Pineal region tumor differential diagnosis

Over the age of 40 is more likely to be a meningioma or a glioma.

Tumors in this region are more common in children (3–8% of pediatric brain tumors) than in adults (≤1%). [1)]

Over 17 tumor types occur in this region [2)].

Pineal germinoma is the most common tumor (21– 44% in American/European population, 43–70% in Japan), followed by pineal astrocytoma, pineal teratoma and pineoblastoma [3)].

The complexity of lesions in the pineal region, goes far beyond the pineal parenchyma proper. Originating in the pineal gland, there are not only benign cysts but also numerous different tumour types. In addition, lesions such as tectal gliomas, tentorial meningiomas and choroid plexus papillomas arise from the surrounding structures, occupying that regions. Furthermore, the area has an affinity for metastatic lesions.

Vascular lesions complete the spectrum mainly as small tectal arteriovenous malformations or cavernous haemangiomas.Taken together, there is a wide spectrum of lesions, many unique to that region, which call for a multidisciplinary approach.

Pineal region tumors (PRTs) are a heterogeneous group of tumors that can be assigned to four main categories:

Germ cell tumors are relatively frequent and often secreting lesions (see Pineal germinoma).

Pineal parenchymal tumors (PPTs)

Glial cell tumors

Other miscellaneous tumors and cysts.

see Pineal region meningioma.

see Pineal region tumor in children.

Pineal parenchymal tumors include:

Pineocytomas

Pineal parenchymal tumor of intermediate differentiation

Pineoblastoma

Papillary tumor of the pineal region.

Other lesions including astrocytomas and meningiomas as well as congenital malformations i.e. benign cysts, lipomas, pineal epidermoid cyst and dermoid cysts, which can also arise from the pineal region.

1)

Regis J, Bouillot P, Rouby-Volot F, et al. Pineal Region Tumors and the Role of Stereotactic Biopsy: Review of the Mortality, Morbidity, and Diagnostic Rates in 370 Cases. Neurosurgery. 1996; 39:907–914
2)

Youssef AS, Keller JT, van Loveren HR. Novel applica- tion of computer-assisted cisternal endoscopy for the biopsy of pineal region tumors: cadaveric study. Acta Neurochir (Wien). 2007; 149:399–406
3)

Oi S, Matsumoto S. Controversy pertaining to thera- peutic modalities for tumors of the pineal region: a worldwide survey of di erent patient populations. Childs Nerv Syst. 1992; 8:332–336