and include medications, behavioral interventions, and caregiver education.

Ageing, motor decline, and Alzheimer's disease were covered by another of the symposium directors, Aron S Buchman (Rush University,

Chicago, and Sheba Medical Center, Tel Aviv). He noted that age-related motor decline is common even among persons without overt disease but its biology is poorly understood. The prevalence of traditional neurological diseases (e.g. cerebrovascular disease, Parkinson's disease, amyotrophic lateral sclerosis and Alzheimer's disease) or geriatric syndromes (e.g., frailty and sarcopenia) do not account for the ubiquitous occurrence of impaired motor function in older persons without overt disease. Recent work suggests that the presence of subclinical common brain pathology, as well as degenerative changes in neural elements from the spinal cord and muscle, may contribute to age-related motor decline. Next year's symposium is already in the planning stage. We hope to see you there!

Next meeting planned for Feb. 16 and 17, 2009 in Tel Aviv, Israel. Planned topics include stroke, autoimmune diseases, neuromuscular diseases and EMG, epilepsy and EEG, movement disorders, botulinum toxin in neurology, and infectious diseases of the nervous system. Visit our website at www.neurophysiology-symposium.com/ for updates

*Michael Rubin, MD, FRCP(C),
Professor of Clinical Neurology,
Weill Cornell Medical College,
Director, Neuromuscular Service and EMG
Laboratory, New York-Presbyterian Hospital.*

International Leksell Gamma Knife Society Meeting

18-22 May, 2008; Quebec, Canada

At the 14th International Leksell Gamma Knife Society Meeting, over 500 participants including neurosurgeons, radiation oncologists and other medical specialists using Leksell Gamma Knife for treatment of tumours and other brain disorders convened at the historic Château Frontenac Hotel in Quebec, Canada. During the meeting, 260 oral and poster presentations covered treatment of malignant and benign brain tumours, functional neurosurgery, imaging & biology as well as physics & technology. On Wednesday, May 21, the prestigious Pioneers in Radiosurgery Award was presented to John Flickinger, MD, Professor of Radiation Oncology and Neurological Surgery at the University of Pittsburgh for his early pioneering work on prediction of complications following Gamma Knife surgery.

The Leksell Gamma Knife Society was established in 1989 to provide a forum for Gamma Knife users to share information, experiences, clinical techniques and advanced scientific research in their quest to non-invasively treat an expanding number of brain disorders. The meetings, which are held biannually, result in a large number of clinical publications, in recent years published as a supplement to Journal of Neurosurgery. The Society plays an important role in increasing the visibility and acceptance of Gamma Knife surgery in the worldwide medical community, among healthcare providers and among patients. The open sharing of results and experiences allows all Gamma Knife users to maintain leadership in the field of intracranial radiosurgery, based on the most recent clinical advancements.

The 14th meeting in Quebec was held with the theme, 'Je me Souviens' ('I Remember'), which is the motto of Quebec. The theme connects the celebration of Quebec's 400 year long history with the 40 year long history of Gamma Knife surgery.

Pioneers in Radiosurgery Award

John Flickinger, MD, is Professor of Radiation Oncology and Neurological Surgery at the University of Pittsburgh, and recipient of this year's Leksell Gamma Knife Society Pioneers in Radiosurgery Award. Bestowed upon researchers who have consistently pioneered new approaches and methods that enhance the results of Gamma Knife surgery, Dr Flickinger pioneered the 'integrated logistic formula' for prediction of complications in his landmark paper of 1989. He has since conducted numerous studies on dose effects of Gamma Knife

surgery in a diverse group of pathologies.

Previous recipients of the Pioneers in Radiosurgery Award include Steven Rasmussen, MD, and Richard Marsland, R.N. of Butler Hospital, Rhode Island; and Christer Lindquist, MD, of Cromwell Hospital, London, UK. They were awarded for their work in the treatment of Obsessive Compulsive Disorder using Gamma Knife surgery.

Leksell Gamma Knife Perfexion

During the Society meeting, a special lecture was held by Professor Jean Regis, from University Hospital La Timone in Marseille, France. Professor Regis and his team has now treated over 800 patients with Leksell Gamma Knife Perfexion, a new, completely revised and fully robotised Gamma Knife and the most advanced technology for radiosurgery available on the market. The presentation by Professor Regis highlighted the unique dose shaping capabilities of Leksell Gamma Knife Perfexion, treating a broader range of targets, much faster and more efficiently than ever before.

Now in clinical use in over 30 locations worldwide, Leksell Gamma Knife Perfexion combines the proven precision of the revolutionary Leksell Gamma Knife with a 300 percent expansion in clinical reach to treat a wider range of targets faster and more efficiently than ever before. The system's unique geometric and dosimetric design simultaneously administers hundreds of beams of low-intensity radiation that converge to deliver a single, therapeutic dose of radiation with pinpoint accuracy to the most difficult targets. Integrated treatment planning and delivery streamlines the radiosurgery process to treat even multiple brain lesions in a single, automated procedure.

Meeting the needs of both neurosurgeons and radiation oncologists, nearly 50,000 patients undergo Gamma Knife surgery every year on the several hundred Leksell Gamma Knife systems installed worldwide. The unique procedure has earned an outstanding scientific track record with thousands of peer-reviewed articles on treatment efficacy, improved quality of life for patients and cost efficiency.

For further information contact Peter Ejemyr, E. peter.ejemyr@elekta.com

