Diaphragma sellae meningioma

Despite their unique clinical, radiological, and surgical considerations, diaphragma sellae meningiomas remain largely undistinguished from tuberculum sellae meningiomas.

Although tuberculum sellae (TS) and diaphragma sellae (DS) meningiomas have different anatomical origins, they are frequently discussed as a single entity.

It is important to differentiate the rare Diaphragma sellae meningioma from the quite common hormonally inactive pituitary neuroendocrine tumor, especially with regards to the surgical approach. The differentiation could, however, be problematic.

A 66-year-old woman with a Diaphragma sellae meningioma, which became apparent through a visual field and visual acuity disorder. Successful radical tumor extirpation was achieved via the transsphenoidal approach, since the space-occupying lesion was initially thought to be a hormonally inactive pituitary macroadenoma. However, histological investigation confirmed a meningioma. A careful retrospective analysis of the MRI revealed the possibility of a meningioma having been overlooked, since not all distinguishing features of this lesion were manifested [1].

Classification

On the basis of the experience with 12 patients with diaphragma sellae meningiomas and the review of the literature, Kinjo et al. classify these tumors into three groups:

Type A, originating from the upper leaf of the diaphragma sellae anterior to the pituitary stalk

Type B, originating from the upper leaf of the diaphragma sellae posterior to the pituitary stalk

Type C, originating from the inferior leaf of the diaphragma sellae. Each type has specific clinical symptoms.

Type A mainly presents with unilateral visual disturbances and visual field defects resembling those of tuberculum sellae meningiomas, although preoperative diabetes insipidus occurred in patients with large tumors.

Type B causes fewer visual disturbances, but memory disturbance and hypopituitarism occur.

Type C closely resembles nonfunctioning pituitary neuroendocrine tumors; bitemporal hemianopsia and hypopituitarism are common. Multiplanar magnetic resonance images can accurately diagnose the tumor and establish its type.

Surgical approaches include the cranio-orbital approach for Types A and B and the transcranial-transsphenoidal approach for Type C.

Surgery is more difficult than for tuberculum sellae meningiomas because of the deep location and the difficulty of dissecting Types A and B from the pituitary stalk. Repair of the sphenoid sinus to prevent cerebrospinal fluid leakage is mandatory for Type C tumors. [2]

1)
Pinzer T, Krishnan KG, Schackert G. The diaphragma sellae meningioma – a rare differential diagnosis

of Non-Functioning Pituitary Neuroendocrine Tumor. Zentralbl Neurochir. 2004 Nov;65(4):195-7. PubMed PMID: 15551185.

2)

Kinjo T, al-Mefty O, Ciric I. Diaphragma sellae meningiomas. Neurosurgery.1995 Jun;36(6):1082-92. Review. PubMed PMID: 7643985.