2ⁿᵈ International Conference on

# NEUROSCIENCE, NEUROIMAGING & INTERVENTIONAL RADIOLOGY

October 30 to November 01, 2017 | San Antonio, USA

## Advanced MR imaging of the visual pathway

**Bundhit Tantiwongkosi**
University of Texas Health San Antonio, USA

**Objectives:** The vision is a highly complex sense, which derives from not only the orbit and globes but also deep within the intracranial compartment. MRI, through its variety of sequences, offers a dynamic array of structural and functional imaging tools to investigate and characterize this system. Our goal is to describe several advanced MRI sequences, and to explore their potential clinical applications as well as areas for further development.

**Learning Points:** MRI imaging of the visual pathway will be reviewed, with a focus on the following sequences: Structural and functional retinal MRI may be utilized in the assessment of diabetic retinopathy as well as glaucoma; Optic nerve MR, with diffusion weighted imaging (DWI) and magnetization transfer ratio (MTR), which demonstrate potential clinical applications in acute ischemia and monitoring demyelination, respectively; high resolution MRI of the lateral geniculate nucleus (LGN) offers the ability to delineate pathology affecting this vital thalamic nucleus. Further improvements in in-plane resolution may augment correlations with clinical deficits through retinotopic mapping. Optic radiation diffusion tensor imaging (DTI), including the utilization of tractography in pre-operative/therapeutic planning for tumors and other lesions. Characterization of visual association areas in the occipital and temporal lobes with functional MRI (fMRI) and DTI was done. Upstream visual pathway insults may have downstream effects, including cortical reorganization, which has implications on the associated clinical outcomes.

**Discussion:** Advanced MRI techniques offer the ability to characterize pathology involving the visual pathway with a level a detail that extends beyond the scope of both clinical examinations and conventional MR imaging. Familiarity with these sequences will allow the radiologist to offer additional insights to referring clinicians, which is likely to positively impact patient management

### Biography

Bundhit Tantiwongkosi has completed his MD from Mahidol University, Thailand, Diagnostic Radiology Residency at Northeastern Ohio Universities, USA and Neuroradiology Fellowship at University of California, Los Angeles (ULCA). He is currently an Assistant Professor of Radiology, Neuroradiology Division at University of Texas San Antonio. He has published more than 18 papers in peer-reviewed journals and has been serving as an Editorial Board Member of Journal of Ear, Nose and Throat Disorders, Central Nervous System Tumors: Clinics in Oncology and Clinic in Surgery.

Tantiwongkos@uthscsa.edu

**Notes:**

OMICS J Radiol, an open access journal
ISSN: 2167-7964

Neuroradiology 2017
October 30 to November 01, 2017

Volume 6, Issue 6 (Suppl)

Page 31