






Headache in Brain Tumors

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Section snippets

Key points

- Headache is a cardinal symptom of brain tumors....
- Clinical presentation of headache in brain tumors varies across cases....
- Diverse mechanisms are involved in the pathogenesis of headache in brain tumors....
- If findings are suggestive of a brain tumor, a comprehensive evaluation including neuroimaging should be conducted....

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Overview

The 1-year prevalence of brain tumors in individuals with undifferentiated headache without known malignancy is 0.15%. The prevalence of brain tumors in individuals with headache fulfilling criteria of primary

headache disorder is even lower (0.05%).³ In contrast, headache is reported in 48% to 71% of patients with brain tumors.^{4, 5, 6, 7, 8}

The prevalence of headache differs according to the location and type of brain tumor, history of headache, and age of the patient. The prevalence of...

Overview of Presentation and Course

The classical manifestation of brain tumors has been described as severe, early morning, or nocturnal headache usually accompanying nausea or vomiting, which is aggravated during Valsalva maneuver.¹⁷ Nevertheless, various clinical features of headache have been reported in patients with brain tumors.^{5, 6, 7, 8}

In brain tumors, headache is mostly intermittent and progressive. In a previous study, headache was a pressing/tightening quality in 60.2% and pulsating quality in 33.7% of patients.⁸...

Mechanisms

The mechanisms involved in the pathogenesis of headache in brain tumors are as follows:^{17,25}

- Local and distant traction on pain-sensitive structures...
- Mass effect caused by enlarging tumor mass and cerebral edema...
- Infarction...
- Hemorrhage...
- Venous thrombosis...
- Hydrocephalus...
- Tumor secretion...

Pain structures are veins draining into the large venous sinuses, middle meningeal arteries, major arteries at the skull base, cranial nerves with afferent pain fibers from the head, and intracranial and extracranial arteries....

Diagnostic approach toward headache in patients with cancer

Diagnosis of headache attributed to space-occupying intracranial neoplasms is based on the International Classification of Headache Disorders, 3rd edition (ICHD-3; code 7.4.1; Box 1). ICHD-3 also recommends the diagnostic criteria for headache attributed directly to neoplasm (code 7.4.2), headache attributed to carcinomatous meningitis (code 7.4.3), and headache attributed to hypothalamic or pituitary hyper- or hyposecretion (code 7.4.4). For headache attributed to colloid cyst of the third...

Management

Considering that headaches observed in brain tumors are mostly secondary headaches, the optimized treatment of brain tumors can lead to effective management of headaches in most patients. The treatments of primary and secondary brain tumors are beyond the scope of this review. In general, the management of headache in patients with brain tumors depends on tumor type and location, associated symptoms, functional status of the patient, and disease progression.^{17,22} However, life expectancy is...

Summary

Headache in patients with brain tumors can have many presentations. When a new headache or alteration in headache occurs in patients with a known malignancy, a high level of suspicion is warranted. If brain tumors are suspected, a comprehensive evaluation should be conducted using appropriate methods such as brain imaging and CSF study. To avoid patient anxiety and unnecessary evaluations, it is important to acknowledge that the treatment of brain tumors may cause headaches. Given that the life ...

Clinics care points

- Clinical presentation of headache in patients with brain tumor varies according to age; tumor location, type, and progression; intracranial pressure; headache history; and treatment....
- If new headache or change in headache occurs in patients with known malignancy, brain tumor should be highly suspected....
- Considering many patients with brain tumors and headache have limited life expectancy, prompt management of headache should be performed to improve their quality of life....

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First page preview



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- Headache is a cardinal symptom of brain tumors.
- Clinical presentation of headache in brain tumors varies across cases.
- Diverse mechanisms are involved in the pathogenesis of headache in brain tumors.
- If findings are suggestive of a brain tumor, a comprehensive evaluation including neuroimaging should be conducted.

INTRODUCTION

Headache is a common condition in the general population. According to epidemiologic studies, 50% to 60% of individuals in the general population experience headaches annually.¹ Although most headaches are caused by primary headache disorders, some of them develop owing to serious causes and may result in death or severe disability.² Headache is a cardinal symptom of brain tumors, and brain tumors are important causes of secondary headache disorders, which can be life-threatening. Nevertheless, early detection and accurate diagnosis can be challenging because of the low prevalence of brain tumors and its various clinical manifestations.

In this review, the epidemiologic details, clinical manifestations, mechanisms, diagnostic approaches, and management of headaches in patients with brain tumors are discussed. In addition, the authors describe rare syndromes presenting as headache and treatment-related headache in patients with brain tumors.

EPIDEMIOLOGY**Overview**

The 1-year prevalence of brain tumors in individuals with undifferentiated headache without known malignancy is 0.15%. The prevalence of brain tumors in individuals with headache fulfilling criteria of primary headache disorder is even lower (0.05%).³ In contrast, headache is reported in 48% to 71% of patients with brain tumors.⁴⁻⁸

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