Multifocal Gliosarcoma
– a case report –

I. Paltineanu[1], D.I. Stiucan[1], L.C. Cojocaru[1], A. Bastian[2,3], R.D. Mihailescu[1], B.O. Popescu[1,4]

1. Neurology Department, Colentina Clinical Hospital, Bucharest, Romania
2. Pathology Department, Colentina Clinical Hospital, Bucharest, Romania
3. Pathology Department, "Carol Davila" University of Medicine and Pharmacy , Bucharest, Romania
4. Neurology Department , "Carol Davila" University of Medicine and Pharmacy , Bucharest, Romania

BACKGROUND

Gliosarcoma is a high-grade malignant tumor of the central nervous system, in which the vasculature and fibroblasts undergo a sarcomatous transformation, giving the tumor a mixed appearance. The incidence of gliosarcoma is between 1% and 8% of all malignant gliomas and thus represents an exceptionally rare neoplasm. It usually occurs in adults, mainly between the fifth and seventh decade, with male predominance (ca. 1.4:1). The most common localization is the cerebrum, involving the temporal, parietal, frontal and occipital lobes, in decreasing order of frequency. We present an extremely rare case of multifocal gliosarcoma. Multifocal display has been described in malignant gliomas, but not in gliosarcomas.

CASE REPORT

62 years old woman

↓ *Chronic viral hepatitis (B and C)*
Total hysterectomy and adnexectomy (37 years before)

Acute confusional state
Amnestic impairment

→ *Brain CT*

• Left temporal ring engancing lesion (deep intraparenchymal);
• Two other left parietal hyperdense, iodophilic lesions.

CEREBRAL METASTASIS

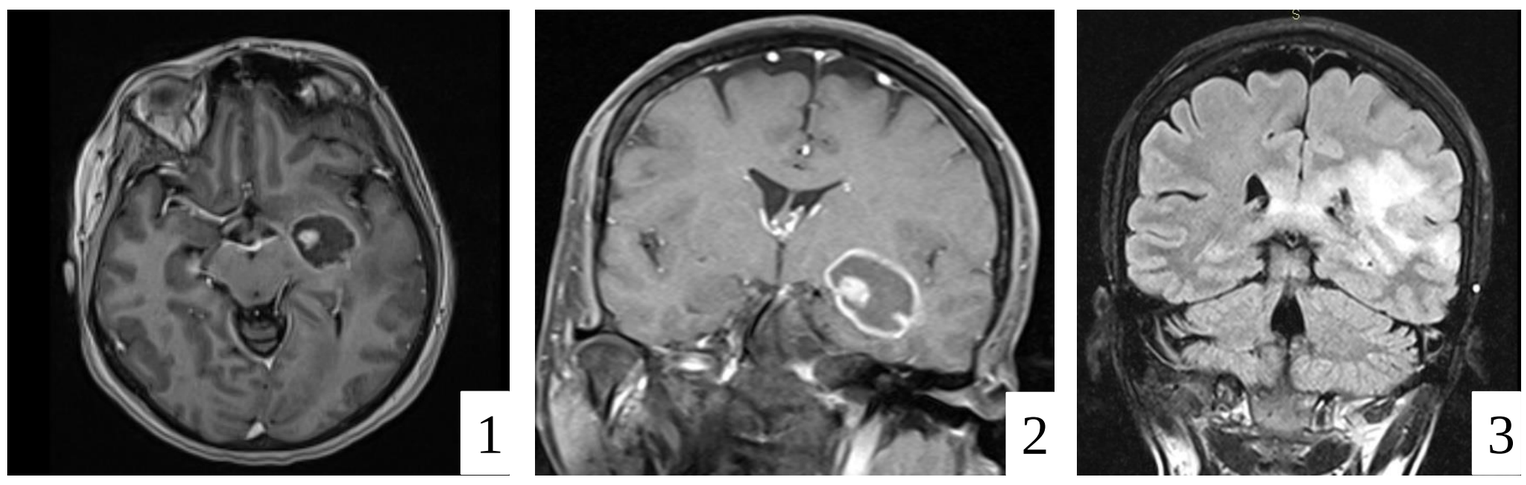
→ *Thoracic, Abdominal, Pelvic CT*

No other primary or secondary tumors

↓ ***3 weeks later***

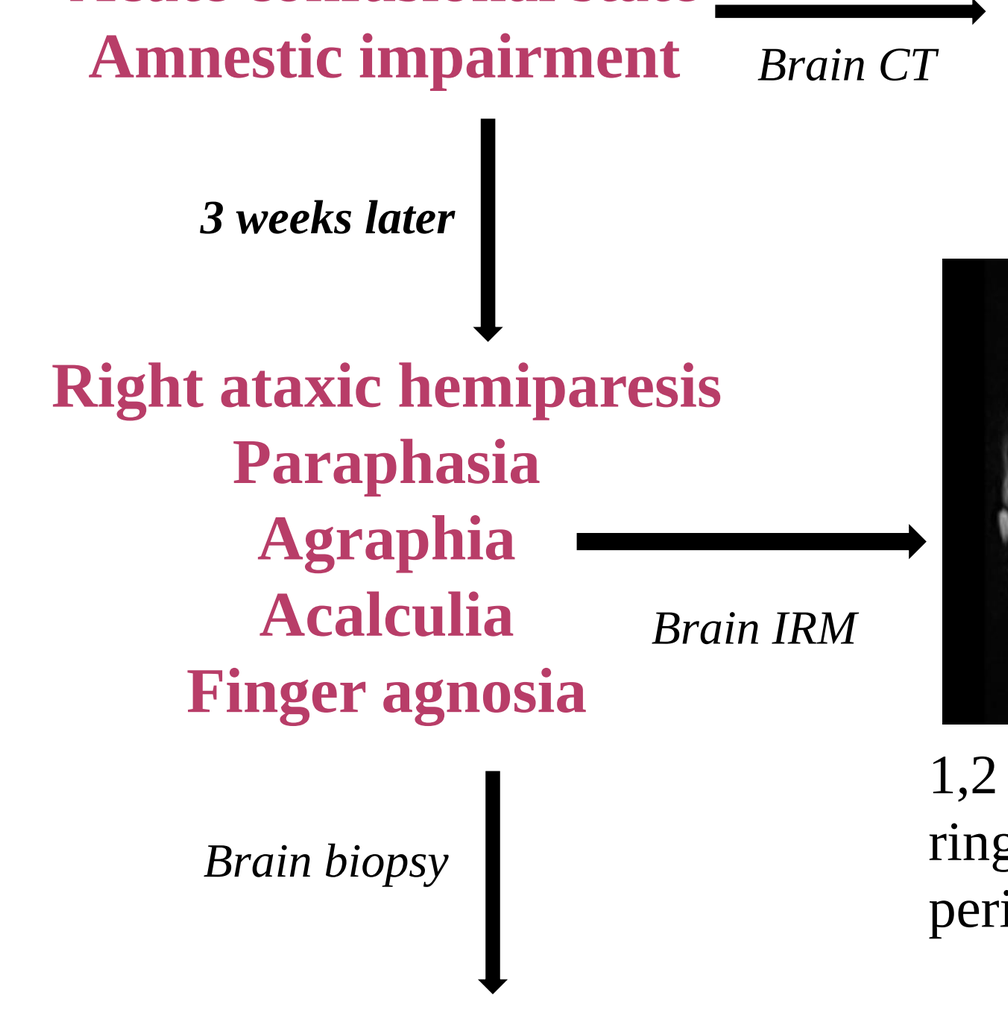
Right ataxic hemiparesis
Paraphasia
Agraphia
Acalculia
Finger agnosia

→ *Brain IRM*



1,2 - Hyperintense deep intraparenchymal left temporal lesion with ring enhancement and mural gadolinophilic nodule, 3 - Important perilesional edema (1- T1 axial; 2 - T1 coronal; 3 – FLAIR coronal)

↓ *Brain biopsy*



4,5,6 - High grade astrocytic tumor with alternating glial and mesenchymal areas: epithelioid and spindle cells with pleomorphic round or oval nuclei, in a fibrillary stroma; necrosis and high mitotic rate, 7 - Strong GFAP immunostaining in the epithelioid component, while the spindle cells are GFAP-negative (4,5,6 - HE x 40; 7 - Immunohistochemistry for GFAP x 200)

Differential diagnosis

Cerebral ring enhancing lesions
metastasis, abscess, glioblastoma, infarct in subacute phase, contusion, demyelinating disease, radiation necrosis, resolving hematoma

Cerebral cyst with mural nodule tumor
hemangioblastoma, pilocytic astrocytoma, ganglioglioma, pleomorphic xanthoastrocytoma, cystic etastasis, intracerebral schwannoma

Multifocal cerebral lesions
metastasis, abscess

CONCLUSION

According to literature data, multifocal gliosarcoma is considered to be one of the most rare tumors. However, a certain diagnosis can be established by using the right diagnostic algorithm, especially including brain biopsy.