

LETTER TO THE EDITOR

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Epistaxis revealing a ruptured post-radiation aneurysm of the internal carotid artery: case report

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To the editor

Epistaxis is a frequent reason for consultation in medical emergencies. Its etiologies are multiple [1]. It can be due to both systemic and local factors. Local causes encompass neoplasm, inflammatory, traumatic, anatomical, chemical, or climatic changes. In patients treated for nasopharyngeal cancer, the reappearance of epistaxis after the end of treatment indicates recurrence. In this observation, we report a rare and fatal complication of external radiotherapy.

Case report

A 69-year-old female patient followed in our department with undifferentiated carcinoma of the nasopharyngeal type of the cavum, classified as T4N2M0 with orbital and endocranial extension. The patient had neoadjuvant chemotherapy followed by radiation therapy; she received 74 Gy in 35 fractions over 7 weeks. She was referred to our emergency 9 months after radiotherapy with recurrent right epistaxis of great abundance. A CT angiography of the facial bone showed an image of vascular ectasia of the intrapetrous portion of the right internal carotid artery with leakage of contrast product from the right posterolateral wall of the cavum (Fig. 1). Following bilateral posterior meshing, the patient was admitted to the recovery room with hemodynamic monitoring

and received a transfusion of packed red blood cells. Unfortunately, the course of recovery was disrupted by the sudden occurrence of severe nosebleeds (fulminant epistaxis), ultimately leading to the patient's demise.

Discussion

Radiotherapy is a part of the course of treatment for over 60% of patients with cancer, which has led to increased survival in those patients. However, radiation therapy is not trivial, it affects both tumor cells and uninvolved normal cells [1, 2]. Post-radiation aneurysm is a rare entity with a high mortality rate. Numerous studies have investigated this association since the first report of intracranial aneurysms following radiotherapy in 1963. However, most of these studies have been limited to case studies. This makes it difficult to determine the exact incidence rate. Its pathogenesis is still poorly understood. The aneurysm may have been associated with radiotherapy because of several features. Firstly, its location was in line with the radiation field. Secondly, the imaging done before the cranial radiotherapy did not show the presence of an aneurysm. It is most often discovered during hemorrhagic complications [1, 2].

Acute arterial rupture is a separate entity from the chronic, indolent, occlusive, and fibrotic disease process that is seen years after the first dose of radiation. This entity is seen early in the course of radiation therapy (weeks to months rather than years), is commonly associated with recurrent tumor, significant wound infection or salivary fistula, and is rarely seen in patients who receive radiation therapy alone [2]. Angio-CT scan is described to be the best diagnostic tool, allowing differential diagnosis and visualization of false and true lumen, entry tear

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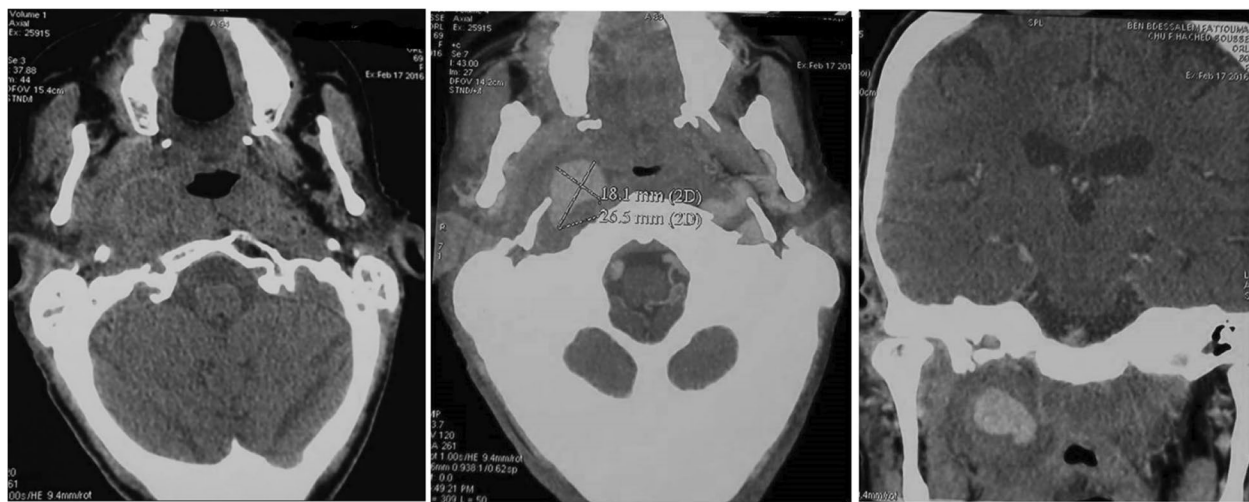


Fig. 1 Angio-scan of the facial bone: Image of vascular ectasia of the infra-petrous portion of the right internal carotid artery

of the dissection, associated vascular disease, and possible signs of ischemic bowel or parenchymal infarction, although magnetic resonance angiography and Doppler ultrasound are used more frequently during follow-up monitoring [1].

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Authors' contributions

JH, MG: data analysis and interpretation and final approval of the version to be published. SJ, MB: Analysis and interpretation of the data and drafting of the article. MA: critical revision of the article.

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Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

The patient's son provided written informed consent for the publication of this case report and accompanying images. A copy of the consent form is accessible for review by the Editor-in-Chief of this journal upon request.

Competing interests

The authors declare that they have no competing interests.

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