

Neuron

Newsletter from Neuro One Hospital

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Triumph Over Two Giant Intraventricular Tumors

By

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Neuron - A Newsletter from



Neuro One Hospital

Leaders in neuro care



From the Editor

Dear Readers,

Welcome to our first edition of our Neurosurgery Newsletter - NEURON, where we share remarkable stories of successful surgeries that have transformed lives.

In this issue, we delve into 2 challenging cases of intraventricular tumors. Join us as we explore the history, examination, imaging, surgical steps, and postoperative outcomes that led to a triumphant recovery.

Stay tuned for more compelling stories from the world of neurosurgery in our upcoming newsletters.

Regards,

Dr S. Vijay Kumar MCh.,
Keyhole Brain and Spine Surgeon

Case - 1

A 24-year-old female who faced months of debilitating headaches and deteriorating vision due to a large intraventricular tumor.

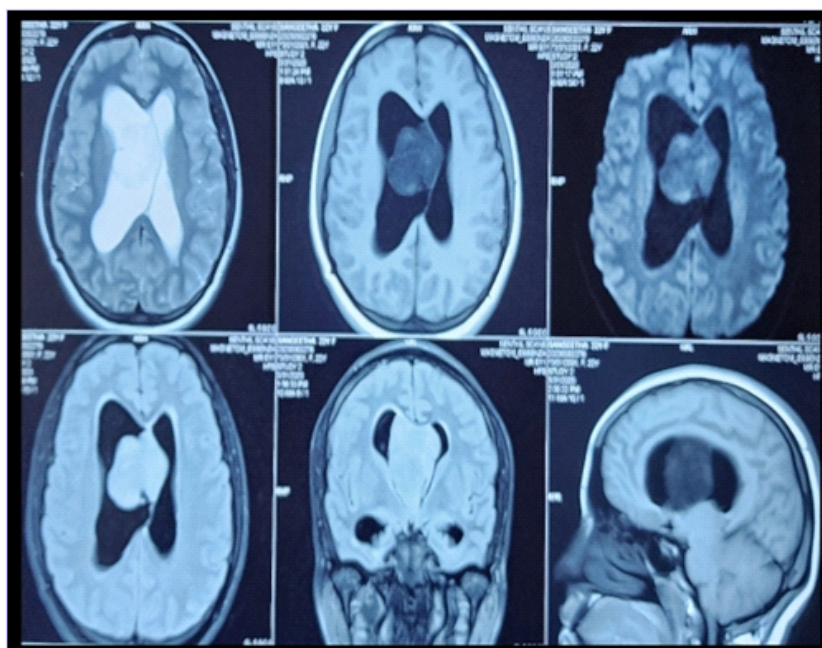
HISTORY

Our patient's journey began with a persistent headache that plagued her for five agonizing months. Over time, her vision started to deteriorate, culminating in severe visual impairment over a two-month period. Remarkably, she experienced no vomiting, a sign commonly associated with intracranial pressure. Her symptoms were indicative of something more sinister lurking within her brain.

EXAMINATION

Upon examination, our patient's visual acuity was a mere 3/60 in both eyes, a testament to the gravity of her condition. The cause of her visual impairment was traced to secondary optic atrophy resulting from papilloedema. These findings were ominous, prompting urgent action to diagnose and treat the underlying issue.

IMAGING



An MRI scan of the patient's brain unveiled the source of her suffering – a massive intraventricular mass. This tumor exerted significant mass effect on the surrounding brain tissue and had led to hydrocephalus due to the obstruction of cerebrospinal fluid flow within the ventricles. The image was stark, illustrating the urgent need for intervention.

SURGICAL STEPS

The successful removal of the large intraventricular tumor was a complex and meticulously executed procedure. Here are the detailed surgical steps.

1. Navigation Guidance:

The surgical team initiated the procedure with the aid of advanced navigation guidance technology. This invaluable tool allowed for precise planning and real-time tracking of the tumor's location within the brain, minimizing the risk to surrounding structures.

2. Small Right Parasagittal Mini Craniotomy:

To access the intraventricular tumor, a small right parasagittal mini craniotomy was meticulously performed. This carefully selected entry point provided optimal access to the ventricular system, ensuring minimal disruption to healthy brain tissue.

3. Transcallosal Approach:

Once the craniotomy was complete, the neurosurgeons embarked on a transcallosal approach. This involved gently parting the corpus callosum, a structure that connects the two hemispheres of the brain. This intricate maneuver provided a direct path to the tumor's location within the lateral ventricle.

4. Microsurgical Total Excision of the Tumor: With the tumor now exposed, the surgical team embarked on the critical phase of microsurgical excision. Utilizing high-powered microscopes and precision instruments, they carefully removed the tumor piece by piece. This approach ensured that the tumor was entirely excised while preserving the integrity of surrounding brain tissue.

5. Cavitron Ultrasonic Surgical Aspirator (CUSA):

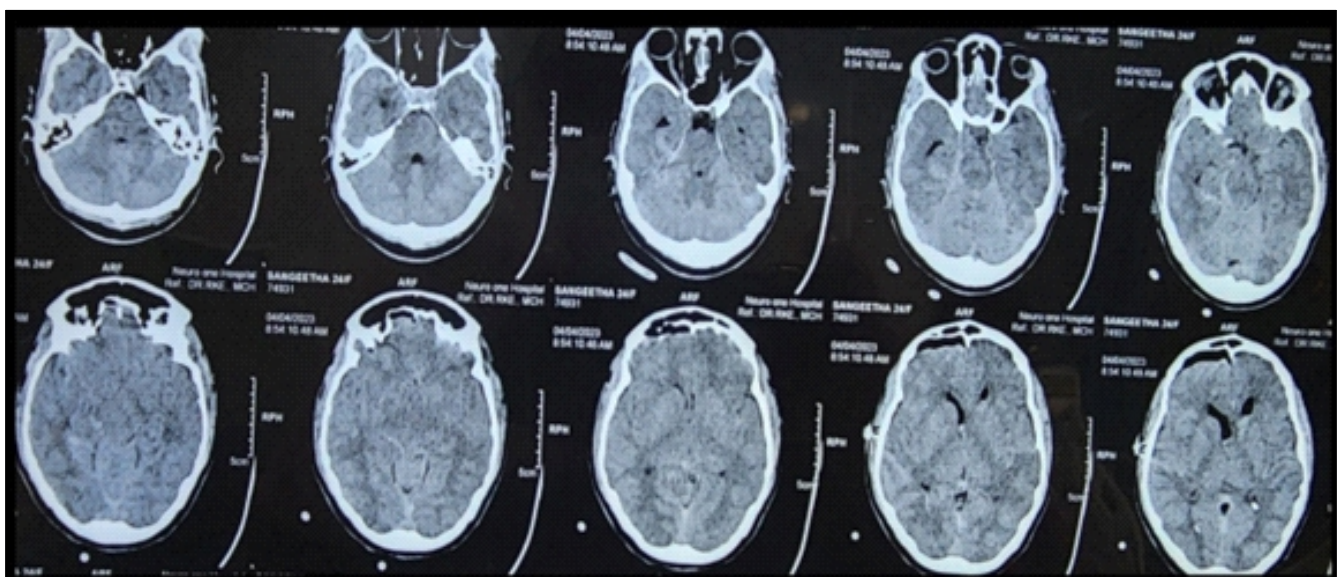
The CUSA device played a pivotal role in the surgical procedure. It allowed for the gentle fragmentation and aspiration of the tumor, minimizing trauma to the brain. This advanced technology further facilitated the total excision of the intraventricular mass.

Throughout the surgical procedure, the utmost care was taken to minimize the risk of complications and to ensure the patient's safety and well-being.

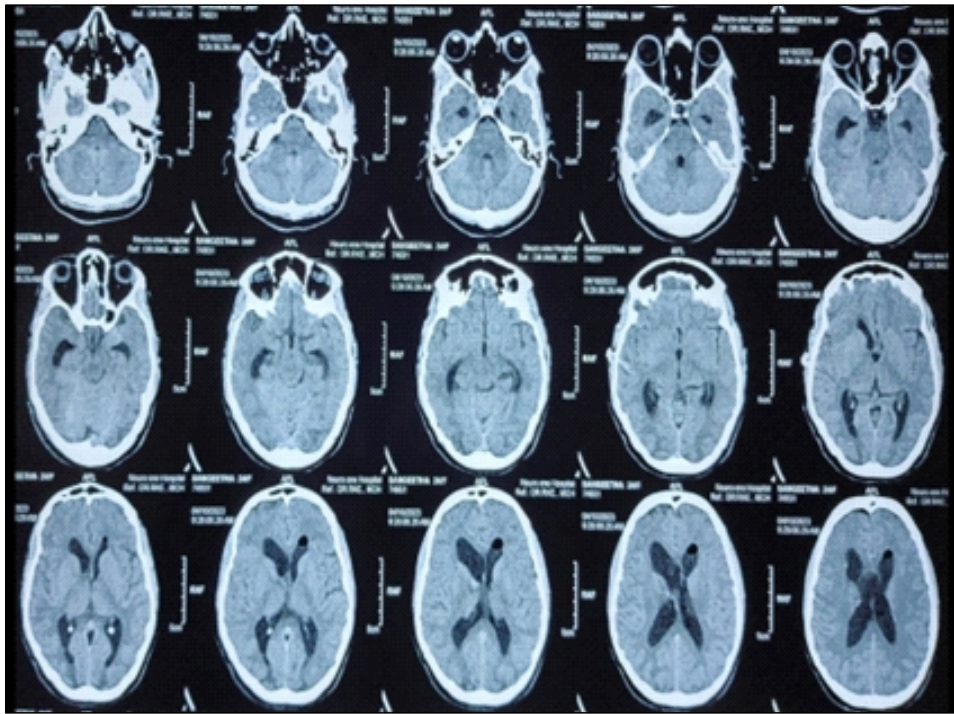
The combination of navigation guidance, a carefully chosen entry point, a transcallosal approach, and the use of advanced surgical tools like the CUSA contributed to the successful removal of the tumor while preserving the patient's neurological function.

POSTOPERATIVE IMAGING AND OUTCOME

Immediate Post Operative CT On Day-1



Follow Up CT Brain After 1 Week Of Surgery

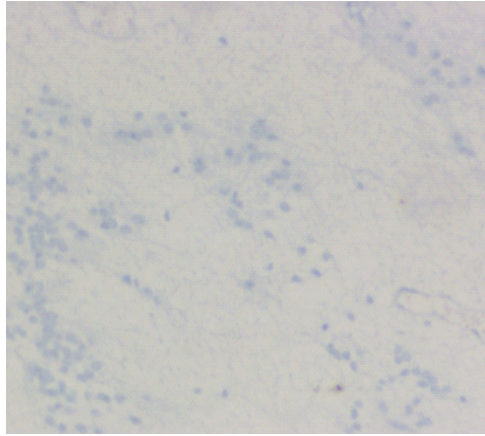


Following the intricate surgical procedure, postoperative imaging revealed the remarkable results. The tumor had been completely excised, and the ventricular system was restored to its normal function. With time, the patient's visual acuity improved, and the secondary optic atrophy began to reverse.

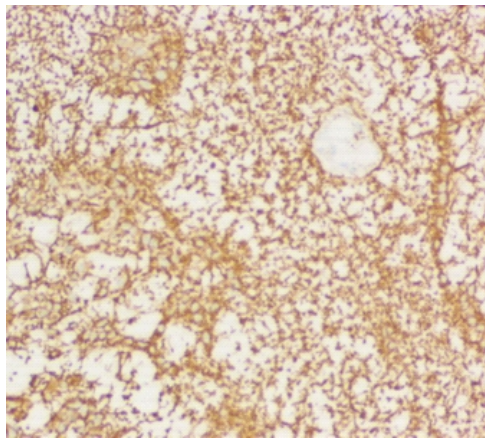
This success story is a testament to the skill and dedication of the neurosurgical team, the integration of cutting-edge technology, and the patient's resilience in the face of adversity.

HISTOPATHOLOGY : SUBPENDYMOMA GRADE - I

The histopathological examination of the intraventricular tumor has revealed that it is a Subependymoma Grade I. Subependymomas are rare, benign tumors that originate from the subependymal lining of the ventricles within the brain. These tumors are characterized by their slow growth and typically non-aggressive nature.



Isocitrate Dehydrogenase - Negative



Positive for glial fibrillary acid protein

The Grade-I classification indicates that the tumor is well-differentiated and exhibits a low mitotic rate, which further underscores its benign nature.

This is reassuring news for our patient, as Grade - I subependymomas are associated with a favorable prognosis and a low likelihood of recurrence.

CLINICAL IMPLICATIONS

The identification of a Grade I subependymoma aligns with the positive postoperative outcomes observed in our patient. With proper postoperative care and follow-up, our patient is expected to experience a significant improvement in her visual acuity and overall quality of life.

Case - 2

A 11 year female, who battle with intensified headaches and vomiting due to early papilloedema, a swelling of optic disc.

HISTORY

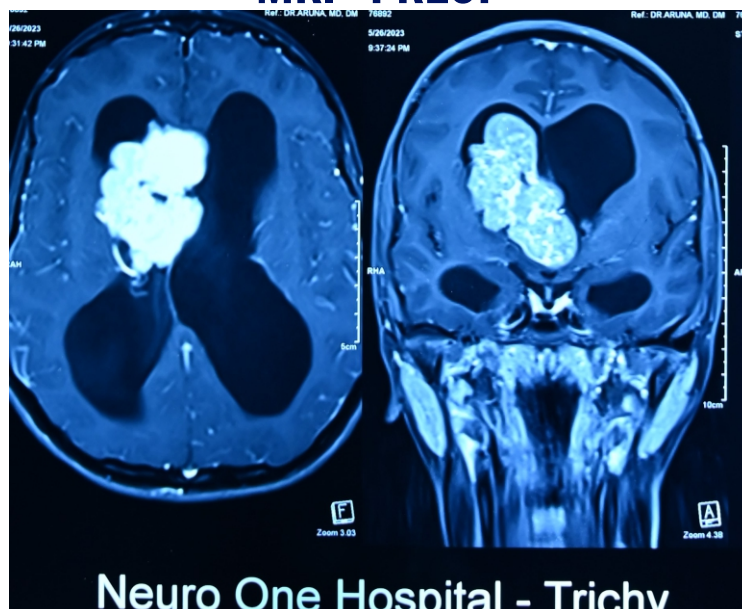
The young patient's battle began with persistent headaches and vomiting, symptoms she endured for a harrowing two-month period. However, her condition took a worrisome turn when her headaches intensified, accompanied by more frequent episodes of vomiting over the past week. These alarming symptoms demanded immediate attention, prompting her parents to seek medical help.

EXAMINATION

Upon examination, the medical team noted no significant clinical signs aside from the young girl's persistent complaints of headache and vomiting. However, a crucial finding emerged during the fundus examination - early papilloedema, a swelling of the optic disc, which raised concerns about increased intracranial pressure.

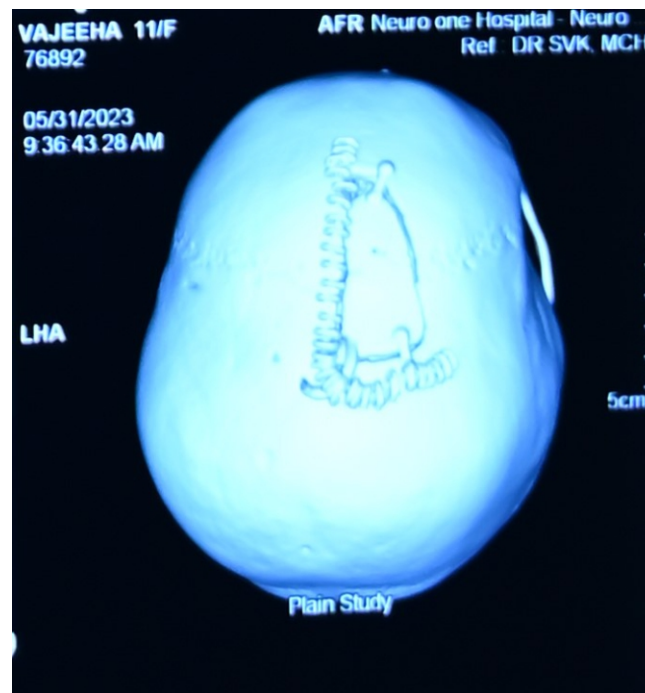
IMAGING

MRI - PREOP



To uncover the source of her distress, an MRI scan was conducted, unveiling a large intraventricular tumor that was causing obstructive hydrocephalus. This tumor had created a blockage within the ventricular system, leading to a buildup of cerebrospinal fluid, which in turn contributed to the papilloedema and the patient's debilitating symptoms.

SURGICAL INTERVENTION

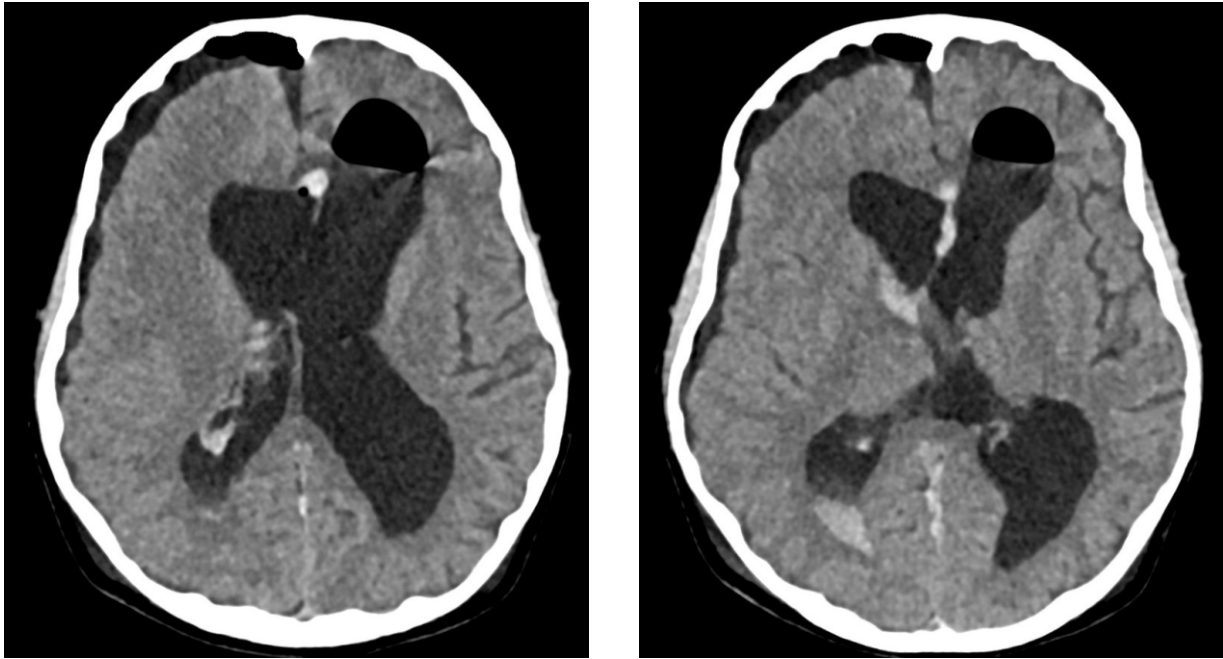


Recognizing the urgency of the situation, our neurosurgical team initiated a highly intricate and challenging procedure. The goal was to remove the intraventricular tumor while ensuring the preservation of healthy brain tissue. The procedure involved precise navigation, a small craniotomy, and a transcallosal approach, similar to the previous case.

POSTOPERATIVE IMAGING AND OUTCOME

Postoperative imaging brought forth a moment of triumph. The tumor had been completely excised, and the ventricular obstruction was resolved.

POSTOP



With the intraventricular tumor no longer exerting pressure on surrounding structures, the young girl's headaches and vomiting began to recede. Furthermore, the postoperative MRI showed no residual tumor, confirming the success of the procedure.

HISTOPATHOLOGY - GRADE-II ASTROCYTOMA

The patient's recovery was smooth and uneventful. Her headaches gradually subsided, and she regained her vitality. With ongoing medical follow-up and support, she is expected to enjoy a bright and healthy future.

CONCLUSION

The story of this courageous 11-year-old girl serves as a poignant reminder of the profound impact of neurosurgery on young lives. It underscores the importance of early diagnosis, expert surgical intervention, and the resilience of our patients. We are profoundly grateful for the opportunity to be part of her journey towards recovery.

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