PEDIATRIC REHABILITATION

Poster 458
Improvement of Premorbid Developmental Delay Following Treatment of Post Traumatic Hydrocephalus: A Case Report

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Disclosures: Cristina Sanders: I Have No Relevant Financial Relationships To Disclose
Case/Program Description: Patient is a 2-year-old male with a past medical history of Shone's complex, mild global delays and chronic hydrocephalus ex vacuo. Patient was admitted to outside children's hospital following fall from a bunk bed, approximately four feet. Initially, patient had reduced consciousness, vomiting, inability to maintain eye contact, and ataxic gait. He was found to have a small subdural hematoma, and unchanged hydrocephalus. Patient was monitored at outside hospital with neurologic improvement. Following the administration of midazolam for repeat imaging, patient became bradycardic and difficult to arouse. He was then transferred to our children's hospital for higher level of care. On PM&R consult, he was found to have right esotropia. Given new neurologic finding, neurosurgery was asked to re-evaluate, and neuro-ophthalmology were consulted. Fundoscopic examination revealed papilledema, and rapid MR with increased hydrocephalus. ICP monitoring revealed significant intracranial pressure. Ventriculoperitoneal shunt was placed. Following shunt placement, esotropia was resolved. Patient returned to baseline mental status.
Setting: Large Tertiatry Pediatric Hospital.
Results: On outpatient follow up visit, to include imaging, patient's ventricular size was markedly reduced. Gait was with improved stability and speech was with improved vocabulary.
Discussion: While it was initially thought that patient's decline in function was attributed to post-traumatic hydrocephalus, improvements in imaging and pre-morbid function at follow up suggest pre-morbid hydrocephalus was pathogenic.
Conclusions: Patients with global developmental delay whom also present with chronic hydrocephalus ex vacuo may warrant more aggressive evaluation and management.
Level of Evidence: Level V

Poster 459
Missed on Initial Imaging-Rare Head and Neck Injury: A Case Report

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Disclosures: Michael Wempe: I Have No Relevant Financial Relationships To Disclose
Case/Program Description: A 7-year-old male restrained passenger involved in a head-on motor vehicle collision was transported to an outside hospital where CT showed subarachnoid hemorrhages in the suprasellar cistern and anterior to the brainstem. CT Angiography Neck and CT Cervical Spine did not reveal any abnormalities. MRI Cervical spine showed edema in the posterior paraspinal muscles. He transferred from the outside hospital to our pediatric acute rehabilitation unit 17 days after his head-on motor vehicle collision for rehabilitation following a traumatic brain injury (TBI). On arrival, the patient had dysarthria, dysphagia, bladder incontinence, and bowel incontinence. He had weakness in all extremities. Upper extremities were more affected than lower extremities, and right extremities were more affected than left extremities. He had left abducens nerve palsy and left facial nerve paresis. With protrusion, his tongue deviated left.
Setting: Pediatric Acute Inpatient Rehabilitation Unit.
Results: During a modified barium swallow, the patient was noted to have abnormal alignment of the cervical spine. Immediately, his case was discussed with Orthopaedic Spine Surgery and Neurosurgery, and these teams were formally consulted. The patient had atlanto-occipital dislocation (AOD). He was placed in a cervical collar and then underwent an occiput to C2 posterior instrumentation and arthrodesis.
Discussion: AOD was once considered lethal, and in the 1970s, 6%-8% of all traffic fatalities had this injury. AOD is highly unstable and associated with brainstem injury, upper cervical cord injury, and cranial nerve injuries (VI, IX, X, XI, XII). This injury is frequently missed, and delayed diagnoses are common. CT and X-rays can look normal.
Conclusions: As it is frequently missed, one must have a high degree of suspicion to identify cases of AOD. Delayed identification can result in "catastrophic neurologic deterioration." Our patient had minimal cognitive findings and other deficits not consistent with TBI, raising the question of a missed injury.
Level of Evidence: Level V

Poster 461
Recovery in Acute Inpatient Rehabilitation for Pediatric Anti-N-methyl-D-aspartate Receptor Encephalitis: A Case Report

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Disclosures: Jacob Peacock: I Have No Relevant Financial Relationships To Disclose
Case/Program Description: A previously healthy 17-year-old female presented to Acute Pediatric Rehabilitation after diagnosis of Anti-N-methyl-D-aspartate receptor encephalitis, a rare autoimmune disorder often associated with ovarian teratomas. The patient experienced a typical constellation of neurologic symptoms including psychosis, seizures, and progression to autonomic dysfunction, ataxia, paresis, and catatonia. The patient was enrolled in aggressive therapy in the inpatient setting after diagnosis and medical treatment in order to improve the physical and cognitive sequelae of the disorder.
Setting: Acute Pediatric Inpatient Rehabilitation.
Results: This patient initially presented with acute psychosis which progressed to unresponsive catatonia while in an inpatient psychiatric unit after a prodromal flu-like illness. After an initial work up to explore psychological, intracranial and infectious etiologies, an LP showed pleocytosis with lymphocyte predominance. The patient was started on acyclovir for viral encephalitis with dystonic storming. After seizing with worsened neurologic status, the patient was found to be NMDA-receptor Ab serum positive, and a grade II ovarian teratoma was found and emergently removed. After surgery, plasmapheresis, IVIG, and rituximab, the patient presented to acute rehab with significantly limited function after a 3-month hospital course. Initially, the patient was unable to vocalize and required assistance for ADLs due to cognitive deficits, poor endurance, and weakness. The AIR hospitalization focused on an interdisciplinary approach, including psychological support for the patient's family. After a 3-week course, the patient improved to supervision level for mobility, ADLs and IADLs. Cognitive function and speech significantly improved by the time of discharge, allowing the patient to safely return home under parental supervision.
Discussion: Interdisciplinary resources available in an acute rehabilitation setting allowed this patient to improve significantly in both function and safety at the time of discharge. The family significantly benefitted from coordination of care in order to transition home. The rehabilitation team's ability to utilize broad therapeutic methods assisted this patient to progress to a safe discharge.
Conclusions: An acute inpatient rehabilitation course can be of benefit to patients and families after severe neurologic decline due to Anti-NMDA encephalitis, as individuals often have significant deficits

from the disease as well as due to the extended hospitalization associated with diagnosis and treatment.
Level of Evidence: Level V

Poster 462
Physiatrist Evaluation of Functional Deficits in Pediatric Vascular Malformations: A Retrospective Review

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Disclosures: Megan Flanigan: I Have No Relevant Financial Relationships To Disclose
Objective: To determine the frequency of Physiatry evaluation of patients in a multidisciplinary pediatric vascular malformation (VM) clinic and demonstrate the role in functional monitoring and interventions in this population.
Design: Retrospective Review.
Setting: Pediatric Multidisciplinary Vascular Malformation Clinic.
Participants: Pediatric patients with a variety of different vascular malformations including syndromes that include vascular lesions. Ages 19 days old to 19 years old. Seen from 9/2014-12/2015.
Interventions: Retrospective chart review of patients seen in this clinic since 9/2014, looked at notes from physiatrist, types of patients seen, further follow up scheduled. Noted interventions performed related to function.
Main Outcome Measures: Functional and supportive interventions recommended by Physiatry including number of referrals for physical therapy (PT) and occupational therapy (OT), orthotics, treatment, follow up or other intervention.
Results: 53 patients seen in clinic. 56.6% were seen by Physiatry and were either prescribed intervention (35.8%) or recommended further monitoring (20.8%). Interventions included referrals for PT (4), OT (3), PT and OT (2), lymphedema care (5), Ankle Foot Orthosis (AFO) fitting (3), shoe lifts for leg length discrepancy (3), braces for contractures (2) and home exercise recommendation (1). Patients requiring intervention were more likely to have lesions on extremities or joints. Conditions affecting function in these patients included leg length discrepancy, gait abnormalities, weakness, joint contracture, lymphedema or pain.
Conclusions: Functional deficits are very common in patients with Vascular Malformations. These patients benefit from the addition of Physiatry to multidisciplinary VM clinics providing better monitoring and intervention for prevention of long term deficits. Optimally patients should be screened for lesions affecting extremities or joints as these are more likely to need monitoring or intervention.
Level of Evidence: Level IV

Poster 463
Unexpected Transverse Myelitis after Dinutuximab Therapy for Relapsed Neuroblastoma: A Case Report

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Disclosures: Jaclyn Barcikowski: I Have No Relevant Financial Relationships To Disclose
Case/Program Description: A 12-year-old girl with relapsed, high-risk neuroblastoma, treated with Cycle 2 of GD2-based immunotherapy (irinotecan, temodar, and dinutuximab), presented 1 day after treatment with acute onset of bilateral lower extremity weakness, numbness, tingling, and loss of bowel and bladder function. Contrast-enhanced MRI of her spine demonstrated a longitudinally-extensive, non-enhancing T2-hyperintense lesion in the central spinal cord, extending from C5 to the conus medullaris, consistent with transverse myelitis. Serum and CSF studies were negative for autoimmune or infectious etiologies. The consensus from multi-disciplinary tumor board was that her transverse myelitis was a result of dinutuximab therapy. This patient was treated with high-dose methylprednisolone, followed by an oral steroid taper, and 5 days of plasmapheresis. Initial therapy evaluations revealed a moderate to maximum assistance functional level due to her paraplegia at the T11 level. Premorbidly, she was functionally independent. Upon transfer to the inpatient rehabilitation unit, the patient had improved sacral sensation, but was unable to voluntarily suppress bowel movements or urinate spontaneously and still required intermittent catheterization. She had some return of sensation, but only mild improvements in strength.
Setting: Children's hospital.
Results: The patient had a remarkable recovery during her inpatient rehabilitation stay, with resolution of normal sensation and improvement of strength. She was able to ambulate with a rolling walker and demonstrated an overall improved functional level prior to discharge from the hospital.
Discussion: This is the first reported case, to our knowledge, of transverse myelitis as a side effect of dinutuximab therapy. This patient made a remarkable functional recovery, which was not initially expected given the extent of her lesions and deficits. In a multidisciplinary hospital setting, understanding the potential neurological side effects of oncological therapies is beneficial for physiatrists to aid in prognosis discussions and anticipation of recovery trajectory.
Conclusions: In this case of transverse myelitis following treatment with dinutuximab, the patient had a remarkable functional recovery given early detection, treatment and rehabilitation.
Level of Evidence: Level V

Poster 464
Finicky Eating with Autism Spectrum Disorder, an Explanation for Antalgic Gait: A Case Report

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Disclosures: Rishi Shah: I Have No Relevant Financial Relationships To Disclose
Case/Program Description: A 6-year-old boy with history of Autism spectrum disorder suffered progressive right lower extremity pain with refusal to walk. Patient did not experience any delays or difficulties with mobility previously. Patient had 3 acute care hospitalizations in four months to identify etiology of pain, with no definitive cause. During hospitalizations, patient underwent X-rays of hip, EMG, NCV, MRI of the hip, MRI of the brain and spine, two lumbar punctures, and bone marrow biopsy. Results did not reveal any clear etiology of pain. Laboratory data did reveal Vitamin D deficiency, anemia and iron deficiency. Patient did not receive Vitamin D supplementation while in acute care hospital and was discharged home with suggestion of Vitamin D and iron supplementation. At home patient continued to functionally decline and became reliant on being carried or using a wheel chair for ambulation, this prompted admission to acute inpatient rehabilitation. On admission, functional independence measure (FIM) was noted to be 34. Physical therapy, occupational therapy, speech therapy and neuropsychology were initiated. Due to the severity of Vitamin D deficiency, anemia and iron deficiency patient was placed on 10000IU of Vitamin D as well as 325mg of ferrous sulfate. With these interventions the patient was able to make significant functional gains and was able to be discharged home with a FIM score of 40.
Setting: Acute inpatient rehabilitation.
Results: FIM of 34 and discharge FIM of 40 a total FIM gain of 6.
Discussion: Children with autism spectrum disorder may have an increased risk for vitamin deficiencies. This may be due to aversion to foods rich in essential vitamins, poor enteral intake or diet restrictions. Vitamin D is an essential vitamin for the body, as it assists in calcium absorption and bone mineralization. Deficiency to Vitamin D in children can lead to Rickets or osteomalacia. Refusal to walk due to