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INTRODUCTION: Based on imaging features, glioblastoma (GBM) can be classified as solitary, multifocal or multicentric. The incidence of multicentric GBM has been reported to range from 0.5 to 35%. Some studies have reported poorer survival in patients with multiple lesions. Two potential reasons have been proposed: (1) intrinsic differences in tumour biology; (2) failure to encompass the entire tumour within the radiation planning tumour volume. To address this question we investigated clinical imaging and genetic features in a cohort of GBM patients.

METHODS: Imaging, clinical, treatment, MGMT methylation and outcome data were collected retrospectively for GBM patients treated in a single cancer centre between January 2011 and June 2012. Tumours were categorised as solitary, multifocal or multicentric by a consultant neuroradiologist.

RESULTS: 122 patients with GBM were identified. Median age was 60 and male/female ratio was 2.1:1. MGMT promoter status was unmethylated in 48% of tumours, methylated in 37% and unknown in 15%. Preoperative imaging modality was CT in 70% and MRI in 30% of patients. Overall, the proportion of patients with solitary, multifocal and multicentric tumours was 78%, 15.5% and 6.5% respectively; but in patients undergoing MRI imaging these proportions were 60%, 26.5% and 13.5%. Gross total resection was performed in 50% of solitary, 58% of multifocal and 12% of multicentric cases. Overall, median survival was increased in solitary compared with multifocal/multicentric tumours (18.5 vs. 16.8 months, p=0.57). MGMT promoter methylation was associated with increased survival in patients with solitary tumours (14.6 vs. 8.5 months, p=0.014) but not multifocal/multicentric tumours (3.8 vs. 6.9 months, p=0.5).

CONCLUSION: In this retrospective study the incidence of multifocal/multicentric GBM was in line with previous studies. Pre-operative CT imaging may underestimate the incidence of multifocal/multicentric disease. Our main finding was that multifocality or multicentricity did not affect survival in patients to whom radical chemoradiotherapy could be delivered.

P08.37 TUMOR ASSOCIATED M2 MACROPHAGE INFILTRATION IN Glioblastoma
Kobe University Graduate School of Medicine, Kobe, Japan.

INTRODUCTION: Anti-inflammatory phenotype (M2) macrophage is known to secrete various cytokines and promote tumor-growth. However, the role of M2 macrophage in glioblastoma is not clear yet.

METHODS: We evaluated the specimens resected from thirty-three patients with glioblastoma, who underwent surgery at Kobe University Hospital from November 2006 to December 2013. We investigated the infiltration of tumor-associated M2 macrophages by means of immunostaining for CD68 and which is M2 cell marker. Also, we examined the association between infiltration levels of M2 macrophages and prognosis by Log-rank test.

RESULTS: The mean infiltration rate of CD68+ M2 macrophages in all glioblastoma specimens was 4.1% (0.8–20.2%) or various Tumor specific therapy regimens (WHO I°, II°, III°, IV°). The infiltration levels of CD163-positive M2 macrophages (WHO II°, WHO III°, WHO IV°) correlate significantly with IL-6 levels in CSF. The infiltration levels of M2 macrophages correlated with IL-6 levels in CSF.

CONCLUSION: Our novel finding that replication stress is a hallmark of GSCs and that RS preferentially induces DNA DSB in long neural genes. Taken together, we implicate RS as a driver of enhanced DNR in GSCs and identify novel therapeutics with potential to improve clinical outcomes by overcoming the radioresistance of GBM.

P08.38 IRRADIATION OF SUBVENTRICULAR ZONE IN GLIOBLASTOMA: ITS IMPACT ON TUMOR PROGRESSION AND SURVIVAL
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Irradiation of Subventricular Zone in Glioblastoma: Its Impact on Tumor Progression and Survival

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