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Effectiveness of an alternate approach durotomy in Decompressive Craniectomy in severe TBI

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Introduction: Traumatic Brain Injury (TBI) is a leading cause of death and disability worldwide. Decompressive craniectomy is an emergency neurosurgical procedure in patients who have sustained TBI resulting in raised ICP.

Objective: To study surgical methods and techniques to improve results following decompressive craniectomy.

Patients and Methods: We have treated 3485 TBI patients from January 2009 to December 2017. Decompressive craniectomy (DC) was done in 531 patients while rest were treated conservatively. The protocol followed was neuro ICU care, radiological and neurological monitoring. DC was done if there was neurological deterioration or midline shift in the CT scan. A speedy craniectomy was done with a 'lazy question mark' skin incision. The flap included the temporalis muscle, followed by a 12 to 16 cm wide craniectomy. The dura was first opened in the frontal region and 'pizza slicing' of dura was done. Additional cuts were made over the draining veins close to the saggital sinus in the form of vascular tunnels. A synthetic

dural graft was shaped and positioned but not sutured. The temporal muscle was not sutured. Single layered skin closure was done followed by the application of a loose bandage.

Conclusion: Pizza slicing of dural opening in contrast to conventional sinus based or skull base, based flap prevents compression on the viens which are already compromised due to oedema. Post Traumatic Malignant Oedema and venous infarcts were greatly avoided. Keeping the dural patch loosely and single layer closure prevents damping of the brain pulsations. Wound complications or CSF leaks greatly decreased.

Speaker Biography

Venkataramana Pamidimukkala is consultant neurosurgeon of twenty-five experience from coastal city of Visakhapatnam, on the East coast of India. He was trained by PB. Ramamurthy, known as "Father of Indian Neurosurgery" at Chennai. He practices general neurosurgery but has special interest in treating and prevention of traumatic brain injuries. He trains young neurosurgeons on head injury protocols and widely travels in surrounding states to train general practitioners on early management of head and spinal injuries. He has visited the best institutes of neurosurgery throughout the world and trained there. He has performed nearly 17000 surgeries in brain and spine since 1991.

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