



Figure Photomicrographs showing immunostainings for chromogranin A (left upper, 1320 \times), prolactin (right upper, 1320 \times), growth hormone (left lower, 1320 \times) and ultrastructural detail of secretory granules (right lower, 36600 \times).

10–25% of the tumour cells contained prolactin and it is possible that the patient's impotence was due to hyperprolactinaemia. The combination of apparently benign histological features followed by seeding through the CSF after 13 years has been described before.⁵ The tumour tissue deposits occurred in sites at which the radiotherapy dose was low or to which radiotherapy was not given. This suggests that a pituitary adenoma with potential to metastasise may respond to radiotherapy. Dissemination of tumour during surgery cannot be excluded as a cause of arachnoid seeding but such seeding has been observed in patients who have not previously had operation.

We conclude that the surgeon as well as the pathologist should be aware that "ectopic" suprasellar adenohypophyseal cells and adenomas occur in the supra- and parasellar region. The diagnosis can be made by the application of immunohistochemistry and electronmicroscopy to biopsy material. This tumour may be hormonally active so that

endocrinological studies should be performed before operation.

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Tumour necrosis factor- α in malignant melanomatous meningitis

Meningeal infiltration by neoplastic cells is an ominous prognostic sign in patients suffering from systemic cancer. After carcinoma of the breast and bronchus, malignant melanoma is the third most common primary tumour in patients with diffuse leptomeningeal metastasis.¹

Intrathecal synthesis of IgG and detection of oligoclonal immunoglobulin bands on isoelectric focussing gels of CSF in meningeal carcinomatosis, suggest immune recognition of tumour cells within the CNS.² We determined the levels of two cytokines, tumour necrosis factor- α (TNF α) and interferon gamma (IFN γ), in paired serum and CSF samples obtained from 45 patients with meningeal malignancies. Cytokines, for example, interleukins, interferons, and TNF α , are multifunctional messenger molecules currently evaluated for new approaches of im-

muno-therapy in disseminated malignancies.

Our study included CSF and serum samples, stored at -70°C after lumbar puncture and centrifugation without further processing, from patients with diffuse leptomeningeal metastasis from cancer of the breast (14), bronchus (7), ovary, cervix, prostate, kidney, stomach (1 each), and unknown origin (4), malignant melanoma (4), non-Hodgkin lymphoma (9), multiple myeloma (1), and Hodgkin's disease (1). Commercial ELISA kits were purchased from British Biotechnology, Oxford, UK, (TNF α), and Endogen, Boston, USA (IFN γ). Sensitivity was 50 ng/l for IFN γ and 40 ng/l for TNF α .

IFN γ was found in the CSF in carcinomatosis from two cases of breast cancer (322 and 899 ng/l), one case of cancer of unknown origin (639 ng/l), and one case of non-Hodgkin lymphoma (66 ng/l). IFN γ in serum was positive in two cases of cancer of the breast (56 and 901 ng/l); neither of which had detectable IFN γ in the CSF, and one case

of cancer of the bronchus (526 ng/l). IFN γ was also present in the serum of the patient with non-Hodgkin lymphoma (48 ng/l) who had IFN γ in the CSF.

TNF α was detected in three of four CSF samples but not in the serum of patients with meningeal infiltration from malignant melanoma (61, 78, and 166 ng/l) or in CSF in other neoplastic diseases. TNF α was, however, detected in sera from three patients with meningeal carcinomatosis (breast, 534 ng/l; bronchus, 46 ng/l; unknown origin, 118 ng/l) and one patient with non-Hodgkin lymphoma (48 ng/l). None of the CSF or serum samples contained both IFN γ and TNF α .

TNF α may mediate inflammation and tissue destruction in bacterial meningitis, particularly severe meningococcal disease,³ inflammatory demyelination,⁴ and tumour cell cytotoxicity⁵ in vitro.

To our knowledge, this is the first report on TNF α in meningeal malignancies. New approaches to an immunotherapy of malignant melanoma are evolving rapidly, and are based on specific immunogenic features of this malignancy, for example, inhibition of tumour cell proliferation in vitro by IFN γ and TNF α .⁶ Although elevated levels of TNF α in the CSF of patients with malignant melanomatous meningitis are still a preliminary finding, the lack of similar results in a large control group of other meningeal malignancies confirms the existence of special interactions between melanoma cells and the host's immune system. This warrants further investigation.

Partial self induced seizures: an uncommon motivation for auto-induction

Some epileptic patients may self induce their seizures. In most instances, these are people affected by photosensitive primary generalised epilepsy, in whom self induction is by intermittent photic stimulation (IPS) or, more rarely, pattern stimulation or eye closure. Documented reports have increased recently due to the availability of IPS from