CS-09 PROPOSAL OF A NEW CLASSIFICATION FOR DETERMINING THERAPEUTIC STRATEGY ACCORDING TO THE PROGRESSION OF OLFACTORY NEUROBLASTOMA
Hirofumi Motogi1, Shigeru Yamauchi1, Yukatomo Ishi1, Shogo Endo2, Hiroi Yuki Kobayashi1, Shunsuke Terasaka1, Masanobu Suzuki, Yuji Nakamura, Akihito Homma, Kiyohiro Houkin1
1Department of Neurosurgery, Graduate School of Medicine, Hokkaido University, Sapporo, Japan

INTRODUCTION: Olfactory neuroblastoma (ONB) is a rare type of malignancy that infiltrates and propagates from the nasal cavity to the anterior skull base and into the cranium. Various treatment strategies have been used at different institutions and time of treatment. Although the staging system proposed by Kadish is commonly adopted it has not proven useful for predicting prognosis or choosing among treatment strategies. Factors to be considered have increased accordingly, for example, whether to perform ESS alone or in combination with craniotomy, whether to try preserving the olfactory sense and whether to use neoadjuvant chemotherapy. In this study, we reviewed ONB cases treated at our institution to propose a new classification system to help determine treatment strategies.

METHODS: Thirty-four patients treated at Hokkaido University were included. Stages of craniocaudal progression were defined as Nasally/Param nasally localized (NP), Frontal Base progression (FB), and Brain invasion (BI). Stages of lateral progression were defined as Multilobe (M) or Lateral extension (L), and unilateral lateral extension (UL). Between 2008 and 2016, patients at the BI stage were proactively treated with neoadjuvant chemotherapy and achieved long-term survival (mean overall survival, 64.2 months). However, no standard way of choosing among treatment options was established. M-stage patients underwent concurrent craniotomy. From 2017 onwards, 5 patients were treated according to the new classification system. All were FB-M cases, including 4 cases of B disease, in which ESS alone followed by radiotherapy was used. One patient in the FB-M-U category underwent unilateral craniotomy and the olfactory sense was preserved. In general, the treatment with ESS alone appeared to be preferred for M disease, and surgery after neoadjuvant chemotherapy was advisable for B1 cases.

CONCLUSION: The result suggests that the new classification system is helpful to decide the treatment strategy according to the progression of ONB.

CS-11 PITUTARY EPENDYMOMA: A CASE REPORT
Tadateru Fukami1, Yayoi Yoshimura1, Ryoko Fujikawa, Kazuhiro Nozaki1
1Department of Neurosurgery, Shiga University of Medical Science

INTRODUCTION: Neoplasms of the sellar region generally includes pituitary adenoma, craniopharyngioma, meningioma. We report a case of pituitary ependymoma. CASE: A 39-years-old man. He experienced the sense of discomfort of the inside upper part field of vision of the left eye for a few months since May, 2018. Ophthalmologic examination showed right homonymous hemianopia of right upper 1/4. He was introduced to the department of neurosurgery of our hospital. MRI showed intrasellar tumor and the lesion was partially removed because of solidity by endoscopic transsphenoidal surgery on July, 2018. Pathological examination revealed Capicua (CIC) rearrangement on FISH, suggestive of recurrence. Two cycles of chemotherapy with vincristine, ifosfamide, doxorubicin, and etoposide as well as GammaKnife stereotactic radiosurgery were performed with partial response. Sustained myelosuppression and debilitating constitutional symptoms precipitated ad Ronel chemotherapy. No further recurrence was noted 1 year after diagnosis. CONCLUSION: We have recently experienced a case of CIC-rearranged intracranial sarcoma. FDG-PET was useful in detecting CIC rearrangement and reaching the correct pathological diagnosis. Rapid recurrence of the tumor was noted, but well controlled with radiochemotherapy.

CLINICAL OTHERS (COT)

COT-01 SYMPTOMATIC EPILEPSY INDUCED BY MALIGNANT BRAIN TUMOR
Hiromi Oyama1; 1Department of Neurosurgery, Toyohashi Municipal Hospital, Toyohashi, Japan

CASES: We report about 41 cases of malignant brain tumor which were treated with operation, irradiation, chemotherapy during past 62 months. 34 cases of glioblastoma, 2 cases of malignant glioma (WHO grade III), 2 cases of medulloblastoma, 1 case of germ cell tumor, 1 case of malignant astrocytoma, and 1 case of malignant ependymoma were included in 41 cases. Two cases of glioblastoma survived over than 25 years, but the median survival of dead 11 glioblastoma cases was 22 months, 4 cases were expired among another 7 cases. RESULTS: 6 cases showed mutation in ATRX and other cases had mutation of IDH-1 among 34 cases of glioblastoma. One case showed mutation in ATRX and IDH-1 among 2 cases of malignant glioma. But the mutation in ATRX and IDH-1 had no correlation with convulsion. The initial symptom was epilepsy in 3 cases of glioblastoma and another 3 cases of glioblastoma showed convulsive seizure thereafter. One case of glioblastoma showed rapid aggravation of symptom after convulsion. The initial symptom was epilepsy in 1 case of
malignant glioma. One case of malignant ependymoma and one case of medulloblastoma showed rapid aggravation of symptom after convulsion. **DISCUSSION:** Nine cases showed convulsion among our 41 cases. Convulsion happened as initial symptom in 4 cases but it happened during treatment in 5 cases. Three cases among these 5 cases showed rapid aggravation of symptom after convulsion. So pre- and post-operative anti-epileptic treatment seems to be necessary.

**COT-02**

**TREATMENT EXPERIENCE OF PAZOPANIB FOR A CASE OF VON-HIPPEL LINDAU DISEASE**

Nobuhide Hayashi,1 Yoshiuki Koyama,1 Eisaku Tsuji,2 Hideo Okada,1 Kazuaki Kunita,1 Department of Neurosurgery, Wakayama Rosai Hospital, Wakayama, Japan

**INTRODUCTION:** von Hippel-Lindau (VHL) disease is an autosomal dominant genetic disorder associated with neoplastic lesions in multiple organs. Here, we report our experience with a patient with VHL disease presenting with complications of renal tumors, wherein pancreatic cystic lesions and renal neoplastic lesions were reduced in size with the administration of pazopanib at our department. **PATIENT:** The patient was a 26-year-old man who presented with hiccups and was diagnosed with medullary hemangioblastoma with a cyst that was resected. The other central nervous system lesions were located in the right optic nerve sheath, cerebellar hemisphere, thoracic spinal cord, and multiple cutaneous type tumors in the pancreas, renal tumors, and epididymal tumors. Although the family history was unclear, the clinical diagnostic criteria for VHL disease were met, and mutations were found in the VHL gene analysis. Six months after the initiation of pazopanib therapy at a dose of 800 mg/day, there was no remarkable change in the hemangioblastoma on imaging; however, the pancreatic and renal lesions had shrunk. In addition, new lesions did not appear. Adverse events included diarrhea, graying of hair, and abdominal pain.

**DISCUSSION:** Pazopanib is a multi-targeted kinase inhibitor that inhibits angiogenesis and inhibits tumor growth. In VHL disease, pancreatic and renal tumors influence the survival prognosis, and for hemangioblastoma, the lesions increase in number and size and the corresponding surgery affects the functional prognosis. Although there was a poor tumor-reduction effect on the hemangioblastoma, there was a supposed inhibitory effect on the appearance of new lesions and the enlargement of the existing lesions. **CONCLUSION:** Pazopanib administration resulted in the shrinkage of or regression of pancreatic and renal lesions. In addition, it inhibited the increase in number and size of hemangioblastomas. Further, prolonging the surgical treatment interval may help maintain the patient’s quality of life.

**COT-03**

**EVALUATING FUNCTIONING AND DISABILITY OF A PATIENT WITH BRAIN TUMOR BY WHODAS**

Kohei Ishita1, Mitsuyo Ikeda1, Shin Yamada, Yasutomo Okajima, Kunitsu Saito, Kenichi Kobayashi, Yoshiki Shokawa, Motto Nagane;1 Division of Rehabilitation service, Kyorin University Hospital

**BACKGROUND:** The WHO Disability Assessment Schedule (WHODAS) is a practical assessment instrument which measures level of functioning in the following six domains of life. Here we report a case of brain tumor who was evaluated with the 36-item full version of WHODAS 2.0 (self-administered mode), and discuss usefulness of the WHODAS. **CASE PRESENTATION:** A 69-year-old man was referred to our hospital with cognitive problems because of which he needed assistance for his ADLs at home. He was diagnosed as having primary central nervous system lymphoma (PCNSL) following open brain biopsy, and was transferred to our hospital for chemotherapy at 23 days after the biopsy. He showed no sign of motor or sensory disturbance, but initial evaluation revealed that he had troubles in judgment in his ADLs mainly because of marked memory deficits. Motor, cognitive and total FIM score was 65/91, 22/35, and 87/126, respectively. He was then basically independent in ADLs at home. We conduct regular meetings, such as 30 minutes of medical lectures and 60 minutes of healthcare discussions, between participants and medical staff which is supervised by a nurse. To provide more effective family support, we repeated the same activities, METHE, and our total of 96 family members participated in 11 meetings from July 2015 to March 2019 and answered anonymous questionnaires about their participation. This survey evaluated their motivation for participation and the level of satisfaction toward the lectures and discussions by three-level scores and free description. **RESULT:** Regarding the reason of their participation, 28.1% of the participants answered, “I want to talk to someone who is in the same condition.” We found that 83.3% of them were satisfied with the lectures, and 89.6% of them were satisfied with the discussions and conversations. The reasons for their satisfaction were: “I was happy to hear the story of other patients” (19.0%), “I feel positive toward patient care” (19.0%), and “I realized I was not alone” (17.2%). Moreover, 92.7% answered “I would like to participate in the next meeting.” Among them, 26.1% answered “I want to talk again,” 14.2% answered “I feel stable,” and 14.2% answered “I can get information.” There were other opinions, like “Sharing feelings is important” and “I would like to help others next time,” as well. **DISCUSSION:** Malignant brain tumors are orphan diseases, and patients and their families lack the information about the disease and the chance to share their experiences. Hence, participants were quite satisfied with this meeting. We will improve our facilitating skills as an organizing body so that participants can share their experiences and feelings to reduce their loneliness and finally feel positive toward patient care.

**COT-04**

**FAMILY SUPPORT FOR PATIENTS WITH PRIMARY MALIGNANT BRAIN TUMORS BY PATIENT SUPPORT GROUP IN NATIONAL CANCER CENTER**

Mayu Hosokawa1, Tatuya Kishi1, Kazumi Iishi1, Ayako Mori1, Yoshitaka Naita1, Yasuji Miyakita1, Makoto Ohno1, Masamichi Takahashi1;1 National Cancer Center Tokyo, Tokyo, Japan

**BACKGROUND:** A family support group for patients with primary malignant brain tumors in our hospital is called “Brain Tumor Family Table.” We conduct regular meetings, such as 30 minutes of medical lectures and 60 minutes of healthcare discussions, between participants and medical staff which is supervised by a nurse. To provide more effective family support, we repeated the same activities, METHE, and our total of 96 family members participated in 11 meetings from July 2015 to March 2019 and answered anonymous questionnaires about their participation. This survey evaluated their motivation for participation and the level of satisfaction toward the lectures and discussions by three-level scores and free description. **RESULT:** Regarding the reason of their participation, 28.1% of the participants answered, “I want to talk to someone who is in the same condition.” We found that 83.3% of them were satisfied with the lectures, and 89.6% of them were satisfied with the discussions and conversations. The reasons for their satisfaction were: “I was happy to hear the story of other patients” (19.0%), “I feel positive toward patient care” (19.0%), and “I realized I was not alone” (17.2%). Moreover, 92.7% answered “I would like to participate in the next meeting.” Among them, 26.1% answered “I want to talk again,” 14.2% answered “I feel stable,” and 14.2% answered “I can get information.” There were other opinions, like “Sharing feelings is important” and “I would like to help others next time,” as well. **DISCUSSION:** Malignant brain tumors are orphan diseases, and patients and their families lack the information about the disease and the chance to share their experiences. Hence, participants were quite satisfied with this meeting. We will improve our facilitating skills as an organizing body so that participants can share their experiences and feelings to reduce their loneliness and finally feel positive toward patient care.

**COT-07**

**A CASE OF NEPALESE IN JAPAN SUSPECTED OF NEUROCYSTICERCOSIS**

Masataka Miki1, Ryo Matsuaki2, Chie Matsuura1, Sayaka Terazono1, Shumpei Ando1, Masashi Harada2, Hiroyuki Masuda1, Kosuke Kondo1, Naoyuki Harada1, Nobuo Sugo1;1 Department of Neurosurgery (Omori), School of Medicine, Faculty of Medicine, Toho University, Tokyo, Japan

**INTRODUCTION:** Cystosis is the most common parasitic disease of the central nervous system. Especially in developing countries, it is one of the differential diagnoses of diseases that cause seizures. We report a case of a foreigner suspected of having neurocysticercosis. **CASE:** A 36-year-old Nepalese visiting Japan for 2 years. Two days ago, she lost consciousness for a few seconds and was transferred to our hospital complaint of convulsion for about 1 minute. Head Computed Tomography (CT) revealed a mass lesion with a ring enhancement effect of about 10 mm in the right frontal lobe, with edema around it. Magnetic Resonance Imaging (MRI) shows T1WI low signal, T2WI high signal, and diffusion-weighted image shows very high signal. The ring-shaped enhancement effect was exhibited. Whole body CT showed no obvious lesions and blood tumor markers were negative. Various infections were negative, and cerebrospinal fluid cytology and culture were negative. **POSTOPERATIVE COURSE:** From the surgical findings, brain abscesses such as cerebral tuberculocoele were suspected, but various tests were negative. As a pathologic result, the tumor had a capsule, and the inside showed necrotic tissue and fibrous granulation tissue reaction. There were no insects, and no obvious cells were identified by special staining. From the origin area, symptoms, and pathological findings, neurocysticercosis was most suspected. **CONCLUSION:** We experienced a case of suspected neurocysticercosis that was difficult to diagnose from images and pathological findings. In neurocysticercosis, when the worm body is contrast-enhanced MRI shows a ring-like enhancement effect, and it is accompanied by surrounding edema, which may require differentiation from brain tumors.

**COT-06**

**HBV REACTIVATION DURING AND AFTER THE TREATMENT OF MALIGNANT GLIOMA WITH TEMOZOLOMIDE**

Masayuki Kanamar1, Ryuta Sat1, Hiroshi Ueno1, Tetsu Tomina1;1 Department of Neurosurgery, Tohoku University Graduate School of Medicine

**BACKGROUND:** It has been reported that temozolomide treatment for malignant glioma can lead to the reactivation of Hepatitis B virus (HBV)