Intraventricular oligodendroglioma (IVO)

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Oligodendrogliomas usually arise in the cerebral hemispheres, less frequently they are found in the cerebellar hemispheres and very rarely they adopt an intraventricular location.

Epidemiology

Intraventricular oligodendroglioma remains a rare diagnosis, with high-grade/anaplastic IVO being an even rarer subtype.

Types

These lesions vary in regard to tumor grading and clinical presentation, as compared with their intraparenchymal counterparts.

see Anaplastic intraventricular oligodendroglioma.

Clinical Features

They occur in the younger age, an interval between clinical onset and diagnosis or operation is shorter, and initial symptoms are most often limited to those of increased intracranial pressure, although the patient may occasionally present mild organic dementia, callosal disconnection syndrome, and/or mild gait ataxia [1].

Diagnosis

Analysis of the clinical and CT characteristics of 11 cases in the literature and eight new examples revealed specific radiographic features, which included the presence of an anterior, midline mass within the lateral ventricles composed of clumped calcifications within a dense, enhancing matrix.

Hydrocephalus is a constant feature, and these tumors present with signs of increased intracranial pressure. Eighteen of the 19 cases were benign and all were pure oligodendrogliomas, without admixture of other cellular elements.

Intraventricular oligodendrogliomas can be distinguished from other intraventricular lesions by fairly specific CT characteristics. [2]. [3].

Angiography showed slightly increased vascularity in the mass, and displacement of subependymal veins near the tumor [4].

Magnetic resonance imaging proved to be most useful as a radiologic diagnostic procedure [5)]

Outcome

Intraventricular oligodendrogliomas grow slowly and are associated with prolonged survival but, due to their location, are difficult to remove and frequently require shunting. Subsequently developing symptoms, including herniation and death, are more frequently associated with complications related to hydrocephalus than with tumor growth.

The ability to recognize them is helpful in prognosis, and awareness of associated complications related to hydrocephalus may assist in the long-term survival of affected patients [6)].

Differential diagnosis

Oligodendrogliomas of the lateral ventricle are rare but should be included in the differential diagnosis of intraventricular tumors near the foramen of Monro [7)].

The possibility of central neurocytoma should be considered in all young patients including children presenting with an intraventricular lesion. Definitive diagnosis requires electron microscopic and immunohistochemical studies [8)].

Case reports

1979

Two cases of primary intraventricular oligodendrogliomas which were successfully removed by a transventricular approach using microtechniques are presented [9)].

1985

Two cases of primary intraventricular oligodendrogliomas are presented. Total excisions of well-demarcated large tumors in the lateral ventricle were successfully performed in young women by means of a frontal transventricular approach. An evaluation by computed tomography and positron emission tomography was attempted to obtain definite diagnosis of not only the location of the tumor but also the histologic grade of malignancy [10)].

1986

Ng et al. report two cases [11)].

Martinez-Lage et al. report a case of a ventricular oligodendroglioma associated with a cortical

arteriovenous malformation. The patient presented with subarachnoid hemorrhage. Computed tomographic scan showed an intraventricular hyperdense lesion, mimicking a hematoma. Angiography revealed a superficial arteriovenous malformation in the right parietal lobe, unrelated to ventricular cavities. Both lesions were treated during the same operation [12].

1987

Two cases of oligodendroglioma primarily involving the lateral ventricle are reported in female patients, aged 29 and 19, respectively, with sole complaints of an increased intracranial pressure.

The tumor was radically removed via a parafalcine transcallosal approach without causing any persistent neurological deficits [13].

1992

A 39-year-old woman harbouring a primary oligodendroglioma of the left lateral ventricle was treated by subtotal removal of the tumour through a left frontal transcortical transventricular approach. The clinical, radiological and surgical details of the case are presented in correlation with the current data on oligodendrogliomas. Benefits of postoperative irradiation are stressed [14].

1996

Romero et al. describe two cases of intraventricular oligodendroglioma.

Case No. 1: 18-year old woman with a clinical history of headache, vertigo and dizziness of 6 months duration. Central Nervous System imaging revealed a right lateral ventricle tumor.

Case No. 2: 38 year old man with a chief complaint of positional headache and visual impairment. C.N.S. imaging showed a third ventricular lesion [15].

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