SURG-19. COMPLETE RESOLUTION OF ADHD AFTER GROSS TOTAL RESECTION OF DISEMBRYOPLASTIC NEUROEPITHELIAL TUMOR
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A 3-year-old boy with a history of attention-deficit/hyperactivity disorder (ADHD) presented a single focal tonic seizure. A thorough physical examination revealed no neurological deficit. A contrast enhanced MRI showed an isointense lesion in the anterior part of the cingulate gyrus extending through the left frontal lobe. After initial evaluation, the parents refused surgical treatment and a close follow up was then considered. At the age of five, the ADHD became more evident and the patient was started on methylphenidate. Poor clinical response was seen with the initiation of stimulant. The boy presented a second generalized seizure and the parents agreed surgical management. An interhemispheric approach was then performed and a gross total resection was achieved. The histopathological diagnosis corresponded to a disembyroplastic neuroepithelial tumor (DNET). Four years after the resection, the patient is seizure free and the ADHD has also resolved without the need of medication. The disappearance of seizures is common after surgical resection of DNET tumors, but this case establishes an association with ADHD.

SURG-20. Diencephalic Syndrome in Pediatric Neurosurgery
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This report details the histories of twelve patients with clinical diencephalic syndrome who collectively demonstrate the variability found in the syndrome with respect to: (1) clinical course, (2) site of the tumor, and (3) ease of obtaining radiologic confirmation of the presence of a tumor. Timely diagnosis of diencephalic syndrome is not often the case for patients presenting with failure to thrive (FTT) because of its rarity and lack of specific symptoms. These cases illustrate the importance of cranial imaging and consideration of diencephalic syndrome for children presenting with FTT despite normal or increased caloric intake.

SURG-21. Endo- and Exoscopic Surgery for Pediatric Neurosurgical Operations
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INTRODUCTION: Recently endo- and exoscopic surgeries have been gradually performed in neurosurgery. To improve the accuracy and safety of our endoscopic procedures, we are currently trials 4k or 8k systems. Here we report our experience of endo- and exoscopic procedures for pediatric neurosurgery. METHODS: We retrospectively identified 22 patients (15 males, 7 females; mean age, 9.2 years) who underwent surgery for sellar lesions and intraventricular or intraparenchymal lesions with an endo- or exoscopic procedure at our institute between 2010 and 2020. We used a full HD endoscope system (Storz) and an organic electroluminescence (EL) monitor (Sony), and a 4k system (Sony and Olympus). VITOM 3D (Storz) was used as the exoscope. Videoscope (Olympus) was used as a flexible scope for intraventricular tumors.

RESULTS: We performed surgical procedures as 11 biopsies, 6 third ventriculostomies, 5 resections, and 3 fenestrations. The full HD system with organic EL monitor presented high color contrast. We could easily distinguish between tumor microstructure and the normal structure with the 4k system comparing to full HD. Moreover, the electronic zoom function enabled us to discriminate tumor boundaries without having to move the endoscope closer. As a result, we could delineate the surgical working space. VITOM 3D was simple to sharpen the focus on the wider surgical field, similar to the application of an operating microscope. CONCLUSION: In pediatric neurosurgery, an endo- or exoscope enables clear visual recognition of a boundary between tumor and normal area.

SURG-22. Cervical Spine Aneurysmal Bone Cyst of a Pediatric Patient
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BACKGROUND: Aneurysmal bone cysts (ABCs) are benign, expanding lesions that represent 15% of all primary spine tumors, and only 2% have been found at the cervical level. There are different therapeutic options; the most successful is complete surgical resection. Although not always possible, due to high blood loss that occurs during the procedure, a combination of surgical resection and other treatments was used in our case. We report our experience with endoscopic surgery in this situation.

METHODS: We present the case of an 8-year-old girl who presented with cervical pain and progressive neurological symptoms including numbness in her right arm, weakness of her right arm, and headache. MRI revealed a T1 isointense, T2 hyperintense lesion in C2 with epidural extension. The patient underwent a cervical total laminectomy followed by a cervical endoscopic resection of the lesion. The endoscopic resection was performed using a 3D iMRI system (Siemens). The lesion was dissected away from the spinal cord and the dura mater. The patient had an uneventful postoperative course with complete resolution of her symptoms. She was discharged home on postoperative day 5 and has been followed up for 6 months with no recurrence of symptoms.

CONCLUSION: Endoscopic surgery is a minimally invasive technique that offers excellent visualization of the surgical field. It is particularly useful in situations where the surgical field is difficult to access, such as cervical spine lesions. The use of endoscopy in this case allowed for a complete resection of the lesion with minimal morbidity and a quick recovery for the patient. Further research is needed to evaluate the long-term outcomes of endoscopic surgery compared to traditional open surgery in cervical spine ABCs.

SUG2-24. Novel Malleable Forcipes for Endoscopic Assisted Technique in Pediatric Brain Tumors
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Recent advances in optical devices and surgical instruments have been applied to neurosurgery. Even with modifications, one of the most serious risks is injury of neuronal and vascular structure caused by operation of surgical instruments in a narrow surgical field. Fixed instruments are not practical for pediatric brain tumor surgeries because the length of the curved or angled tip portion is limited because of the narrow entrance. We developed a novel malleable forcipes to resolve the difficulties related to microsurgical procedures. The malleable forcipes has two shafts with a sharp cup at the tip. The entire forcipes was made of stainless steel, with a silver and nickel alloy inserted between 10 and 40 mm from the tip. In the alloy part, the surgeon can flex the forcipes freely using a special cylinder. The other end prevent from slipping of the tip. The maximum angle that can be bent is 70 degrees vertically. We also developed a monoshaft malleable forcipes. We used these flexible forcipes in the case of various pediatric brain tumors including craniopharyngioma. We performed tumor resection by anterior interhemispheric tran-lamina terminalis approach. After procedure of tumor resection using microscope, endoscope inserted around the pituitary stalk. The piece of calcified tumor could be easily removed without any complications. These forcipes can be deformed to an appropriate angle and can be applied to various cases, especially pediatric brain tumors.

SUG2-29. A Single Centre Experience of Using Intraoperative MRI in Managing Pediatric Cranial Neuro-Oncology Cases
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The University of Malaya Medical Centre, Kuala Lumpur had acquired a intraoperative MRI (iMRI) brain suite via a public private initiative in September 2015. The MRI brain suite has a SIEMENS 1.5T system with NORAS coil system and NORAS head clamps in a two room solution. We would like to retrospectively review the cranial paediatric neuro-oncology cases that had surgery in this facility from September 2015 till December 2019. We would like to discuss our experience with regard to the clear benefits and the challenges in using such technology to aid in the surgery. The challenges include the physical setup and the paediatric neuro-oncology cases that had surgery in this facility. We would like to focus on the clear benefits and the challenges in using such technology to aid in the surgery. We would like to discuss our experience with regard to the clear benefits and the challenges in using such technology to aid in the surgery. The challenges include the physical setup and the paediatric neuro-oncology cases that had surgery in this facility. We would like to focus on the clear benefits and the challenges in using such technology to aid in the surgery.

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CONCLUSION: The use of iMRI also has other technical challenges such as ensuring the perimeter around the patient is free of ferromagnetic material, the process of transfer of the patient to the MRI scanner and as a consequence increased duration of the surgery. CONCLUSION: The use of iMRI also has other technical challenges such as ensuring the perimeter around the patient is free of ferromagnetic material, the process of transfer of the patient to the MRI scanner and as a consequence increased duration of the surgery.