Metastatic glioblastoma cells use common pathways via blood and lymphatic vessels.


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Generally, gliomas do not metastasize. Therefore, larger series are not available to investigate the pathways of tumour spread. Here, we present the case of a young man with a glioblastoma multiforme WHO grade IV and distant metastases in several tissues. The glioblastoma multiforme WHO grade IV of a young male patient recurred within a very short time along the surgical resection pathway within the temporalis muscle. After removal of the tumour bulk, the patient developed a distant intracranial tumour lesion around the contralateral ventricular system and a pulmonary tumour. Later on, the patient underwent an operation on a facial lesion representing a local extracranial glioblastoma recurrence and containing metastases within lymph nodes and lymphatic vessels. Our case report indicated a lymphatic pathway of metastasis, which could be demonstrated by our histopathological analysis. We suggest that altered gene expression stimulated by glioblastoma-environment interaction altered the properties of glioblastoma cells, whether caused by a spontaneous genetic shift or induced by factors provided by the extracranial tissue.

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