ECRONICON OPEN ACCESS

EC NEUROLOGY
Case Report

When Good Intentions Go Awry: A Case Study of Radionecrosis Detected by MRI

Hajar Zebbakh, Yassine Zerhari*, Hatim Essaber, Asaad El Bakkari, Soukaina Allioui, Hounayda Jerguigue, Youssef Omor and Rachid Latib

Radiology Department of National Institute of Oncology of Rabat, Morocco

***Corresponding Author:** Yassine Zerhari, Radiology Department of National Institute of Oncology of Rabat, Morocco.

Received: April 18, 2023; **Published:** April 27, 2023

Abstract

Radionecrosis is a known complication of radiotherapy that can lead to tissue destruction and scarring. MRI is an effective imaging modality for detecting and characterizing radionecrosis. We present the case of a 35-year-old male patient who developed radionecrosis in the right temporal lobe following radiotherapy for an UNCT cavuma. The MRI findings are described, and the diagnosis and treatment of radionecrosis are discussed.

Keywords: *Radionecrosis; MRI; Radiotherapy; UNCT Cavuma*

Introduction

Radionecrosis is a known complication of radiotherapy that can lead to tissue destruction and scarring. MRI is an effective imaging modality for detecting and characterizing radionecrosis.

Case Presentation

A 35-year-old male patient underwent radiotherapy for an UNCT cavuma. In a follow-up MRI to monitor the progress of the treatment, a lesion in the right temporal lobe was find. It has an hypointense signal in T1-weighted image, and hyperintense signal in T2-weighted image with surrounding oedema (Figure A and B). Diffusion-weighted imaging revealed no restricted diffusion on high B values (Figure C). Contrast-enhanced T1-weighted images showed an annular enhancement of the lesion (Figure D). These MRI features and based on the clinical history of the patient, the diagnosis of radionecrosis was retained. The patient was managed with supportive care, corticosteroids, and hyperbaric oxygen therapy.

Discussion

Radionecrosis occurs due to the death of cells in the irradiated area, leading to tissue destruction and scarring [1]. The MRI features of radionecrosis may vary depending on the time of onset, extent, and severity of the disease. The diagnosis of radionecrosis can be challenging, as it may mimic tumor recurrence. The differential diagnosis of radionecrosis includes tumor recurrence, radiation-induced changes, and infection. In this case, the MRI findings were consistent with radionecrosis, and the diagnosis was confirmed based on the patient's clinical history.

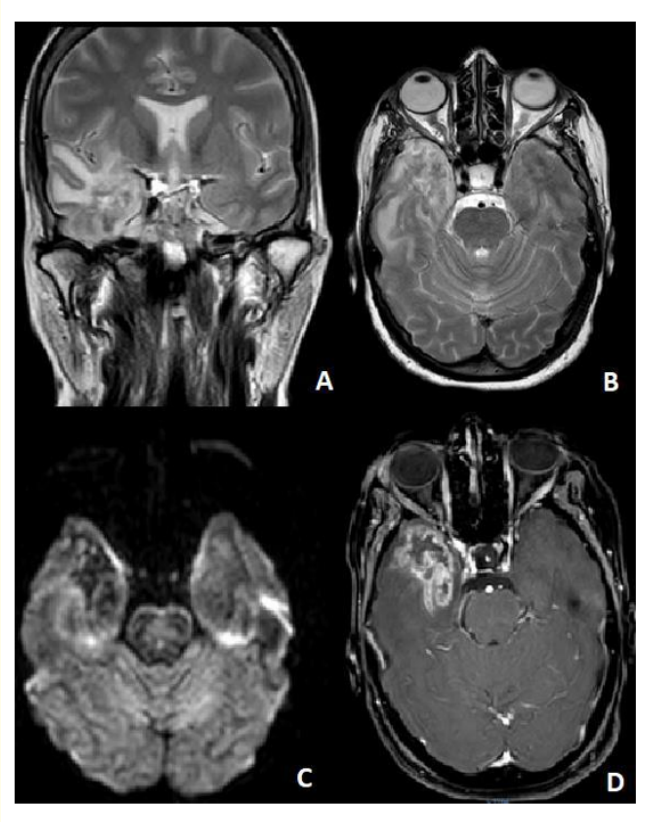

Figure A-D: *MRI in T2-WI in coronal section (A), axial section (B), axial Diffusion WI (C) and T1-WI after gadolinium administration (D), showed a cortico sous cortical lesion of the right temporal lobe with high T2 signal with surrounding oedema (A, B), which presents no restriction of diffusion (C) and heterogenous peripheric enhancement (D).*

Several studies have described the MRI features of radionecrosis, including hypointensity on T1-weighted images, hyperintensity on T2-weighted images, restricted diffusion on diffusion-weighted imaging in some cases, and decreased blood flow and perfusion on perfusion-weighted imaging [2].

Treatment options for radionecrosis include supportive care, corticosteroids, hyperbaric oxygen therapy, and surgical intervention in some cases [3]. The choice of treatment depends on the severity and extent of the disease, as well as the patient's overall health and preferences.

Conclusion

MRI is an effective imaging modality for detecting and characterizing radionecrosis. In this case, the MRI findings were consistent with radionecrosis, and the patient was managed with supportive care, corticosteroids, and hyperbaric oxygen therapy. The diagnosis and treatment of radionecrosis can be challenging, and careful evaluation is necessary to differentiate it from tumor recurrence.

Funding Information

No funding was given.

Conflict of Interest

All authors declare no conflict of interest relevant to this article.

Bibliography

1. Na A., *et al*. "Cerebral radiation necrosis". *Asia-Pacific Journal of Clinical Oncology* 10.1 (2014): 11-21.
2. Kumar AJ., *et al*. "Malignant gliomas: MR imaging spectrum of radiation therapy- and chemotherapy-induced necrosis of the brain after treatment". *Radiology* 217 (2000): 377-384.
3. Hsu YC., *et al*. "Cerebral radionecrosis in patients with nasopharyngeal carcinoma". *The Kaohsiung Journal of Medical Sciences* 21 (2005): 452-459.

Volume 15 Issue 5 May 2023