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MEDICAL MEMORANDA

Meningioma Mimicking Features of a Phaeochromocytoma

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We report a case of a supratentorial meningioma in a patient who had episodic hypertension responsive to α- and β-blockade and associated with an excess urinary excretion of vanillomandelic acid (VMA). After excision of the tumour VMA excretion became normal.

Case Report

A 55-year-old woman was admitted through the casualty department, having been found lying in a street. She had experienced headache and vomiting and her employer volunteered symptoms suggestive of organic confusion in the patient, but a detailed history was unobtainable.

On examination her weight was 69 kg, and her blood pressure 195/120 mm Hg. She had complete right third nerve palsy and flaccid left hemiparesis. The results of skull and chest *x*-ray examinations and intravenous pyelography were normal. A lumbar-puncture showed clear fluid and a pressure of 270 mm. E.E.G. showed right-sided abnormality. A right carotid angiogram showed a vascular tumour supplied by the middle cerebral artery in the region of the lesser wing of the right sphenoid bone, and a biopsy specimen of the tumour showed transitional cell meningioma.

During the days taken to complete these investigations her level of consciousness gradually deteriorated, and she did not respond to dexamethasone. After the excision of her meningioma the conscious level lightened for a few days but then relapsed and remained unchanged until her death.

Before the tumour was removed the patient remained hypertensive, and episodic increases of the hypertension to 215/150 mm Hg with tachycardia occurred. On the five occassions when 24-hour urine specimens were assayed for VMA an excess was detected (see table). The blood urea was in the normal range during the whole illness. The blood pressure evanescently responded to 10-mg, but not 5-mg, intravenous doses of phentolamine, and both hypertension and tachycardia responded to β-blockade. After tumour excision the level of VMA excretion became normal, but the hypertension persisted.

The patient died of bronchopneumonia five months after admission. At necropsy much of the brain was seen to be infarcted. No residual tumour was present. No phaeochromocytoma was found in the abdomen or thorax.

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Excretion of Vanillomandelic Acid (VMA) in Patient with Meningioma

Date	14/9/72	26/9/72	27/9/72	2/10/72	3/10/72	9/10/72 Tumour Excision	2/11/72	4/11/72	27/11/72
VMA excretion (mg/24 hr)	10·0	8·6	9·2	10·7	10·1		5·1	4·6	5·6

Normal = <7 mg/24hr.

Discussion

There is a linear relation between C.S.F. pressure and mean systemic arterial pressure in patients with cerebral tumours (Kety *et al.*, 1948). Raised intracranial pressure can produce disturbances in vasomotor and respiratory function due to ischaemia of the medullary centres (Cushing, 1902; Eyster *et al.*, 1909) with stimulation of the sympathoadrenal pathway. The resulting hypertension, due to catecholamine and perhaps renin release, can be blocked in dogs by spinal cord section or autonomic ganglion blockade by tetraethylammonium chloride (Dickinson and McCubbin, 1963). This is the only known pathway for neurogenic hypertension, and as cerebral tumours are common an excess of urinary VMA should be often found. It is therefore surprising that only one similar case has been previously reported (Evans *et al.*, 1972). Cameron and Doig (1970) reported two patients with infratentorial tumours who experienced marked phaeochromocytoma-like symptoms but who did not have excess VMA excretion.

We report this case to emphasize the apparent infrequency of this association and to suggest that a prospective study would probably show further similar cases.

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