

Olfactory Groove Schwannoma: A Case Report

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We would like to report a case of a 71-year-old woman who presented to the neurosurgery clinic due to an incidentally discovered olfactory groove schwannoma. Magnetic resonance image of the brain was obtained (→Fig. 1A–C). Due to the

patient's advanced age and the benign imaging features of the lesion, monitoring was decided upon. However, growth of the lesion was noted on follow-up and gross total resection was done (→Fig. 1D). Histopathology revealed schwannoma

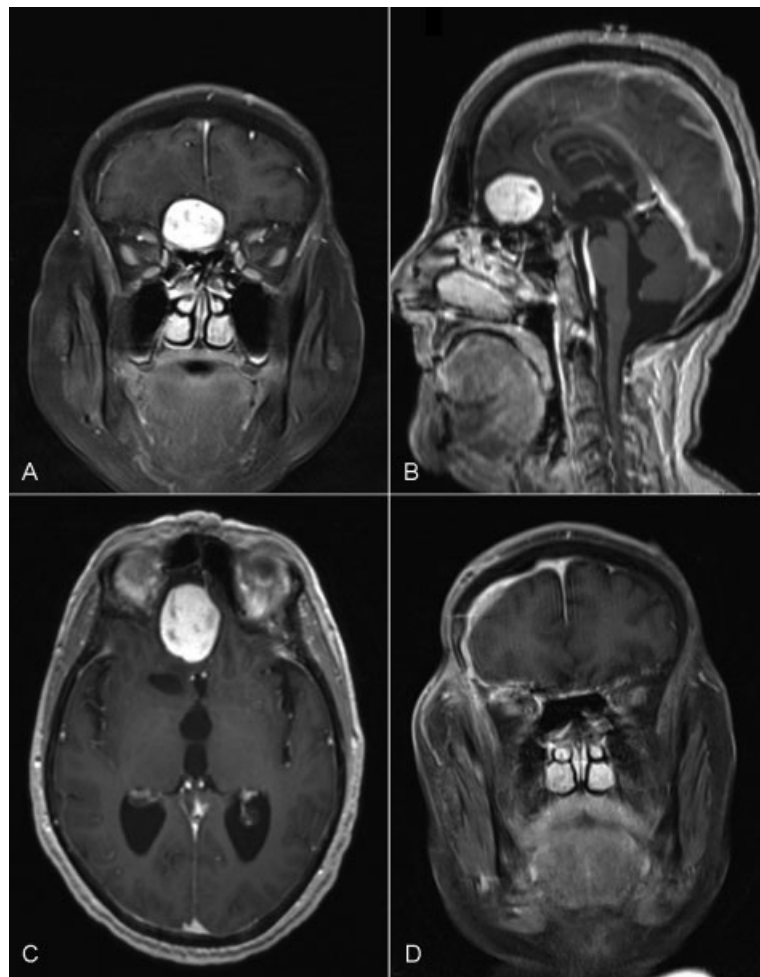


Fig. 1 Coronal (A), sagittal (B), and axial (C) T1-weighted, gadolinium-enhanced, brain MR image demonstrating a well-circumscribed, homogeneously enhancing, extra-axial, anterior cranial fossa lesion eroding the ethmoid bone. Coronal (D) T1-weighted, gadolinium-enhanced, brain MR image showing gross total resection of the tumor.

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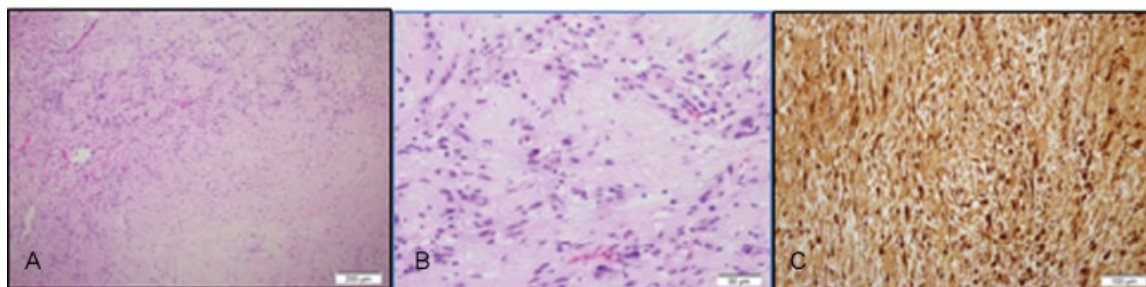


Fig. 2 Histopathologic examination revealed paucicellular and more cellular regions (A) composed of spindle cells, without marked nuclear atypia or increased mitotic activity, with ill-formed nuclear palisading (B), diffusely immune-positive for S-100 (C).

(→**Fig. 2**). At the 1-year follow-up, the patient had right-sided anosmia.

Olfactory groove schwannomas are rare, extra-axial, benign tumors. In contrast to other intracranial schwannomas, they frequently affect young males.^{1,2} Moreover, since the olfactory bulb is devoid of Schwann cells,^{1,3} their pathogenesis is unclear with several theories proposed: The developmental theories suggest mesenchymal pial cell transformation into Schwann cell or aberrant neural crest cell migration.^{1,2,4} The nondevelopmental theory suggests origin from Schwann cells present in adjacent structures.^{1,2,4} Finally, reactive Schwann cell formation from multipotential mesenchymal cells has also been proposed.¹

Histopathologic findings pathognomonic for schwannoma include densely packed elongated cells with palisading nuclei (Antoni A pattern) alternating with less cellular regions (Antoni B pattern).³ On immunohistochemistry, schwannomas stain was positive for S-100³ and CD-57 (Leu-7)^{2,4} and negative for smooth muscle α -actin.⁴ Management should be individualized, and includes observation, surgical resection, and radiosurgery.³

In conclusion, the pathogenesis of olfactory groove schwannomas remains unclear. They should be included in the differential diagnosis of anterior cranial fossa neoplasms.

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Conflict of Interest

None.

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