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Case Study
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# Frontal Giant Cell Glioblastoma Tumor Radio Induced a Rare Case and Review of Literature

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## Abstract

Glioblastoma giant cell is a variant of glioblastoma and is associated to a better prognosis. Radio-Induced glioblastoma which meets CAHAN, criteria for radio-induced tumor, is very rare. We report case observed in a 42 years old male who received radiotherapy at the age of 20 years for nasopharyngeal tumor.

## Introduction

Radiation therapy has been widely applied for cancer treatment. Radiation, since its first application for cancers in 1889, has been a relatively well tolerated and simple, yet powerful means of tumor management. Brain tumors are not exclusive ever since the development of high energy generators such as linac and cobalt-60 unit. Although the radiation is not deleterious immediately, it may induce serious side effects such as radiation-induced necrosis, radiation-related arteriopathy or tumorigenesis apart from the beneficial effects on primary target neoplasm. Post-radiation tumor, such as fibrosarcoma of the Central Nervous System (CNS) was first reported by Mann et al. [1] and the role of radiation on tumorigenesis of the brain was documented for the first time by Modan et al. [2]

## Case Presentation

We report a case observed in a 42 years old male who received radiotherapy at the age of 20 years for nasopharyngeal tumor (Figure 1 and 2). He consults for left hemiparesis revealing edematogene right frontal process. The patient underwent a maximalist surgery. The outcome was uneventful. The diagnosis of giant cell glioblastoma was confirmed by histopathological examination (Figure 3).

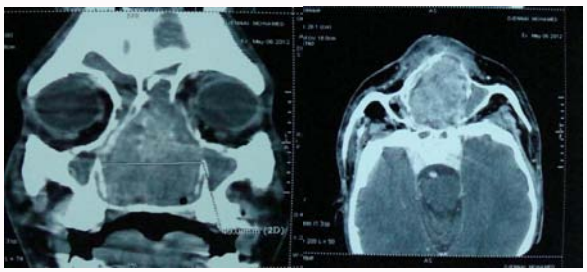

**Figure 1:** Cerebral CT. Scan showed: Nasopharyngeal tumor.

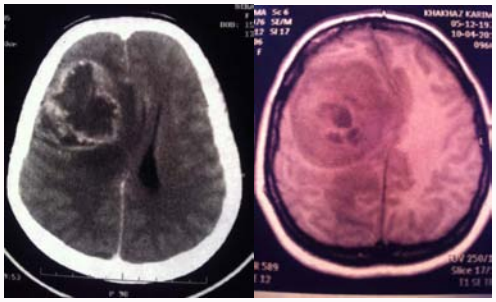

**Figure 2:** Cerebral CT. Scan and MRI showed: radiation-induced glioblastoma after 20 years microscopic apparence of a giant cell glioblastoma.

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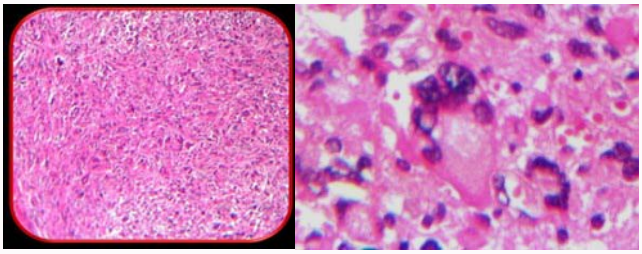

**Figure 3:** Microscopic appearance of a giant cell glioblastoma.

## Discussion

We describe this case firstly because of its rare histological variety and discuss its clinical, radiological, histopathological, therapeutic and prognostic characteristics with literature data [3,4]. Secondly, because of its occurrence 20 years after external radiotherapy, which could suggest the hypothesis of radio-induced glioblastoma?

## Conclusion

Irradiation of cells results in an increased rate of mutagenesis, which inevitably leads to the occurrence of mutations in critical regions of the genome, which can lead to cancer. Furthermore, it seems that irradiation of the cells carrying mutations may contribute to the occurrence of a second tumor in the field of irradiation. It must therefore be vigilant in monitoring children treated for cancer when there is a first in their family with early cancers. About clinical, para-clinical and therapeutic view, radiation-induced brain tumors are comparable to the "spontaneous" tumors.

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