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Gliomas of the brain among Nigerians

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Summary

At the UCH in Ibadan, Nigeria, we have seen forty-three patients with verified neoplasms of the brain comprising most histologic types of the glioma/paraglioma series. The astrogliomas formed the largest group, followed by the pinealomas in 16·27% and the medulloblastomas and ependymomas, each occurring in 13·95% of the patients. By the end of the third decade of life 83·7% of these neoplasms have become clinically manifest; the largest number being found in the first decade. Just over half (51·16%) of all the neoplasms and also two-thirds of the patients in whom the masses were found in the posterior fossa were children under 15 years. In nearly all cases the duration of symptomatology on admission to hospital was under 6 months. Headaches, papilloedema and altered states of consciousness were frequent; and the prognosis in general has been poor. The classical glioblastoma multiforme and the acoustic neurinoma are quite uncommon in the Nigerian African; but a fairly full spectrum of the 'gliomas' has been clearly identified in the group of primary brain tumours at Ibadan.

Résumé

A l'UCH d'Ibadan (Nigeria), nous avons vu 43 malades atteints de néoplasme cérébral avéré, comprenant la plupart des types histologiques de la série gliome/paragliome. Les astrogliomes formaient le groupe le plus important, suivi par les pinéalomes (16,27%) et les médulloblastomes et épendydomes (13,95% chacun). Vers l'age de 30 ans, 83,7% de ces néoplasmes étaient devenus cliniquement évidents, le plus grand nombre étant trouvés avant 10 ans. Un peu plus de la moitié (51,16%) de tous les néoplasmes et les deux-tiers des malades chez lesquels les masses étaient localisées dans la fosse postérieure étaient des enfants de moins de 15 ans. Dans presque tous les cas, la duré de la symptomatilogie après hospitalisation était de moins de 6 mois. Les maux de tête, l'oedème papillaire et les troubles de la conscience étaient fréquents et le pronostic généralement défavorable. Le gliobastome multiforme classique et le neurinome acoustique sont très peu fréquents chez l'Africain nigérian, mais un éventail assez large de 'gliomes' a été clairement identifié dans ce groupe de tumeurs cérébrales primaires à Ibadan.

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Introduction

In describing the 20 years of experience at the Madras Institute of Neurology, Ramamurthi (1970) listed 1249 intracranial masses, including 280 tuberculomas. Among these the 'gliomas' or neuroepithelial neoplasms (gliomas, medulloblastomas, ependymomas, neurinomas, pineal gland tumours) made up a total of 493 masses, of which only eighty-one (16·43%) were found in children below the age of 14. In the forty-three cases of 'gliomas' of the brain from Ibadan described below, 51·16% were of children under 15 years.

The general clinical picture

There were twenty-nine males among the forty-three patients. Within the first two decades of life 65·1% had had the onset of the clinical manifestation of their tumour. By the end of the third decade 83·7% of all cases were known.

In thirty-nine cases the duration of symptoms at the time of admission to hospital was under 6 months. Headaches, papilloedema, and other signs of intracranial hypertension were frequent and were severe

in cases of masses in the posterior fossa (medulloblastomas and cerebellar astrocytomas). Convulsion was prominent in a few cases. One patient with pronounced catatonic schizophrenia picture and numerous small lymphocytes in the cerebrospinal fluid was suspected of having an intracranial tuberculous lesion. A huge pinealoma (pineocytoma) was found. None of the patients with large pineal gland tumours showed Parinaud's syndrome.

Plain skull radiographs were of non-specific aid in twenty-nine cases, revealing raised intracranial pressure. Specific information such as the presence of a cerebello-pontine angle mass or an optic nerve tumour was obtained in five others.

Following preliminary echoencephalographic and electroencephalographic clearance, the carotid-vertebral angiographic study gave the most useful diagnostic aid in nearly all cases. Air/myodil ventriculographic clarification of the mass was needed, particularly in defining the pineal, cerebellar and other masses involving the ventricular system.

In the forty-three cases, twenty-one masses were located mainly above and twenty-two below the tentorium cerebelli. If the three neuroepithelial cysts classified under the miscellaneous group in our records are included there will be a total of twenty-four lesions above the tentorium. There is, therefore, an essentially even distribution of the 'glioma' cases above and below the tentorium. In twenty-four cases the ages of the patients were 15 years or below. In nine of these the lesions were located above the tentorium. Thus fifteen of the total of twenty-two infratentorial masses were in children. Figure 1 presents the pattern of the forty-three neuroepithelial neoplasms in their histologic variety. The three 'miscellaneous' group cysts may be added to the ependymomas, as in essence they may well be regarded as ependymal cysts.

Among the twenty-four child cases were five cerebellar medulloblastomas, three ependymomas (including two subependymal astrocytomas/subependymomas), three each of cerebellar astrogliomas, pontine astrogliomas, thalamic gliomas, pinealomas (including a large congenital teratoma in a male neonate) and two cerebral gliomas. Two retinoblastomas have been included in this series primarily because of their significant intracranial prominence. One of these initially presented as a suprasellar mass without referable signs in the involved eye until subsequently.

In the adult, accounting for the remainder of the

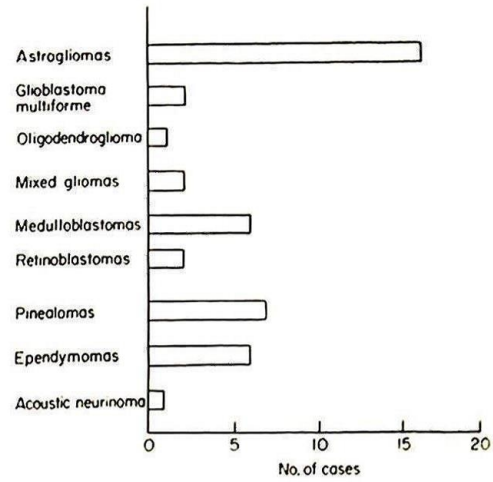

FIG. 1. Type distribution of forty-three neuroepithelial brain neoplasms, UCH, Ibadan.

tumours illustrated in the figure, it is noted that only two cases of classical glioblastoma were found in the Nigerian African. One was atypical and was found in the cerebellum of an 18-year-old boy who had had headaches for a year. The other was in a 36-year-old male engineer with a 2 month history of hemicrania and a clinical pattern suggestive of a cerebrovascular accident (haemorrhage). Craniotomy and necropsy revealed very extensive temporal lobe glioblastoma multiforme. There remains only one previously described case of bilateral acoustic neurinomas on our records.

The astrogliomas constitute 37·2% of the forty-three neuroepithelial neoplasms and the medulloblastoma and the ependymoma 13·95% each, with the pineal tumours slightly higher at 16·27%. In their relative frequencies in the general pattern at Ibadan, of the total 186 masses (Odeku *et al.*, 1973) for the astrogliomas and the pineal tumours respectively they constitute 8·60% and 3·75%, while each group of the medulloblastomas and the ependymomas account for 3·22%.

Comment

In the 1970 Ibadan series of brain tumours (Odeku *et al.*, 1970) the glioma-paraglioma primary neoplasms (grouped together as 'gliomas') form about 29% of all the 134 intracranial masses. In the 1972 series of 186 cases (Odeku *et al.*, 1973) the 'gliomas',

with four additional cases, have decreased moderately in proportion to about 23%. In both Ibadan series it should be noted that three neuroepithelial cysts (of the septum pellucidum and the third ventricle) were classified for convenience under the category of miscellaneous tumours. When these three were grouped together with the forty-three glioma-paraglioma neoplasms to be considered below they all constituted 24·7% of the intracranial masses and accounted for 39·3% of the 117 primary neoplasms and 27·2% of all the 169 neoplasms in the series. The frequency of 27·2% falls far below the Cushing's (1932) reference figure of 42·6%.

In reference to the large Western series (Zülch, 1957) the medulloblastoma and the ependymoma at 3·22% of all intracranial masses at the UCH Ibadan are less frequent in the African than in the Caucasian (4·0% and 4·6% respectively). The astrogliomas, even combined with the two glioblastomas, will constitute less than 10% of the total 186 UCH tumours; a much lower frequency than the combined 20·4% recorded by Zülch. At 3·75% the pineal tumours occur more often in the African at Ibadan, there being only 0·4% in Zülch's series.

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