3rd International Conference on

CENTRAL NERVOUS SYSTEM DISORDERS AND THERAPEUTICS

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Keynote Forum

Day 1

Dionisio Figueiredo Lopes, J Neurol Disord 2017, 5:5(Suppl)
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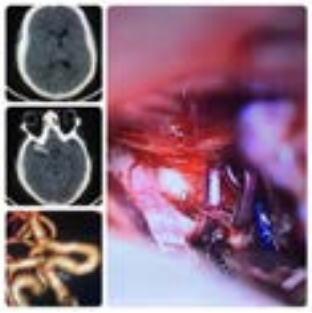
Dionisio Figueiredo Lopes

Hospital de Urgências Governador Otavio Lage, Brazil

The use of multislice CT angiography in the surgical treatment of ruptured intracranial aneurysms

Non-traumatic subarachnoid hemorrhage (SAH) is a neurological emergency. The main cause of non-traumatic SAH (80% of cases) is rupture of an intracranial aneurysm, an event accompanied by high morbidity and mortality rates. The incidence of aneurysmal SAH is estimated to be about 11 cases per 100,000 population per year. Extensive evidence is available demonstrating that early surgery is associated with improved outcome. Cerebral angiography (CA), computed tomography angiography (CTA) or MR angiography are commonly used to determine the location, size and shape of an aneurysm before treatment. CTA images show cerebral vessels in three-dimensional directions and can provide 3D images for aneurysm detection. Some studies have reported sensitivities ranging from 77 and 100% and specificities ranging from 79 and 100%. Among aneurysm detected on CTA and then undergoing surgery, 100% correlation was observed between CTA and CA. CTA, as less invasive and rapidly performed is an accepted method for detection and characterization of cerebral aneurysm when planning surgical intervention. Hospital de Urgências Governador Otávio Lage – HUGOL is a reference hospital for neurological emergencies such as trauma and stroke in a big city in Brazil. We proceeded 60 microsurgical clipping of ruptured intracranial aneurysm during 17 months from August 2015 to December 2016. After the clinical and image diagnoses of SAH, all the 60 patients underwent CTA examinations. The CTA study was performed with a 16-row multislice CT machine. One aneurysm (1.6%) was not detected by CTA initially and visible on the CA. 59 (98.3%) patients were successfully treated based on CTA as the only preoperative investigation. In conclusion, 16-slice CTA image is useful for the diagnosis of ruptured cerebral aneurysm as a noninvasive imaging technique providing an early diagnosis.



Biography

Dionisio Figueiredo Lopes is a Neurosurgeon Member of Brazilian Neurosurgery Society, member of Brazilian Neurosurgery Academy. He is the Head of Neurosurgery at Hospital de Urgências Governador Otavio Lage (HUGOL), a hospital reference in neurosurgical emergencies, Consultant at Hospital de Urgências de Goiânia and Hospital Santa Mônica. He is a Neurosurgeon with expertise in vascular diseases, brain tumor and traumatic brain injury. He has Fellowship in Neuro-oncology at Dresden/Germany and Fellowship in Advanced Techniques in Neurosurgery at Tubingen/Germany.

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Antonio Scilimati, J Neurol Disord 2017, 5:5(Suppl)
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Antonio Scilimati

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Neuroinflammation: Prodrome of neurological and neurodegenerative diseases

Brain inflammatory response, termed neuroinflammation, is crucial to protect the CNS. However, uncontrolled or prolonged neuroinflammation is harmful and could induce neuronal damage. This is particularly relevant in neurological and neurodegenerative diseases (i.e., Alzheimer and Parkinson diseases, amyotrophic lateral sclerosis, multiple sclerosis, traumatic brain injury, HIV dementia, and prion diseases), which are typified by evidence of microglial activation and neuroinflammation. Microglia, the resident immune cells in the brain, plays a role in immune surveillance. Once exposed to immunological challenges such as invading pathogens and neuronal injuries, microglia readily activate and undergo changes in morphology (hypertrophy), number (proliferation), and function (phagocytosis). As a consequence of their activation, microglia produce many pro-inflammatory factors and neurotoxic mediators including complement, arachidonic acid and its lipid metabolites (prostaglandins), cytokines, chemokines, nitric oxide and free radicals, several of which contribute directly to neuronal injury. Among the mechanisms involved into the neuroinflammatory complex network, the cyclooxygenase-1 (COX-1) (predominantly localized in microglia) plays a previously unrecognized role in the neuroinflammation as demonstrated by the attenuation of the inflammatory response and neuronal loss due to the genetic ablation or pharmacological inhibition of COX-1 activity. COX-2, the other known COX isoform, mainly localized in pyramidal neurons, is expected to predominantly contribute to increase prostaglandin biosynthesis in response to insults that directly challenge neurons, such as ischemia and excitotoxicity. In this context, the action of highly selective COX-1 inhibitors compared to coxibs (selective COX-2 inhibitors) in *in vitro* and *in vivo* neuroinflammatory state will be presented.

Biography

Antonio Scilimati graduated cum laude in Chemistry at the University of Bari (Italy) and PhD at the University of Wisconsin (USA). He worked for 4 years at MerckSerono plant producing recombinant drugs. Now, he is an Associate Professor at University of Bari, teaching Medicinal Chemistry. In "Medicinal Science", he uses the theranostic approach to target the cyclooxygenase (COX)-1 as a novel biomarker in oncology and neuroinflammation.

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Hanan Sheikh Ibrahim, J Neurol Disord 2017, 5:5(Suppl)
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Hanan Sheikh Ibrahim

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Pseudobulbar affect, cognitive dysfunction and depression in poorly controlled diabetes

A case of unrecognized neurocognitive disorder and pseudo-bulbar affect in a patient with multiple vascular risks, poorly controlled diabetes with subcortical lacunes masquerades as depression. 64 year old ex-smoker male with PMH of hypertension, long standing poorly controlled type 2 diabetes presented with insomnia and depressive mood, where a trial of SNRI was partially effective in his mood control but did not help with his crying bursts. He is still driving with multiple episodes of loss of consciousness due to hypoglycemia. His physical exam was unremarkable except for emotional bursts of laughter and crying that were not affect congruent. On CGA, he was found to have 3 impaired IADL domains (ability to drive with many car accidents, handling finances and administering medication. His cognition test showed MMSE : 26/30, adjusted to education level, he had impaired clock drawing test and impaired trail B test, impaired speed, attention and executive skills, GDS was 4/15, FRAIL scale was 4/5. His labs revealed HbA1c above 10, He has normal B12, folate. His MRI revealed white matter disease, pontine infarct, Left thalamic lacunar infarct and left lenticular lacune as well in addition to cortical atrophy. Patient was recognized as an early vascular Dementia case with associated Pseudo bulbar Affect masked by depressive symptoms, the case triggered a change of his holistic care that revamped his HbA1C goals and advanced care planning. In summary, General psychiatrists and Primary care clinicians may fail to recognize pseudo bulbar affect and cognitive dysfunction during clinic visits using routine history and physical Pseudobulbar Affect (PBA), presents as abrupt episodes of uncontrollable laughter or crying that are incongruent or independent of mood, occurs in many neurological brain diseases or following brain injury. It is important to identify PBA as a different entity from depression, treat and identify underlying vascular cognitive impairment.

Biography

Hanan Sheikh Ibrahim is a Clinical Assistant Professor at the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, Ohio, a Consultant Physician and a Quality Officer at the Cleveland Clinic Abu Dhabi. She was trained at Cleveland Clinic in Ohio, USA under the tutelage of Dr. Robert Palmer, Concept Originator of the Acute Care of Elderly (ACE) unit which was modeled internationally. Then she pioneered in the geriatric care in the UAE by establishing the first MACE unit and the first Geriatric Core Curriculum for resident physicians in training. She received her MD from Damascus University, Syria where she specialized in Pulmonary Medicine then she moved to US where she completed her residency in Internal Medicine at the University of Pittsburgh School of Medicine in Pittsburgh, Pennsylvania, US. She completed her Fellowship in Geriatric Medicine at Cleveland Clinic, Ohio. She is board certified in Internal & Geriatrics Medicine.

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Day 2

Khin Bo Maung, J Neurol Disord 2017, 5:5(Suppl)
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Khin Bo Maung

Northern Lincolnshire and Goole Hospitals NHS Foundation Trust, UK

Multiple sclerosis, corpus callosum & bedside test

Demyelination affects highly myelinated structures like Corpus Callosum (CC). CC is unique in function that it connects right and left hemisphere. It synchronises bimanual or bipedal activities. Affecting CC can disturb synchrony between the two hemispheres and will affect bimanual and bipedal tasks. The aim is to see if speed of clapping (bimanual activity) can reflect the involvement of CC in multiple sclerosis. Consecutive 70 multiple sclerosis patients from outpatient clinics and home visits were tested for bimanual hand function (clapping). Exclusion criteria are upper limb power <3/5 MRC scale, pain, visual impairment, intentional tremors, stroke or cognitive impairment. Study period started from 01-09-2016. Comparison of speed between rapid supination/pronation of left and right hand separately and then clapping of both hands (supination/pronation of each hands alternatively). Patients had to do as fast as they could. Noticeable slowing of clapping compared to single hand supination/pronation was taken as a sign slowing down of conduction through CC. 31 patients were excluded, 34 patients showed no noticeable difference, 2 patients were difficult to make conclusions and 3 patients showed definite slowing down in clapping. Positive patients will have difficulties in doing bimanual activities like using two sticks for mobility, typing using keyboard, pushing wheel chair bimanually, etc. It is possible to detect CC involvement by doing above bedside test and can be used in rehabilitation setting. Sample size is not large enough and larger studies are needed to validate the finding.

Biography

Khin Bo Maung is involved in Neurorehabilitation over 20 years. He is also a Lecturer (Hon) in Hull and York Medical School teaching 4th Year Medical Students in CNS and Musculoskeletal Blocks. He is doing Botulinum Toxin injection in Spasticity, Dystonia and Involuntary Movement disorders over 15 years. He has given poster and oral presentations in international neurorehabilitation conferences. He is also involved in using Functional Electrical Stimulation (FES) over 10 years and presented regularly in International FES Conferences. He is working on developing Hypertonic Hand Monitoring Scale.

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Alessandro M Morelli, J Neurol Disord 2017, 5:5(Suppl)
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Alessandro M Morelli

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Metabolism of myelin in health and pathology

Myelin is a site of active aerobic energy metabolism, producing ATP through the oxidative phosphorylation (OXPHOS) machinery, which contributes to the acceleration of nervous impulse. This innovative view simplifies current ideas about the physical chemical mechanisms that ensures the advancement of the action potential (CAP) as such basic mechanisms are unchanged in the passage of the CAP from the non-myelinated to myelinated axon. The ATP produced in myelin sheath is transferred to the axon through the Gap Junctions, which are abundant in myelin sheath. The OXPHOS proteins expresses in myelin is closely related to that of mitochondria and hence there must be some process still to be defined, which guarantees the transfer of OXPHOS machinery from mitochondria to myelin; overall the mitochondria-myelin link is known since many mitochondrial pathologies primarily affect myelin. For perfect functioning, OXPHOS requires an active synthesis of the heme group, considering that it is a fundamental component of several subunits of respiratory complexes, and interestingly, myelin sheath displays a higher heme group synthesis in comparison with other districts. In particular, proper functioning of myelin is closely linked to an efficient biosynthetic pathway of the heme and the crucial passage is catalyzed by the enzyme ALA dehydratase (EC 4.2.1.24) that requires zinc as cofactor. Lead poisoning (Saturnism) results in an imbalance of this enzyme and myelin degeneration. Moreover, analyzing the OXPHOS metabolism in myelin isolated from autopsy specimens of multiple sclerosis (MS) patients, we have observed a defective energy/respiratory capacity. With this knowledge, the hypothesis that MS is not an autoimmune disease, but a disease triggered by myelin degeneration following a malfunction of some process related to its energy function and heavy metal pollution seems confirmed, also considering the historical link between industrialization and the MS onset.

Biography

Alessandro M Morelli carried out research in varied fields of biology, focusing in those areas most directly linked to medicine. He investigated on the enzyme Glucose-6-P-dehydrogenase and on its molecular mechanism of senescence. He has been working in the phototransduction molecular events in photoreceptor cells of vertebrate retina. He has discovered the protein FX, a NADP dependent enzyme, catalyzing synthesis of GDP-L-fucose. He has been working on the effects of electromagnetic fields of extremely low frequency on the activity of enzymes involved in phototransduction in retinal cells of vertebrates. Moreover, he has put in evidence the reversible effects of electromagnetic fields on lipid-linked enzymes such as acetylcholinesterase of retinal synaptosomes. Recently, with Isabella Panfoli, Silvia Ravera, Daniela Calzia, he has discovered the brain myelin energetic function and the ATP extramitochondrial synthesis operating in it, involving new paradigms for neurobiology, with application in the study of multiple sclerosis and other neurodegenerative diseases.

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