CONCLUSION: Patient education and setting treatment expectations are important for optimizing cancer care. For MESCC requiring decompression, stabilization and concomitant radiosurgery; presence of neurological deficits and diminished performance status, lumbar tumor level and female gender were associated with greater PRO improvement.

342 Obstetric Management and Maternal Outcomes of Childbirth Among Patients with Chiari Malformation Type I
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INTRODUCTION: There is little data regarding the obstetric management or maternal outcomes of patients with a diagnosis of Chiari malformation Type I (CM-I) giving birth.

METHODS: We examined de-identified insurance claims data from a large, privately insured health care network of over 58 million beneficiaries throughout the United States and identified all patients with a diagnosis of CM-I as well as one or more admissions for obstetric delivery. Using both inpatient and outpatient billing data, we examined obstetric practices and maternal outcomes.

RESULTS: There were 1048 hospitalizations for delivery in 866 patients with a CM-I diagnosis at any point, including 103 hospitalizations for delivery in 83 patients who underwent performance of CM-I decompression (CMD) either before or after childbirth. Among 400 births where CM-I was diagnosed prior to delivery, rates of Cesarean section were higher (42.3% vs. 36.2%, P = 0.05) and rates of epidural analgesia were lower (45.3% vs. 55.4%, P = 0.001) compared to 648 births where CM-I was diagnosed after delivery. The rate of serious maternal morbidity among all women delivering before or after a diagnosis of CM-I was 4.8/1000 deliveries, similar to the rate reported by similar previous studies of the general population based on administrative data (5.1/1000), and there was no serious maternal morbidity among any of the 83 patients who underwent performance of CMD.

CONCLUSION: Analysis of a large nationwide health care network showed diagnosis of CM-I prior to delivery was associated with higher rates of Cesarean section, with lower rates of epidural analgesia. Rates of serious maternal morbidity among women with a diagnosis of CM-I were similar to those noted in other studies of the general population. The data suggest a pre-delivery diagnosis of CM-I may influence obstetric decisions for women with this condition despite no evidence of substantively increased delivery risk in this group.

343 A New Computed Tomography-based Frontal Contusion Score for Patients with Traumatic Brain Injury
Qiang Yuan

INTRODUCTION: Frontal contusions are characterized by gradually progressing hematoma/edema and rapid deterioration owing to central herniation, even if the patient is conscious at the time of admission. This study 1) examined how to better characterize frontal contusion in a series of traumatic brain injury (TBI) patients, and 2) developed and validated a new frontal contusion score (FCS) based on the shape of the frontal contusion to facilitate rapid, accurate assessment of the computed tomography (CT) findings of frontal contusion.

METHODS: This study retrospectively analyzed data from 206 consecutive patients with isolated frontal contusions. The new score is based mainly on the shape of the frontal brain contusion. Forward stepwise logistic regression was used to identify independent predictors of acute neurological deterioration and refractory intracranial hypertension. A receiver-operating characteristic (ROC) curve was then drawn based on the FCS.

RESULTS: The incidence of acute neurological deterioration increased significantly as the FCS increased. FCS, obliteration of the basal cistern, and a serum sodium decrease of more than 10 mmol/L within 24 hours were independent predictors of acute neurological deterioration. Each one-unit increase in FCS led to a 57% increase in the odds of acute neurological deterioration [odds ratio (OR), 1.57; 95% confidence interval (CI), 1.25 1.95]. The area under the curve (AUC) of the FCS that predicted acute neurological deterioration was 0.727 (95% CI 0.656 0.797). The incidence of refractory intracranial hypertension increased significantly with an increase in the FCS. Only FCS and obliteration of the basal cistern remained predictors of refractory intracranial hypertension. Each one-unit increase in FCS led to a 49% increase in the odds of refractory intracranial hypertension (OR, 1.49; 95% CI, 1.06 2.10). The area under the curve (AUC) of the FCS for predicting refractory intracranial hypertension was 0.647 (95% CI 0.532 0.763). The FCS was not an independent predictor of the 6-month mortality (OR, 0.87; 95% CI, 0.59 1.28) or 6-month unfavorable outcome (OR, 1.32; 95% CI, 0.93 1.87).

CONCLUSION: Therefore, the FCS is a valid evaluator of the character of frontal contusion. The clinical utility and generalizability of this score need to be validated in a large sample.

344 Studying the Single-cellular Substrates of Autism in a Mouse Model
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INTRODUCTION: Social dysfunction is among the most prominent features of autism spectrum disorder (ASD) as well as many other developmental and neuropsychiatric conditions. What precise neuronal mechanisms are disrupted in ASD, however, are unknown. The goal of this study is to provide a basic cellular-level understanding and treatment model for ASD.

METHODS: We developed an alternating appetitive/aversive paradigm in which socially-paired mice experienced both acute stress and food reward while we simultaneously recorded neuronal activity from medial prefrontal cortex. We compared WT to SHANK3 -/+ mice as a model of ASD, to explore the neuronal correlates socially relevant information and its dysfunction.

RESULTS: Individual medial prefrontal neurons in SHANK3 -/+ mice displayed markedly different response profiles compared to that of WT. Specifically, neurons in SHANK3 -/+ mice demonstrated little differential response when presented with another unfamiliar mouse or nonsocial totem undergoing the same condition. However, in trials where the recorded mouse and a familiar mouse both receive a negative (painful) stimulus, SHANK3 -/+ mice demonstrated a significantly attenuated firing rate in response to the conspecific mouse, while the WT mice did not show any such differences. This attenuation was not observed when the other mice received positive (rewarding) stimuli.