main (2nd - 14 years old after birth). tumor location: 22 sellar or parasellar regions, 8 CP angles, 7 oculomoter nerves, and 3 petrous bone, treatment: duration of survival significantly improved all macroscopic tumor resection by the operation, but, in small pontine part AT/RT, an outcome tended to be poor. On the other hand, in AT/RT which occurred in the sellar region, all cases adult woman tended to have good prognosis. It is necessary for AT/RT (central AT/RT) in the brain to recognize that there is extra-parenchymal AT/RT (peripheral AT/RT) tumor which we reported this time which came to be recognized widely.

CLINICAL OTHERS (COT)

COT-01

EXPERIENCE OF INTRODUCING ALTERNATING ELECTRIC FIELD THERAPY FOR AN ELDERLY GLIOBLASTOMA PATIENT LIVING ALONE

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INTRODUCTION: In December 2017, alternating electric field therapy (EFT) for glioblastoma was covered by insurance in Japan, but because of treatment complexity, the number of cases of introduction remains small, and the threshold for introduction is even higher for elderly patients living alone. CASE PRESENTATION: The patient was an 84-year-old man, who are living alone, and an open biopsy was performed for a contrast-enhanced neoplastic lesion in the left frontal lobe. The clinical diagnosis was glioblastoma and Ki-67 was 60%. Following initial treatment, the tumor recurred within 1 month prior to the initiation of alternating EFT. Nonetheless, steroid was administered, he could not walk without aid and was forced get admitted on the day after the introduction, and rehabilitation treatment was instituted. Motor aphasia was slowly disappeared, and he could walk stably without help after 2 weeks and was discharged on day 28. Magnetic resonance imaging prior to discharge indicated that the tumor had shrunk and cerebral edema had ameliorated. Following discharge, the treatment could be continued with the help of a home-visiting nurse, and no adverse events were noted. DISCUSSION: In the current case, treatment with temozolomide (TMZ) could not be conducted because of neutropenia, but alternating EFT may have been effective because of the high mitotic activity of the tumor. In Japan, from December 2017 to April 2020, alternating EFT was initiated in 440 patients, 5 (1.1%) of whom were patients living alone, including the current case. The other four were all men in their 50s and not elderly. CONCLUSION: In the case of elderly patients living alone, medical practitioners may be able to control the tumor by preparing the environment for alternating EFT for patients and keeping the patient willing to undergo treatment.

COT-02

THE OPENING OF TUMOR TREATING FIELDS WITH ONLINE SUPPORT SYSTEM

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BACKGROUND: EF-14 trial showed the efficacy of tumor treating fields (TTF), and TTF was approved as a standard therapy for glioblastoma. In TTF opening, Device Support Specialist (DSS) should explain how to use it for the patient and family. However no DSS does always stay in our Yamaguchi prefecture, and DSS has to come to our hospital across other prefectures. On the other hand, COVID-19 infection is still spreading and it is sometimes tough to move from a big city to countryside. Here, we would present the first experience of TTF opening with online DSS support. A case REPORT: A 68 years old man had right hemiparesis. MRI showed multiple lesions in the left hemisphere, and biopsy showed glioblastoma. After 1 month from chemo and radiotherapy, TTF was introduced. DSS from Tokyo explained how to use TTF via PC camera with TV monitor. A skilled neurosurgeon and special nurse also helped them in front of him. His head and the attached array were well checked from DSS with PC camera moving around him. Everything was smooth and he started TTF. CONCLUSION: Online medicine should be absolutely spreading. In countryside, it is hard that DSS comes to our hospital from a big city. TTF opening could be favorable via online system with skilled medical stuffs.

COT-04

CIRCULATING BIOMARKER FOR GLIOBLASTOMA AND PRIMARY CENTRAL NERVOUS SYSTEM LYMPHOMA -NEXT GENERATION SEQUENCING OF SMALL NONCODING RNA-

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OBJECTIVE: Glioblastoma (GBM) and Primary Central Nervous System Lymphoma (PCNSL) are common intracranial malignant tumors. They sometimes present similar radiological findings and diagnoses could be difficult without surgical biopsy. For improving the current management, development of non-invasive biomarkers are desired. In this study, we explored the differently expressed circulating small noncoding RNA (sncRNA) in serum for specific diagnostic tool of GBM and PCNSL. **Material & METHODS**: Serum samples were obtained from three GROUPS: 1) GBM patients (N=26), 2) PCNSL patients (N=14) 3) healthy control (N=114). The total small RNAs were extracted from serum. The whole expression profiles of serum sncRNAs were measured using Next-Generation Sequencing System. We analyzed serum levels of sncRNAs (15–55 nt) in each serum samples. The difference of sncRNAs expression profile among three groups were compared. Data analysis was performed by logistic regression analysis followed by leave-one-out cross-validation (LOOCV). The accuracy of diagnostic models of sncRNAs combination were evaluated by receiver operating characteristic (ROC) analysis. **RESULTS**: We created the combination models using three sncRNA in each models based on the logistic regression analysis. The model 1 (based on sncRNA-X1, X2 and X3) enabled to differentiate GBM patients form healthy control with a sensitivity of 92.3% and a specificity of 99.2% (AUC: 0.993). The model 2 (based on sncRNA-Y1, Y2 and Y3) enabled to differentiate PCNSL patients form healthy control with a sensitivity of 100% and a specificity of 93.9% (AUC: 0.984). The model 3 (based on sncRNA-Z1, Z2 and Z3) enabled to differentiate GBM patients form PCNSL patients with a sensitivity of 92.3% and a specificity of 78.6% (AUC: 0.920). **CONCLUSION**: We found three diagnostic models of serum sncRNAs as non-invasive biomarkers potentially useful for detection of GBM and PCNSL from healthy control, and for differentiation GBM from PCNSL.

COT-05

EXPERIENCE OF FERTILITY PRESERVATION IN 3 MALE CASES AND 1 FEMALE CASE WITH HIGH-GRADE GLIOMA

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High-grade glioma (HGG) has a low survival rate, and fertility preservation (FP) has rarely been discussed in the field of Japanese neurosurgery. We report on 4 reproductive patients, including 2 male patients who became biological fathers. Case 1 was a 23-year-old man with anaplastic oligodendroglioma (AO) of the right frontal lobe. Temozolomide maintenance therapy (TMZ-MT) was completed 42 courses after the initial surgery for economic reasons. 21 months later, a local recurrent lesion appeared, so TMZ-MT was restarted after removal this lesion. When he married at 32 years old, the couple wished a desire for childbearing. The TMZ-MT was stopped at 47 courses from the resumption and they aimed for spontaneous pregnancy. At 5 months after discontinuation of TMZ-MT, Gd-enhanced lesions increased again, so we changed the course to in vitro fertilization and resumed TMZ-MT. The couple had a biological baby at his 33 years and 10 months old. Case 2 was a 33-year-old married man with AO of the right parietal lobe. After partial removal, the FP information was explained and cryopreservation of sperm was performed. As of 23 months after the first operation, he became a biological father by in vitro fertilization. Case 3 was a 31-year-old married man with diffuse midline glioma (H3K27M mutant) in the cervical spinal cord. After partial removal, we provided FP information in the same manner, but the couple did not chose cryopreservation of sperm due to his mRS 5. Case 4 was a 24-year-old female with anaplastic astrocytoma of the brain stem. FP information was provided after stereotactic biopsy, but she chose to start radiochemotherapy without cryopreservation of eggs. Patients of reproductive age with HGG, especially oligodendroglial tumors who have a higher survival rate than astrocytic tumors, should be positively informed about FP before treatment begins.

COT-07

CEREBROVASCULAR COMPLICATIONS IN ADULT PATIENTS WITH MALIGNANT BRAIN TUMOR

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BACKGROUND: According to the development of new treatment modalities, patients with malignant brain tumor have longer survival and they have more chances to have stroke.

STUDY POPULATION: We retrospectively reviewed 509 patients with ischemic stroke and 445 patients with hemorrhagic stroke who visited Kyoto University Hospital between January 2010 and December 2019 and the as-