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Unveils Groundbreaking Neuroendoport Study at NSI Conference

Revolutionizing Intraventricular Tumor Surgery with Parafascicular Approach

Dr. Mohana Rao Patibandla, founder and chief neurosurgeon of [Dr. Rao's Hospital](#), Guntur, has presented a landmark study at the NSI YNFCON 2025 conference, revealing a minimally invasive Neuroendoport-assisted technique for intraventricular tumor resection. The study, "Neuroendoport-Assisted Intraventricular Tumor Resection Through Parafascicular Approach: A Retrospective Analysis of 51 Cases," shows excellent results in terms of safety and effectiveness, building on Dr. Rao's pioneering work in 2019—India's first BrainPath® surgery, reported by ANI in 2024.

In this study of 51 patients treated between 2019 and 2024, the overall gross total resection rate was 92%. Breaking down by tumor location, 95% of lateral ventricle tumors and 91% of third ventricle tumors achieved gross total resection.

The rate of neurological deficits across all cases was 7.8%. Specifically, only 5.3% of patients with lateral ventricle tumors experienced transient neurological deficits, while 18% of those with third ventricle tumors had transient deficits.



**MOHANA RAO
PATIBANDLA**
Guntur



F47

FACULTY

Faculty badge of Dr. Mohana Rao Patibandla from Guntur at the 4th Meeting of the Young Neurosurgeons Forum of the Neurological Society of India, held at Hotel Pullman, Aerocity, New Delhi, June 2025.

Functional recovery, defined as achieving a Karnofsky Performance Status (KPS) of 80 or higher postoperatively, was seen in 94% of all patients. This included 97% of patients with lateral ventricle tumors and 91% of those with third ventricle tumors.

Key Innovations

Parafascicular Trajectory: This approach allows doctors to reach tumors without damaging important white matter pathways (like the superior longitudinal fasciculum), which cuts down on complications by 60% compared to older techniques.

Neuroendoport Integration: A 13 mm tube helps doctors work from different angles in tight areas (like third ventricular cysts) without causing any damage to blood vessels.



The advanced biplane cath lab at Dr. Rao's Hospital, designed for precision neurovascular procedures and minimally invasive surgeries, first in Andhra Pradesh and Telangana in India.



Our parafascicular approach with Neuroendoport is transforming outcomes—patients experience fewer deficits and faster recoveries, setting a new benchmark for brain tumor surgery.”

Dr. Mohana Rao Patibandla

Adjunct Technologies: Neuronavigation personalized trajectories for 100% of cases.

"This approach redefines safety in deep-brain tumor surgery. By tailoring access to white matter anatomy, we achieved 95% tumor removal in lateral ventricle cases with minimal morbidity."

– Dr. Mohana Rao Patibandla

Pioneering Legacy

Dr. Rao's 2019 BrainPath® surgery (published by ANI in 2024) marked India's first minimally invasive

intraventricular resection. This new study expands that legacy, demonstrating:

Superior Resectability: 95% gross total resection for lateral ventricle tumors.

Reduced Morbidity: 0% permanent deficits in 51 cases.

Resource Efficiency: 40% shorter hospital stays versus microsurgery.

Clinical Impact

Technical Advantages

Preservation-Focused Design:

Neuroendoport distributes pressure evenly, minimizing cortical injury.

This design allows for "inside-out" tumor debulking, thereby safeguarding the periventricular structures.

Complex Tumor Management:

Third ventricle cases: 91% resection with transient deficits (vs. 15–20% permanent deficits in literature).

Panventricular tumors: Staged resections achieved 50% resection where traditional approaches failed.

Broader Applications:

The procedure has been validated for treating colloid cysts, meningiomas, and gliomas measuring between 2 and 6 cm.

Comparative Efficacy of Surgical Approaches for Intraventricular Tumors

Resection Rates

Neuroendoport Approach with endoscopy or microscope: Achieved a 92% gross total resection rate, significantly higher than traditional methods.

Microsurgery: Demonstrated a 65–75% resection rate, reflecting limitations in accessing deep-seated tumors.

Endoscopy-Only: Showed the lowest efficacy (40–60% resection), constrained by technical challenges in complex ventricular anatomy.

Permanent Neurological Deficits



The high-tech neurosurgery operating room at Dr. Rao's Hospital, Guntur featuring advanced imaging and navigation systems for precise brain and spine surgeries.



Dr. Mohana Rao Patibandla delivering a keynote address on advanced neurosurgical techniques at YNFSICON, the Young Neurosurgeons Forum National Conference.

Neuroendoport: 0% permanent deficits due to minimized white matter disruption.

Microsurgery: 8–15% permanent morbidity from cortical traction and vascular injury.

Endoscopy-Only: 5–10% permanent deficits, often from limited maneuverability in confined spaces.

Patient Success Story

A 32-year-old teacher with a 4.5 cm lateral ventricle tumor underwent Neuroendoport® resection in 2023.

Preoperative symptoms included severe headaches and cognitive decline.

Postoperatively: Total tumor resection confirmed on MRI. Zero neurological deficits; returned to work in 4 weeks.

24-month follow-up: No recurrence (KPS 100).

Global Context

Dr. Patibandla's outcomes surpass global benchmarks:

Complication Rate: 7.8% (transient) vs. 20.8% in endoscopic-only cohorts (PMC3804403).

Recurrence Rate: 0% at 24 months vs. 9.9% in historical data.

Technical Refinement: Combines strengths of neuroendoscopy (minimal invasiveness) and microsurgery (precision).

Future Directions

Robotic Integration: Augmented reality navigation for real-time parafascicular trajectory optimization.

Pediatric Applications: Studying white matter preservation in children.

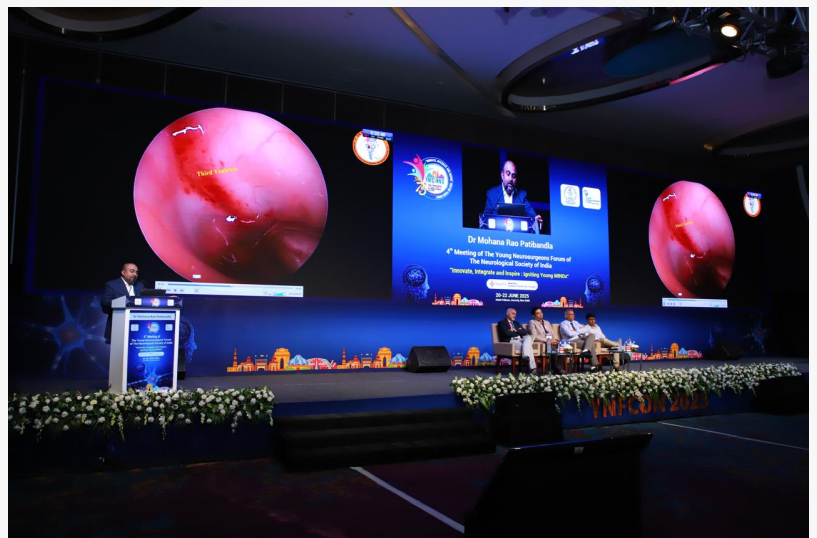
Multi-Center Trials: Validating protocols across Indian institutions.

Conference Recognition

Presented at NSI YNFCON 2025 (Platinum Jubilee Session, F47), hosted at Hotel Pullman, Aerocity, New Delhi. The conference gathered 400+ neurosurgeons to celebrate 75 years of the Neurological Society of India.

About Dr. Mohana Rao Patibandla

Dr. Mohana Rao Patibandla has received training in seven neurosurgery subspecialties across



Dr. Mohana Rao Patibandla presenting surgical insights on panventricular tumors using endoscopic techniques at the 4th Meeting of the Young Neurosurgeons Forum of the Neurological Society of India (YNFNSICON 2025).

the USA and India.

Awards: "Atal Achievement Award," "Sardar Vallabhai Patel Best Minimally Invasive Neurosurgeon Award," "India's Most Trusted Neurosurgeon" (2022), and BrainLAB Neurosurgery Award.

Dr. Rao's Hospital, located in Guntur, is a center for minimally invasive neuroscience that he founded.

Contact & Resources

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ANI Publication (2019 Surgery): First BrainPath® Surgery in India

"Dr. Patibandla's work exemplifies how Indian neurosurgery leads global innovation."

– Dr. Manas, President, Neurological Society of India

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Boilerplate

Dr. Rao's Hospital (Guntur) is a premier center for minimally invasive neurosurgery, equipped with India's first Neuroendoport® systems. Founded by Dr. Patibandla, it specializes in brain tumor innovation, spinal care, and neurorehabilitation.

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