ECTOPIC SECONDARY PARANASAL SINUS MENINGIOMA WITH ORBITAL EXTENSION

TATIANA ROSCA MD, PHD\(^1\), NIKOLAOS MARAGKOS MD\(^2\), TEODORA VLADESCU MD, PHD\(^1\), GHERGHEȘCU GH. MD, PHD\(^1\)

\(^1\)Neuro-Surgery Department, Clinical Emergency Sf. Pantelimon Hospital, Bucharest, Romania
\(^2\)Anaesthesiology Department, "Agios Panteleimonas" General Hospital, Pireas Greece

The author responsible for manuscript preparation: Tatiana Rosca, 59 Gala Galacton Street, 011305 Bucharest, Romania, tel/fax: +40-21-6663751, E-mail: rosca_tatiana@yahoo.com

**Background.** Description of a meningioma arising from the paranasal sinuses (bilateral frontal and ethmoidal sinus origin).

**Material and method.** A 54-year-old patient with meningioma originating in bilateral frontal and ethmoidal sinus and invading the right orbit.

**Results.** The management of the case is presented.

**Conclusion.** Meningiomas originating in the paranasal sinuses are very rare. They are ectopic and there are only a few cases reported in literature.

**Keywords:** ectopic meningioma, proptosis, paranasal sinus

**INTRODUCTION**

Meningiomas account for 3 to 9% of all orbital tumors and are certainly not considered rare. [1] Primary orbital meningiomas represent between 0.4 to 2% of all intracranial meningiomas [1]. Secondary orbital meningiomas are considerably more common than their primary counterparts. The ectopic orbital meningiomas were first mentioned in the 80’s. [8,10].

**BACKGROUND**

A 54-year-old man presented with an 11-month history of progressive protrusion and infradisplacement of the right eye and a 3-month history of horizontal diplopia (Fig. 1).

**MATERIAL AND METHOD**

On examination, the patient's visual acuity was 20/20 OU, with normal visual fields and normal ocular fundi. Extraocular movements were full, but the patient had 5 mm of right proptosis and infradisplacement of the right globe.

CT scan revealed opacification of the right anterior ethmoid sinuses and both frontal sinuses (Figs. 2a-c). There was no evidence of any intracranial mass (2a-d). MRI revealed that the frontal sinus mass had destroyed the roof of the right orbit and was extending into the orbit, pushing the right eye downward (Fig. 3)

The patient underwent a right superior anterior orbitotomy with resection of the mass from both the orbit and the sinuses. (Fig. 4). On histopathologic examination, the mass was found to be a meningioma that appeared to be arising from the paranasal sinus mucosa (Figs. 5a-c).

**RESULTS**

Postoperatively, the patient's proptosis and diplopia resolved (Fig. 6), and CT scanning showed no significant residual tumor in either the orbit or paranasal sinuses. (Fig. 7)
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FIG. 1 Patient before surgery

FIG. 2A CT scan revealed opacification of the right anterior ethmoid sinus
FIG. 2B CT-scan revealed opacification of both frontal sinuses
FIG. 2C CT-scan revealed opacification of orbital region
FIG. 2D CT-scan revealed no evidence of any intracranial mass

FIG. 3 MRI revealed that the frontal sinus mass had destroyed the roof of the right orbit and was extending into the orbit

FIG. 4 Surgery piece

FIG. 5A
FIG. 5B
FIG. 5C
FIG. 5a Paranasal sinus tumor infiltration (Obx10 H&E)
FIG. 5b Spindle-shaped cells disposed in a whirlpool pattern (Obx10 H&E)
FIG. 5c HE ob x 20 Celule meningoteliale în tesutul conjunctiv al mucoasei sinusale

FIG. 6 Patient after surgery
CONCLUSION

Our case affected both the ethmoid and frontal sinus with orbital involvement, requiring a combined approach by an ophthalmologist and neurosurgeon.

DISCUSSION

A meningioma outside the central nervous system (CNS) is considered to be ectopic [1]. Ectopic meningiomas are differentiated by their connection to the CNS (primary) or without a CNS connection (secondary) [2]. Meningiomas are benign tumors arising from the arachnoid cells that form the arachnoid villi and are generally seen in association with the dural sinuses. [3]

Meningiomas originating in the paranasal sinuses are very rare. These tumors are thought to arise from embryonal arachnoid nests that were pinched off and left behind during embryonic development. Only a few such cases have ever been described. In 2000, Thompson and Gyure published 30 cases of sinonasal tract meningiomas diagnosed between 1970 and 1992 that had been retrieved from the files of the Otorhinolaryngic Registry of the Armed Forces Institute of Pathology. The location of these lesions included the nasal cavity (n = 14), the nasopharynx (n = 3), the frontal sinus (n = 2), the sphenoid sinus (n = 2), or a combination of the nasal cavity and ethmoid, frontal, sphenoid, and/or maxillary sinuses (n = 9). All these cases had been reported and treated by otolaryngologists [4-10].

REFERENCES

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