

# Rapid growth of primary cerebral fibrosarcoma with conversion to glioblastoma at second recurrence

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**Abstract** We present a case of de novo fibrosarcoma in a 43-year-old male, with MRI documented evolution from a 5 mm hyperintense area to 5 cm tumor mass in a 12-month period. The diagnosis of low-grade fibrosarcoma was established by three experienced neuropathologists. The patient underwent gross total resection with adjuvant fractionated conformal radiotherapy. Following first recurrence 3 months later, the patient was reoperated and stereotactic radiosurgery of a residual tumor was performed thereafter. The pathological diagnosis was similar, but with additional extensive radiation effects. Six months later the patient underwent aggressive surgical resection for second recurrence. The pathological diagnosis was WHO grade IV glioblastoma. The etiology of this highly unusual progression from primary mesenchymal neoplasm to high-grade glioma is discussed.

**Keywords** Gliomatous differentiation · Gliosarcoma · Primary cerebral fibrosarcoma · Rapid growth

## Abbreviations

CT Computerized tomography  
FLAIR Fluid attenuated inversion recovery

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MRI Magnetic resonance imaging  
IDL Isodose line  
Gy Gray

## Introduction

Primary parenchymal fibrosarcomas are extremely rare tumors of the brain, with reported incidence of 0.2–0.7% [1]. Parenchymal and meningeal fibrosarcoma account for 1.5% for all intracranial neoplasms [2, 3]. They are characterized by very aggressive clinical behavior with early local recurrence despite oncologic treatment at the current best standard of care [3, 4]. This clinical aggressiveness is evident in a number of reports documenting a short latency period before tumor growth [5, 6], however these are cases of tumor recurrence following surgery and radiotherapy for treatment of a primary fibrosarcoma or other intracranial tumor.

We present here a case of de novo primary cerebral fibrosarcoma that is unique due to its very unusual cellular dedifferentiation to glioblastoma at the second recurrence. Also of interest is the documented relatively rapid growth of fibrosarcoma from an early stage to a full blown clinical picture during 12 months, demonstrating a possible natural history not previously reported.

## Case report

A 43-year-old man presented in our department in December 2006 with history of headache and dysphasia of a few weeks duration. Prior history of primary brain tumor in other family members was negative. Clinical examination