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BACKGROUND: Superior semicircular canal dehiscence (SSCD) is a rare bony defect that results in an opening between the inner ear and middle cranial fossa, which often results with patients presenting with auditory and vestibular symptoms. Ehlers-Danlos Syndrome (EDS) is an inherited connective tissue disorder that is characterized by joint hypermobility and skin extensibility. CLINICAL PRESENTATIONS: We previously reported the case of a 50-year-old woman with a 15-year history of auditory and vestibular symptoms. Computed tomography confirmed the presence of bilateral dehiscence in her superior semicircular canals. Past medical history was significant for Ehlers-Danlos Syndrome (EDS) Hypermobility Type. We present a new case presentation of a 36-year-old female with similar symptoms and a medical history significant for EDS-Hypermobility and confirmation of bilateral superior semicircular canal dehiscence. DISCUSSION: Both patients were treated via middle fossa craniotomy, with follow-up visits indicating symptom improvement. Because of their rarity, this study highlights the possibility of a connection between the two diagnoses.

HOUT-23. ASSOCIATION BETWEEN TREATMENT FACILITY VOLUME AND MORTALITY IN PATIENTS WITH GLIOBLASTOMA (GBM): A LARGE NATIONAL ANALYSIS

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BACKGROUND: GBM is an aggressive and incurable primary malignancy of the brain, treated with surgical resection and chemo-radiotherapy, yet it has a dismal prognosis of 12–14 month overall survival (OS). Optimal outcomes require an experienced team providing multidisciplinary management. We explored the association of treatment facility volume and mortality in patients with GBM. METHODS: We identified incident GBM (ICD-O-3 code: 9440/3) cases from the National Cancer Database (NCDB) (2004–2013) and utilized Cox-regression to determine the facility volume-outcome (volume=quartiles; Q) relationship, adjusting for year of diagnosis, demographic (sex, age, race, ethnicity), socio-economic (income, education, insurance type), geographic (area of residence, treatment facility location, travel distance) and co-morbidity factors (Charlson-Deyo score). RESULTS: There were 114,467 patients (median age 60 years, range: 18–90) with GBM treated at 1207 facilities of which, 54.8% were men. Median annual facility volume was 5 patients/year (range: 0.1–136.4). The top 14 (1.2%) facilities treated >60 patients/year (10%). Median overall survival (OS) was 15 months There were significant differences (all $p<0.001$) in patient characteristics by facility volume. Unadjusted median OS by facility volume (months) was Q1: 29.1, Q2: 32.9, Q3: 36.4, Q4: 48.2 ($p<0.0001$). Multivariate analysis showed facility volume to be independently associated with all-cause mortality (Reference Q4; Q3 HR: 1.30, 95% CI 1.28–1.33; Q2 HR: 1.36, 95% CI 1.36–1.43; Q1 HR: 1.58 95% CI 1.50–1.67). OS disparity by facility volume is persistent but not worsening in recent years (2010–2013 vs 2004–2005). CONCLUSIONS: In GBM, facility-volume independently affects OS of the patients. Attempts should be made to address modifiable factors and get patients access to high-volume centers earlier in the disease course.

HOUT-24. DURAMATRIX-ONLAY® PLUS IN CRANIAL SURGERY IS ASSOCIATED WITH AN ACCEPTABLE COMPLICATION PROFILE: A CASE SERIES

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BACKGROUND: DuraMatrix Onlay® Plus (Stryker, Kalamazoo, Michigan) is a collagen dura membrane derived from purified bovine Achilles tendon. The matrix provides a scaffold for collagen synthesis and is intended to be used as an onlay without the need for dural sutures. OBJECTIVE: To describe our experience with 33 consecutive patients who underwent a duraplasty procedure using the novel DuraMatrix Onlay® Plus collagen dura membrane. METHODS: This is a retrospective case series of consecutive patients who underwent a duraplasty procedure at a single academic hospital in Los Angeles, California between May 2016 and March 2017. The primary outcome is the rate of cerebrospinal fluid (CSF) leak. Secondary outcomes include the rates of dural substitute complication, infection, and removal. RESULTS: Thirty-three patients underwent a duraplasty procedure using the DuraMatrix Onlay® Plus material. The average age of the patients was 41 ± 21 years (range 2–75 years). There were 18 females and 15 males. The majority of procedures were elective and for resection of a lesion (n = 19, 58%), with the average size of material used measured at 18 ± 14 cm2. There were no secondary CSF leaks at an average follow-up of 3 months. The rates of dural substitute complication, infection, and removal were 6%, 6%, and 3%, respectively. In one patient, the dural substitute was removed for concern of infection. CONCLUSION: DuraMatrix-Onlay® Plus is associated with an acceptable complication profile, including a low rate of CSF leak.

HOUT-25. ADHERENCE TO TUMOR TREATING FIELDS IN PATIENTS WITH HIGH-GRADE GLIOMA – A SINGLE CENTER EXPERIENCE

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BACKGROUND: The addition of alternating electric fields with low intensity (1–3 V/cm) and intermediate frequency (100–300 kHz), known as Tumor Treating Fields (TTFields), to adjuvant temozolomide demonstrated significant clinical benefits in newly diagnosed glioblastoma (GBM) patients. Post-hoc analysis of the EF-14 trial revealed a strong correlation of adherence to TTFields therapy with prolonged OS, underlining the importance of a high compliance rate. Here, we report on TTFields therapy adherence of thirty-four patients with high-grade glioma (HGG) treated with TTFields. METHODS: Thirty-four patients diagnosed with GBM (28 patients) and astrocytoma WHO°III (6 patients), respectively, were treated with TTFields at our institution. Patients were introduced to the therapy during our neurooncologic consultation hours. We evaluated the compliance reports that were generated at the monthly technical check of the device. RESULTS: The median age of high grade glioma (HGG) patients at therapy start was 53.5 [32–67] years. 21 of the 28 GBM patients were newly diagnosed and the remainder had recurrences. These patients showed a gender distribution female to male of 1:1.15, demonstrating a higher ratio of female patients compared to the typical GBM population with 1:1.7. Patients with newly diagnosed GBM were on TTFields therapy for a median of 6.5 months with median treatment compliance of 86.4%. No significant difference regarding compliance was observed between female (87.1%) and male (81.7%). Comparison of patients with newly diagnosed GBM and recurrent GBM showed no significant difference in therapy adherence with a median compliance of 80.0%. Astrocytoma WHO°III patients showed a compliance rate of 86.2%. CONCLUSION: TTFields therapy was well accepted by high grade glioma patients treated at our institution with a high median compliance to the therapy substantially above the recommended 75% threshold and irrespective of sex and diagnosis.

HOUT-26. SURVIVAL OUTCOMES IN GLIOBLASTOMA PATIENTS USING TTFIELDS: THE BAYLOR SCOTT & WHITE MEDICAL CENTER IN CENTRAL TEXAS EXPERIENCE

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BACKGROUND: Glioblastoma is a CNS cancer with extremely poor survival rates despite advances in chemoradiation therapy. TTFields (Optune) are an FDA approved option for treatment of glioblastoma. PURPOSE: This article aims to determine whether Optune compliance rates in patients with both newly diagnosed and recurrent glioblastoma affects survival. METHODS/ANALYSIS: A comprehensive list of glioblastoma patients was extracted from the Baylor Scott & White tumor registry from 2012–2018. Data on compliance, demographics, IDH/MGMT status and survival was compiled on Optune users. These variables were analyzed using the Welch T-test to ascertain their impact on compliance and survival. A Pearson correlation coefficient was calculated to determine the relationship between compliance and survival post-Optune. RESULTS: 37 patients were identified (median age: 60, range: 21–86). Males were more affected (60.0%), the frontal lobe was the most common site (35.1%), and the median survival was 17 months. There was no statistical difference in survival length (months) based on gender (males = 21.5, females = 18.9, $p = 0.52$), MGMT status (methylated = 21.8, unmethylated = 17.8, $p = 0.40$), and IDH status (wild = 19.1, mutated = 30.2, $p = 0.41$). The average Optune compliance was 66.2%, with no statistical difference based on age (age < 50 = 54.1%, age > 50 = 71.1%, $p = 0.06$) and gender (male = 66.6%, female = 65.6%, $p = 0.89$). The correlation coefficient comparing compliance and survival post-Optune was $R = -0.247$ ($p = 0.141$). CONCLUSION: Studies have shown that Optune compliance of 75% or greater can improve outcomes. In our own limited study, the average compliance was markedly below at