

BRAIN METASTASIS OF UNKNOWN ORIGIN

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ABSTRACT

From 1973 to 1984, 119 patients presented to the Department of Neurosurgery, Royal Victoria Hospital, Belfast, with brain metastases, the primary sites of which remained unknown in 33 cases one month after discharge. About half of these cases were solitary and neurological localising signs were the commonest presentation. Of those cases in which surgery was performed, the majority remained improved one month after surgery. The one month mortality rate was only 3%. This study shows that with aggressive and appropriate treatment including surgical excision or decompression in solitary cases, an improved quality of life in the immediate post-operative period can be achieved in this particular group of brain metastases. A small number of patients remained alive and well after 6 months.

Keywords: Brain neoplasms, cerebellar neoplasms, cerebellar metastasis, outcome, surgical removal.

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INTRODUCTION

Of all brain neoplasms, 15 to 25% are brain metastases(1). Although most of these metastatic brain tumours were known to have a primary site such as the lungs and breast, there remained a number of cases in which a thorough search failed to identify the primary site (2, 3). Hence the author undertook to study this subgroup of brain metastasis of unknown origin presented to the Department of Neurosurgery, Royal Victoria Hospital, Belfast over a 12-year period.

PATIENTS AND METHODS

A retrospective review of the case records of all patients with intracranial metastases diagnosed and treated in the Northern Ireland Regional Neurosurgical Centre at the Royal Victoria Hospital, Belfast between 1973 and 1984 was carried out. Altogether there were 119 patients with intracranial metastases. A search for the primary site of tumour was made in each case during hospital stay. These included detailed history taking, thorough physical examination, routine chest radiographs, urine and blood investigations with additional special biochemical, radioisotope or further X-rays if warranted. Despite these investigations, the primary site of 33 cases remained unknown one month after discharge. This subgroup formed the basis of the study.

Computerised tomography (CT) was not available in Belfast before 1979. However from 1980, CT became the most important diagnostic tool.

A patient was said to be deteriorated if the original presenting features worsened or new symptoms and signs developed. Improvement would mean improvement in the presenting clinical features with the absence of development of new symptoms or signs. Usually no fol-

low-up of more than a month was given for patients because they were referred back to the referring physicians or surgeons, although long term follow-up was possible in a proportion of patients.

RESULTS

There were 20 male and 13 female patients giving rise to a male to female ratio of 5:3. The age incidence of these patients are summarised in Table I. The peak age group at the time of presentation was the seventh decade.

The presenting clinical features, locations of the metastasis, types of treatment, histology and outcome of treatment of the brain metastasis at 1 month are summarised in Tables II to VI. In one patient, the histology was sarcoma which in retrospect may represent a primary tumour. Of the 18 cases that were improved at one month, 15 had surgery.

LONG-TERM OUTCOME

The follow-up ranged between 1 month and 1 year with a mean period of 3.5 months. 22 out of the 33 cases (66%) were alive at the time of follow-up. 19 cases were then referred back to their general practitioners and were lost to follow-up. Out of the remaining 14 patients followed up in the neurosurgical clinic, 10 died subsequently: 1 (1 month), 6 (4-6 months) and 3 (1 year). The remaining 4 patients were known to be alive and well at follow-up : 2 (2 months) and 1 (1 year).

DISCUSSION

Cancer of unknown primary site accounts for a relatively large group of brain metastases in the previous reports (2, 3). In the series reported by Yardeni et al (2), it is the largest subgroup of all single brain metastasis admitted over a 12-year period. It represents a unique group of brain tumours in that a fairly urgent diagnosis of the intracranial condition is required because the primary systemic cancer is not known. This urgency is accentuated if the lesion is solitary rather than multiple. Although a presumptive diagnosis of secondary tumours had been made in 16 cases with multiple tumours, brain biopsy and excision remained the best diagnostic procedure and

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