Third ventricular tumor case series

A total of nine cases of third ventricle tumors were included in the study, including six women and three men, with an average age of 37.8 years (4-84 years old) and a follow-up time of 6-44 months. These nine tumor cases included two pilocytic astrocytomas, one diffuse midline glioma (H3 K27-altered), two craniopharyngiomas, two choroid plexus (CP) papillomas, one germinoma, and one pineal parenchymal tumor of intermediate differentiation. Total resection was completed in eight cases, with one near-total resection. There were no complications related to the surgical approach, such as epilepsy, aphasia, or hemiplegia.

Conclusions: The endoscope transcortical expanded transforaminal transvenous transchoroidal approach using an endoport can safely and effectively remove third ventricle lesions. This approach can reach a wide area, from the anterior to the posterior third ventricle [1)].

2016

A paper reviews the outcomes of 29 children treated for pineal region tumor and posterior third ventricle tumors in the contemporary era using chemotherapy, radiotherapy, and resection as defined by the histology and/or marker profile of the tumor.

At the time of diagnosis, all patients except 1 had hydrocephalus and all had ophthalmological involvement. Papilledema was found in 69% of patients. Seventy-five percent of patients had partial or complete Parinaud's syndrome, and diplopia or blurred vision was noted in the remaining patients. Visual acuity was impaired in 8 patients. Outcomes were dependent on the histology of the tumor and the treatment required. Those patients who did not requiring resection showed a lower rate of ophthalmological worsening during treatment and greater long-term improvement, in particular with respect to up-gaze palsy. Patients who underwent resection for postchemotherapy residual disease or primary resection showed greater worsening during treatment and lesser degrees of recovery. All patients with impaired visual acuity improved with treatment.

As the mortality of germ cell and other pineal tumors decreases, posttreatment morbidity remains, specifically that related to convergence nystagmus, accommodation, and diplopia. In addition to survival, ophthalmological morbidity should be reported in studies concerning the outcomes of treatment for pineal neoplasms [2)].

2000

The data from 262 cases of third ventricle (V3) tumors treated in 21 Departments of Neurosurgery in France between 1980 and 1995 were collected in this series. These tumors were frequent in young adults, and 17.5% of the patients were children. Colloid cysts (55%) and gliomas (19%) were the most frequent lesions. Other tumors were rare, or exceptional. CLINICAL PRESENTATION: The duration of symptoms was short in time, despite these lesions were usually benign. Most of cases were revealed by intracranial hypertension (63%), sometimes with a paroxystic or positional evolution. Neuropsychological signs (48 %) were undoubtedly under-estimated, revealing the disease in only 10% of cases. Ophthalmologic signs and endocrine disorders were infrequent. This feature is related to the selection of patients in this series, as tumors arising from the floor of the third ventricle or from the optic chiasm were excluded. Endocrine disorders were frequent with gliomas (30 %).

THERAPEUTIC MANAGEMENT: In half of the patients, hydrocephalus was absent or mild and was ruled out after the treatment of the ventricular lesion. However, 12% of patients required a shunt procedure after the treatment of the ventricular lesion. A stereotactic procedure was performed in 63 patients, 12 had ventriculoscopy, and a direct surgical approach to the V3 was performed in 200 patients, sometimes after the failure of stereotactic or endoscopic procedures. Thirty six patients received no treatment. The patients were operated on via a transcortical approach (159 cases), or via the anterior transcallosal route (35 patients). Postoperative course was uneventful in 67% of the patients, complications were recorded in 24% of patients. MORTALITY AND MORBIDITY: The overall mortality in the national series is 13.7 % (36/262 died). The death occurred before any treatment (4 patients), or was directly correlated to the surgical procedure (13 cases), to long-term complications of hydrocephalus (2 patients), to general complications (7 patients), or to recurrence of the tumor (10 cases). The final outcome analysis recorded neurological impairment in 29% of cases, neuropsychological deficit in 50% of patients, and residual endocrine disorders in 19%. Social independence was recovered by 86% of patients, 76% of them returned to work, 72% of students returned to normal school attendance. The long-term neurological outcome was better with the transcallosal approach. No conclusion was possible concerning neuropsychological outcome, as postoperative neuropsychological assessment was not available for most of the patients operated on with the transcortical approach. PROGNOSIS: The results of treatment were evaluated only for the most frequent lesions (colloid cysts and gliomas). The outcome was worse for gliomas when compared to colloid cysts, considering mortality (13% vs 8%), neurological impairment (36% vs 21%), residual endocrine disorders (34% vs 0%), and ability to return to work (83% vs 56%) [3].

1989

Tumors in the III ventricle were totally removed in three children using a route through the lamina terminalis. The cases are discussed on the basis of computed tomography and intraoperative findings. It seems that tumors 4 x 2 cm in size can be successfully removed via this relatively small opening if the neuroradiological findings and the probable histology (craniopharyngioma) provide secure evidence that the tumor site and growth matrix are located in the frontal and lower portion of the III ventricle. Besides the advantage of requiring no transparenchymal access, this quick axial (orthograde) approach exerts no pressure on the hypothalamus, a complication which cannot always be avoided with the transcallosal route or the route through the foramen of Monro. Furthermore, the immediate location of the tumor behind the usually protruding lamina terminalis permits a rapid operation without exploratory characteristics. The distance between the brain surface and the tumor with this procedure is 0 cm; however, it can be up to 9 cm, depending on the age of the patient, with other approaches [4].

Dandy (1933) reported 16 tumours within the third ventricle. Most of these were classified as of glial origin, although a few cysts were included [5].

Bailey, Buchanan, and Bucy (1939), under the classification of optic chiasm gliomas, reported 10 tumours all of which were astrocytomas [6].

The experience of others writing on this subject is similar [7]

(French, 1948; Odom, Davies, and Woodhall, 1956; Ford, 1966; Pecker et al., 1966; Lakke, 1969). It is, therefore, apparent that most tumours intrinsic to the third ventricle are astrocytomas, usually of low

grade and arising from the diencephalon, hypothalamus, or optic chiasm. A small proportion of tumours in this region are ependymal cysts or colloid cysts (Buchsbaum and Colton, 1967).

1)
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