

phase. *Conclusions:* Focal thickening and enhancement of affected cranial nerve is seen in the majority of pediatric ROCN. These findings are best seen with thin MRI cuts and gadolinium infusion.

## P.026

### Acute lower limb spasticity: Stiff person syndrome responsive to immunomodulatory therapy in an adolescent female

R Ogilvie (Edmonton)\* H Kolski (Edmonton)

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*Background:* Stiff person syndrome (SPS) is a rare disorder presenting with progressive stiffness and spasms of the musculature of the trunk and limbs. SPS is reported very rarely in children and adolescents, with 5 cases over 25 years in a recent 99 patient cohort. *Methods:* Case Study *Results:* Herein we report a 15 year old female, presenting with acute onset of rapidly progressive spasticity of the lower extremities. Initial exam was remarkable for markedly limited left knee range of motion, in addition to asymmetrical knee spastic catch and hyper-reflexia. EMG revealed almost continuous motor unit activity which dissipated with voluntary muscle contraction. Diagnosis was confirmed by high titres of glutamate decarboxylase (GAD65) antibodies >25,000 units/ml. The patient was initially treated with IVIG, baclofen, and diazepam followed by IV methylprednisolone, with mild subjective improvements. One day following the first rituximab treatment, she achieved spontaneous knee flexion and regained the ability to ambulate independently. There is a residual spastic catch at the knees. *Conclusions:* This case highlights that SPS, albeit extremely rare, should be considered in the differential diagnosis of acquired spasticity in children. Also noteworthy is the relatively rapid resumption of function with aggressive immunomodulatory treatments in this historically devastating disorder.

## PEDIATRIC NEUROSURGERY

## P.027

### Comparative effectiveness of flexible vs. rigid neuroendoscopy for ETV/CPC: a propensity score matched cohort and survival analysis

S Wang (Toronto)\* S Stone (Boston) AG Weil (Montreal) A Fallah (Los Angeles) BC Warf (Boston) J Ragheb (Miami) S Bhatia (Miami) AV Kulkarni (Toronto)

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*Background:* ETV/CPC has become an increasingly common technique for the treatment of infant hydrocephalus. Both flexible and rigid neuroendoscopy can be used, with little empirical evidence directly comparing the two. We, therefore, used a propensity-matched cohort and survival analysis to assess the comparative efficacy of flexible and rigid neuroendoscopy. *Methods:* Individual data were collected through retrospective review of infants < 2 years of age, treated at one of 2 hospitals: 1) Boston Children's Hospital, exclusively utilizing flexible neuroendoscopy, and 2) Nicklaus Children's Hospital, exclusively utilizing rigid neuroendoscopy. Patient characteristics and post-operative outcome were assessed. A propensity

score (PS) model was developed to balance patient characteristics in the case mix. *Results:* A PS model was developed with 5 independent variables: chronological age, sex, hydrocephalus etiology, prior CSF diversion, and prepontine scarring. PS analysis revealed that compared to flexible neuroendoscopy, rigid neuroendoscopy had an ETV/CPC failure OR of 1.43 and 1.31 respectively, compared to unadjusted OR of 2.40. Furthermore, in a Cox regression analysis controlled by propensity score, rigid neuroendoscopy had a HR of 1.10, compared to unadjusted HR of 1.61. *Conclusions:* Much of the difference in ETV/CPC outcome between endoscopy types is attributed to the case mix. An observational study or randomized controlled trial is required to provide evidence-based guidelines.

## P.028

### Global surgery for pediatric hydrocephalus in the developing world: a review of the history, challenges, and future directions

S Wang (Toronto)\* RT Muir (Toronto) BC Warf (Boston)

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*Background:* Pediatric hydrocephalus is one of the most common neurosurgical conditions and is a major contributor to the global burden of surgically treatable diseases. *Methods:* The authors conducted a literature review around the topic of pediatric hydrocephalus in the context of global surgery, the unique challenges to creating access to care in low-income countries, and current international efforts to address the problem. *Results:* Developing countries face the greatest burden of pediatric hydrocephalus due to high birth rates and greater risk of neonatal infections. This burden is related to more general global health challenges, including malnutrition, infectious diseases, maternal and perinatal risk factors, and education gaps. Unique challenges pertaining to the treatment of hydrocephalus in the developing world include a preponderance of postinfectious hydrocephalus, limited resources, and restricted access to neurosurgical care. In the 21st century, several organizations have established programs that provide hydrocephalus treatment and neurosurgical training in Africa, Central and South America, Haiti, and Southeast Asia. These international efforts have employed various models to achieve the goals of providing safe, sustainable, and cost-effective treatment. *Conclusions:* Broader commitment from the pediatric neurosurgery community, increased funding, public education, surgeon training, and ongoing surgical innovation will be needed to meaningfully address the global burden of untreated hydrocephalus.