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Co-occurrence of meningioma and schwannoma in a young patient without predisposing factors: A clinical image

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Abstract

Meningiomas and schwannomas, which are usually benign, present a diagnostic challenge when they cooccur in young patients without known risk factors. Here, we report the case of a 30-year-old male diagnosed with concurrent intracranial tumors requiring craniotomy, targeted radiation therapy, and rehabilitation, underscoring the complexity of customized management approaches given the paucity of information on the causes and best practices for treating such complicated cases.

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Case description

A previously healthy man in his early 30's presented with six-month worsening migraines, visual disturbances, and non-pulsatile tinnitus, along with occasional tingling in his left hand and forearm. He had no history of seizures, trauma, or radiation exposure. Initial tests revealed no abnormalities. Neurological symptoms prompted a brain Magnetic Resonance Imaging (MRI) scan, revealing a 15x15x12 mm, intensely enhanced lesion in the right cerebellum that appeared isointense on T1, T2, and Fluid Attenuated Inversion Recovery (FLAIR) sequences, indicating meningioma (Figure 1). Additionally, bilateral lesions were identified within the internal auditory meatus, showing isointensity on T1 and iso- to hyperintensity on T2 and FLAIR sequences, extending into the cerebello-pontine cisterns, consistent with acoustic schwannomas (Figure 2). The presence of both meningioma and schwannomas was substantiated by these results, necessitating the patient's craniotomy for surgical removal of the tumor. Subsequent treatment included targeted radiation therapy and rehabilitation aiding in recovery of the patient.

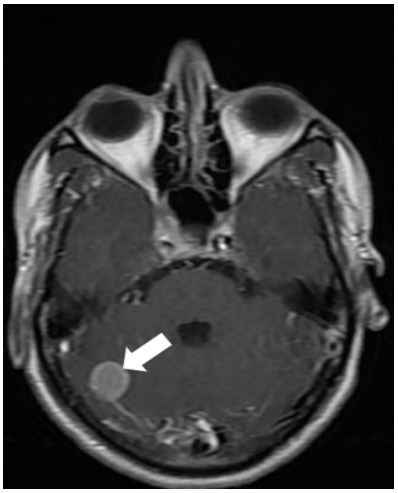

Figure 1: Axial T1-weighted Magnetic Resonance Imaging (MRI) scan demonstrating a meningioma in the right cerebellum (arrow).

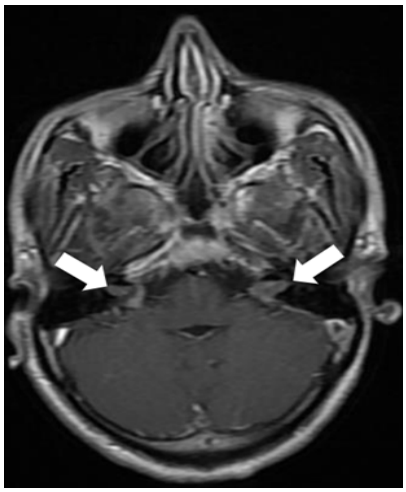

Figure 2: Axial T1-weighted Magnetic Resonance Imaging (MRI) scan image demonstrating bilateral acoustic schwannomas (arrows) within the internal auditory canals extending into the cerebello-pontine cisterns.

Discussion

Meningiomas and schwannomas are subtypes of primary intracranial and spinal tumors that are generally noncancerous in nature and have an unknown etiology. The co-occurrence of these conditions is particularly rare, especially in the absence of predisposing factors such as Neurofibromatosis (NF) or a prior history of radiation exposure [1-3]. The limited availability of documented evidence pertaining to these cases underscores substantial knowledge deficits concerning their origin [3].

Managing such concurrent malignancies necessitates personalized strategies, considering the extent, location, and clinical presentation of the tumor. Although there is no universally applicable treatment protocol, conventional approaches such as targeted radiation therapy and surgical resection are frequently utilized, as this case demonstrates. Nevertheless, ongoing research is needed to clarify the mechanisms that contribute to their concurrent appearance and interconnected patterns of growth and to devise more efficient prognostic and management approaches [1].

Declarations

Author contributions: All authors contributed to the patient's medical care, the study's idea and design, as well as the drafting, proofreading, and approval of the completed paper.

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Conflict of interest: None mentioned.

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