

Image Report

Multilevel severe radiculopathy from an extraneural glioblastoma cervical metastasis

Daniele Starnoni, Yves Yamgoué, Andreas Hottinger¹, Viktor Bartanusz

Service de Neurochirurgie, Centre Hospitalier Universitaire Vaudois (CHUV) and University of Lausanne, ¹Department of Clinical Neurosciences and Department of Oncology, Centre Hospitalier Universitaire Vaudois, University of Lausanne, Lausanne, Switzerland

E-mail: *Daniele Starnoni - daniele.starnoni@chuv.ch; Yves Yamgoué - yamgoue.yves@gmail.com; Andreas Hottinger - andreas.hottinger@chuv.ch; Viktor Bartanusz - viktor.bartanusz@chuv.ch

*Corresponding author

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In march 2016, a 42-year-old man presented at our institution with complaints of insidious neck pain irradiating to the right shoulder and a progressive weakness of the right upper limb.

In 2012, the patient had undergone a total resection of an isolated occipital lesion histologically reported as glioblastoma multiforme (GBM), with wild-type IDH1 and O-6-methylguanine-DNA methyltransferase (MGMT) methylation. He had received concurrent adjuvant local radiotherapy (60 Gy) and chemotherapy (temozolomide). Because of local recurrence, two successive total resections were performed in May 2014 and July 2015 followed by chemotherapy (Temozolomide). In October 2015, a new local recurrence invading the superior sagittal sinus was diagnosed and treated with cyber Knife radiosurgery and concurrent introduction of Bevacizumab and rindopepimut, an investigational immunotherapy that targets the tumor specific oncogene EGFRvIII, followed by a rapid regression in size of the lesion.

At current admission, the neurological examination revealed a severe paresis of the proximal right upper limb associated with deltoid and biceps atrophy. Spine magnetic resonance imaging revealed a slightly enhanced tumor infiltration of the third and fourth vertebra extending into the prevertebral and epidural space through the right C5 and C6 foramina [Figure 1]. Whole-body computed tomography and fluorodeoxyglucose-positron emission tomography study showed multiple hypermetabolic pulmonary

nodules [Figure 2]. Needle biopsy confirmed the diagnosis of an extracranial metastasis from the cerebral GBM. Cyber-Knife fractionated radiosurgery of the C4 lesion was subsequently performed in March 2016 up to a total target volume dose of 45 Gy with a palliative intention, and additional chemotherapy with Bevacizumab and Etoposide was introduced.

DISCUSSION

GBM extraneural metastases occur in only approximately 0.2–0.4% of patients^[1] and their incidence correlate with previous neurosurgical intervention and long-term

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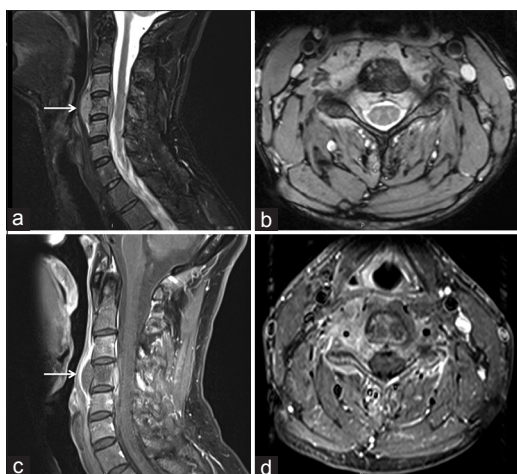


Figure 1: Sagittal (a) and axial (b) T2-weighted and sagittal (c) and axial (d) gadolinium-enhanced magnetic resonance imaging showing a T2 hyperintense vertebral tumor infiltration of the fourth cervical vertebra with invasion into the spinal canal through the intervertebral foramina with an hourglass feature. Larger tumor masses are found in the prevertebral space (arrow). The tumor showed a partially contrast enhancing (c and d)

survival.^[3] Twenty-eight cases of patients with vertebral body metastases are reported in literature;^[2] they tend to occur in younger patients (mean age of 38 years) experiencing longer overall survival. The average length survival from diagnosis of spinal metastases was of 10 months.^[2] Because this tendency is expected to increase long-term survival, survivors should be evaluated for extraneural metastases in their routine follow-up. This case reinforces the few reports presented in literature and highlights the importance of a high index of suspicion and a systemic radio-oncological follow-up in patients with glioblastoma.

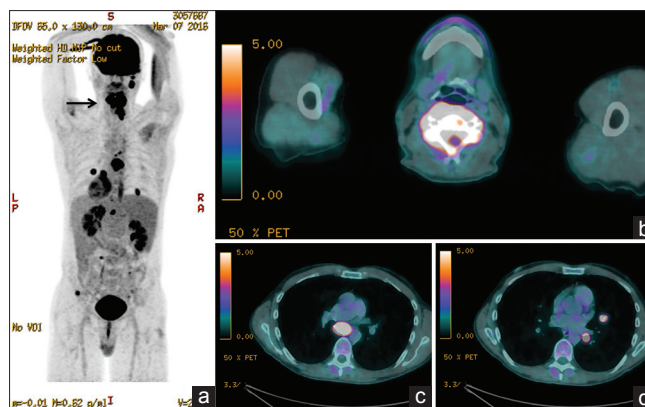


Figure 2: 18F fluorodeoxyglucose-positron emission tomography showing a highly hypermetabolic nature of the cervical vertebral mass (SUVbw maximum: 17.9 g/ml) (arrow in a and b) associated with a hypermetabolic infracardinal ganglion (SUVbw maximum: 14.3 g/ml) (c) and multiple hypermetabolic pulmonary nodules (SUVbw maximum: 15.6 g/ml) (d)

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Conflicts of interest

There are no conflicts of interest.

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