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Atypical presentation of frontal lobe tumour – a cautionary tale

Sir – A case is described of a frontal lobe brain tumour presenting as a slow deterioration in affect, personality and living skills. It is compared with other studies and reviews from the literature and the actual typicality of so-called 'typical' symptoms and signs is questioned. Finally, the implications for investigation and continuing care in atypical cases is reviewed.

Classical, intracranial frontal lobe tumours in elderly patients present with a relatively short history of deficits in behaviour, mental state and cognitive function, with progressive neurological signs. This has previously been reviewed by Fulton *et al.*¹ The authors presented 14 patients with intellectual and behavioural deterioration coupled with failures in self-care occurring over a few weeks.

Computed tomography (CT) scanning showed frontal or bifrontal tumours in 13 cases and one case of occipital lobe tumour. The authors stressed the importance of CT scanning of elderly patients with a relatively short history of confusion or intellectual failure. Most patients in their study (12 of 14) also had early demonstrable neurological signs and the importance of detailed neurological examination was emphasised.

This case report describes a quite different presentation, namely that of a far more insidious deterioration of affect, personality and living skills occurring in the absence (at least initially) of hard neurological signs, but in which CT scan was 0 (less revealing in terms of diagnosis and prognosis).

GM, a 68 year old former accountant was initially referred as an outpatient with an eight-month history of low mood, fatigue and a constant 'band-like' headache unaccompanied by nausea, vomiting, or blurring of vision. He described early-morning wakening, diurnal variation of mood and loss of interest in his normal pursuits. During this period, his thinking had become morbidly introspective, with ruminations about the death of his mother 17 years previously and about his own mortality.

Born locally, he remembered being a happy and healthy child, although he felt his mother had been over-protective towards him. He had no siblings. Following a successful scholastic career, he worked initially as a bank teller and subsequently gained entry to the accountancy profession. Here, he remained until retirement aged 64. It was noted that during his latter six years with the firm his personal appearance, particularly his smartness and cleanliness, deteriorated markedly. It was felt he no longer 'fitted' the image of the firm and he was moved

initially to part-time working and ultimately to early retirement.

His father died in 1958 and GM then lived with his mother until her entry into a residential home in 1979 and her death a few months later aged 93. There is no family psychiatric history. A lifelong non-smoker and teetotaler, he always found social and personal relationships difficult and never married.

Following an episode of mumps orchitis aged 13, he became preoccupied with his health but appears to have had no further physical illnesses. He received inpatient treatment for depression in 1970. It was noted at the time that he was "compliant, obsessional and fitted in easily with ward routine". He was treated with electroconvulsive therapy and made a good recovery.

At initial outpatient consultation for his present illness, his appearance was striking. He was unkempt, clearly unwashed and heavily bearded. Although highly articulate and showing a dry sense of humour, he was apathetic and his mood state was one of deep unhappiness. He showed no suicidal or psychotic thinking and cognitive testing revealed no abnormality. A diagnosis of depression was made and he was started on paroxetine 20mg with arrangements for follow-up investigations and review.

A social services home visit was arranged and found him to be living in 'indescribable squalor' with evidence of very poor self-care and months of domestic and bodily waste piled in each room. He was admitted voluntarily to the psychogeriatric assessment ward.

Physical examination and serum investigations revealed no abnormality. CT brain scan, however, showed a mixed density mass in the right frontal lobe with calcification. The right lateral ventricle was slightly compressed. An urgent neurosurgical consultation and Magnetic Resonance Imaging (MRI) scan strongly favoured a diagnosis of "large slow-growing frontal meningioma". The neurosurgeon advised against operation due to size and location of tumour.

The patient's mood over subsequent weeks remained one of depression. He made little response to different anti-depressants and began developing intrusive, obsessional worries about dirt and contamination. Despite discussions with staff regarding diagnosis he showed difficulty in comprehension and acceptance and firmly believed he would recover. He received supportive psychotherapy from a clinical psychologist which gradually helped him accept his diagnosis and plan for the future. Four months after admission he remained fully cognitively intact, scoring 27/30 on Mini-Mental State Examination (Folstein *et al.*)² As the tumour progressed he developed a left-sided hemiplegia, urinary incontinence and dysarthria – with no response to steroids. A repeat CT scan confirmed a midline shift and falcine herniation consistent with tumour progression.

These developments necessitated a package of terminal nursing care with ongoing physical and psychological support to ensure maximal comfort and freedom from distress. During this period, many of his depressive symptoms lifted and he began drawing up his will and discussing aspects of his care eg. whether to enter a hospice. Psychological support was also available to staff as they nursed a dying patient whom they had by now known for several months.

Avery³ divides the symptoms of frontal lobe tumour into: (a) neurological, (b) psychological ie. causally related to

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the tumour type, site and direct effects, and (c) psychological ie. correlated stress reaction due to impairment of function. This last group is related to pre-morbid personality and previous reactions to stress. The commonest symptoms are depressed mood, apathy and lack of energy. In a series of seven patients (all having meningiomas) symptoms had been present for between four weeks and six years.

In another series from pre-CT days Hunter *et al*⁵ described three patients found to have frontal meningiomas whose symptoms had lasted three, 25 and 43 years respectively before the tumours were demonstrated radiologically. Their presentations ranged from 'positive symptoms' of excitement and hallucinosis to 'negative symptoms' of depression and apathy.

Amongst the symptoms of GM, the patient described in this report, was a headache 'like a band' but without variation or nausea/vomiting. Such headaches are common in depression, in contrast to a headache which is worst in the morning and accompanied by nausea – said to be suggestive of intracranial space-occupying lesion. Forsyth *et al*⁴ examined 111 patients with primary or metastatic brain tumours as identified by CT or MRI, in order to try and characterise tumour headache. Of the sample, 48% complained of headache, of whom 77% described 'tension-type', 9% 'migraine-type' and 14% 'other types'. Nausea and vomiting were present in 40%. The 'classical' early morning headache was uncommon.

This case report demonstrates a radiologically advanced, inoperable frontal meningioma which presented with insidious symptoms of depression and functional impairment in activities of daily living in a patient with a previously meticulous and obsessional personality. Although an unrelated primary depressive illness may have been superimposed upon organic deterioration, in retrospect these symptoms fit closely with frontal lobe damage.

What is atypical is the long timescale (up to 10 years judging from his occupational decline), and the absence of many 'classical features'. His headache was non-classical tumour headache (as were many in Forsyth's series) and other neurological signs were markedly absent. It is difficult to state precisely the relationship between the tumour

and the psychological symptoms although the work by Avery suggests a close link.

The case raises a number of points with regard to occult brain tumour in elderly patients:

1. The presence in a depressed patient of a deterioration in appearance, volition and living skills which is out of keeping with the degree of overt depression, and has a more insidious course should raise suspicion.
2. The absence of hard neurological signs and 'classical' tumour headache should not prevent the diagnosis of brain tumour from being considered.
3. With increasing availability, neuroimaging by CT or MRI can be highly useful even when the history is of long duration and devoid of 'organic features' such as confusion or cognitive deficits.
4. Finally, many such patients are likely, by the time of diagnosis and subsequently, to require psychological intervention aimed at assisting them in coming to terms with the underlying problem and the implications for the future. As was the case with this patient, the relevant information may only become real if discussed and gently reinforced over several weeks. Supportive psychotherapy should be geared specifically to individual needs and wishes and to those who nurse the patient through the final illness.

Greg Spencer, MB, ChB, MRCPsych,
Senior registrar in old age psychiatry,
D-Block,
Kidderminster General Hospital,
Bewdley Road,
Kidderminster,
Worcestershire,
England.

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