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## Revisiting tumor imaging protocols with 3 Tesla MRI: Lighting the path for neurosurgeon with techniques like arterial spin labeling, diffusion tensor imaging, functional MRI and neuro-navigation

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With ongoing advances, neuro-imaging has moved much beyond morphology. Now we can provide functional and physiologic information through non-invasive imaging techniques as well help the surgeon in pre-operative planning as well as disease follow up. Arterial spin labeling is a novel, completely non-invasive, non-contrast MRI perfusion technique which can predict areas of neo-angiogenesis and help grade the tumor. Various studies have proven its comparable sensitivity and specificity to routine dynamic susceptibility contrast perfusion. Diffusion tensor imaging ascertains if the white matter tracts are destroyed, infiltrated or displaced by the tumor as well as guides the surgeon to plan surgical trajectory. With functional MRI, areas of activation for key task like motor activity, sensation, speech could be delineated, again helping in surgical planning and in improving patient outcome. By providing high resolution 3D data set for neuro navigation the surgical entry point could be made more precise decreasing the craniotomy size. Along with T1, T2, diffusion, susceptibility weighted images, arterial spin labeling, diffusion tensor imaging, MR spectroscopy, DSC perfusion, functional MRI and neuro-navigation are a part of the brain tumor imaging protocol at our institute, especially in cases with a surgical plan of management. The aim of this presentation is to highlight the role and utility of these MRI imaging techniques in brain tumor imaging.

### Biography

Consultant Radiologist in MRI department Nanavati Superspeciality Hospital, Mumbai. Consulting Radiologist at Sunridges Hospitals, Mumbai Teleradiology consultant for Acuscan Imaging Centre, Manjeri Diagnostic Centre, Kerala, Lotus Imaging Centre khargharh, Vidhi Diagnostics, Rajnandgaon and Nucleus Diagnostics, Lagos.

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