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Case Report

Neurosurgery in an octogenarian with dementia

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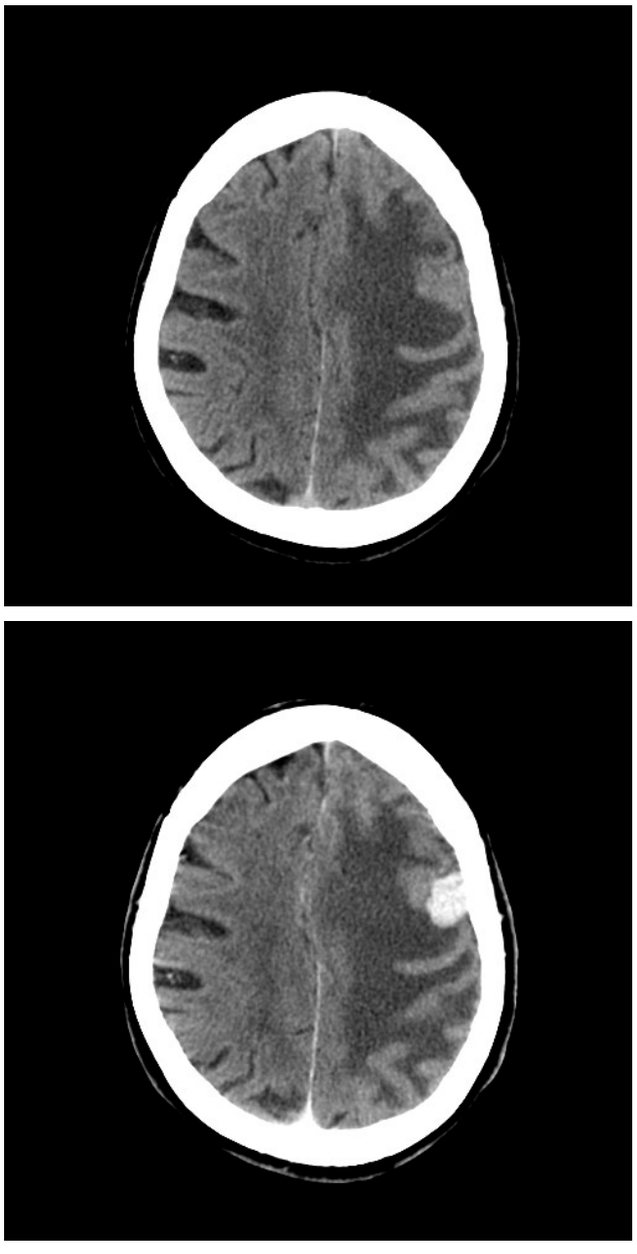

Fig 1.CT head. Scans pre (top) and post (bottom) administration of intravenous contrast demonstrate a soft-tissue density lesion measuring 2.2cm, the lateral border of which is confluent with the vault. There is extensive vasogenic oedema with some midline shift to the right side.

ABSTRACT

We report the case of an 83 year old female referred for evaluation of memory impairment. Routine neuroimaging showed unusual findings. Following subsequent clinical deterioration, she proceeded to neurosurgery with an excellent functional outcome. This case highlights that major surgery should be considered in older patients with comorbidities if an indication to operate is present.

CASE REPORT

An 83 year old lady was referred to the Memory Clinic by her general practitioner. Corroborative history from her son was of 1 to 2 years duration of insidious onset and gradual progression of short term memory loss, disorientation in time and place, and behavioural change with apathy and occasional agitation. She remained independent in activities of daily living with supervision from her husband. Past medical history included ischaemic heart disease, type 2 diabetes mellitus and chronic kidney disease. Medications were mirtazapine, glibenclamide, aspirin, bisoprolol, isosorbide mononitrate, ramipril, frusemide, amlodipine and rosuvastatin.

Physical examination was unremarkable, with no focal neurology in particular. On neuropsychological testing, she scored 67/100 on the Addenbrooke's Cognitive Examination (ACE), including 23/30 in the Mini-Mental State Examination (MMSE). Laboratory studies including full blood count, biochemistry panel, thyroid function and serum vitamin B12 and folate levels were unremarkable. A routine CT head scan was arranged (*Figure 1*). This showed a soft tissue density mass lesion measuring 2.2cm, the lateral border of which was confluent with the vault, which showed avid enhancement after intravenous administration of contrast material. There was extensive left hemisphere vasogenic oedema and midline shift. An urgent MRI was arranged (*Figure 2*). This showed a dural based extra-axial mass lesion causing significant mass

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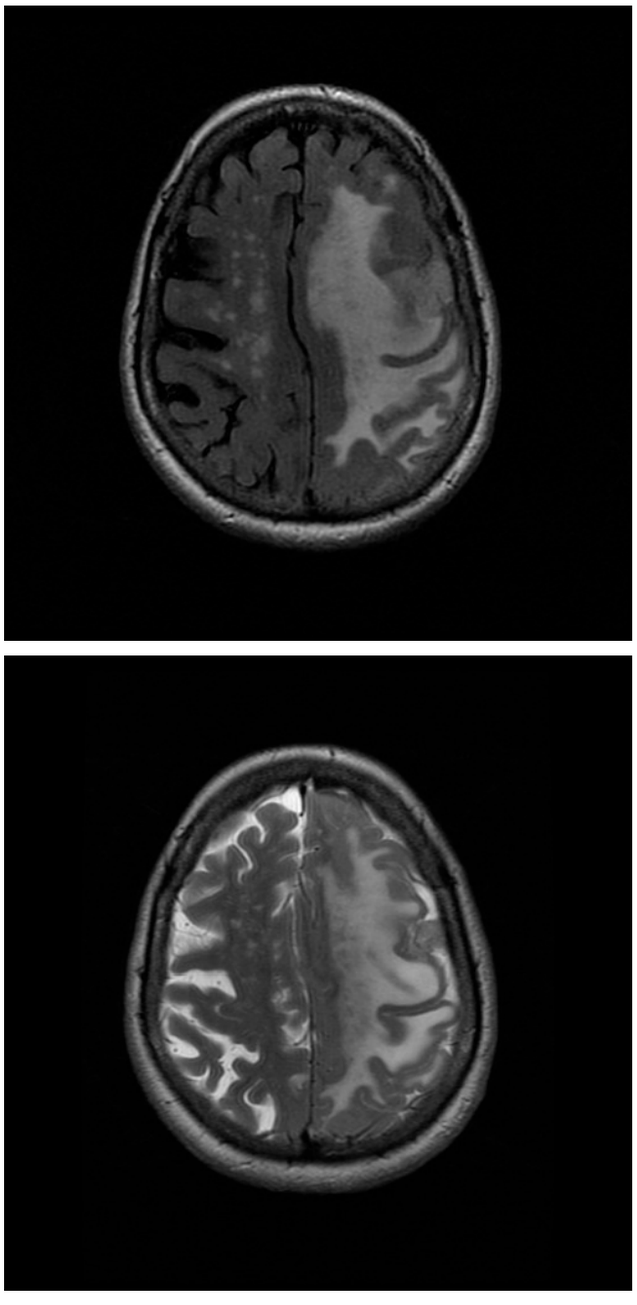

Fig 2. MRI head. These FLAIR images (pre top and post-contrast below) show a dural based mass lesion causing significant mass effect in the left hemisphere. It has a lobulated contour and indents the adjacent cortex. There is extensive vasogenic oedema in the subcortical white matter and there is effacement of the left lateral ventricle. No other lesion was identified.

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At follow-up four weeks after the initial assessment, her family reported that her cognition and function had declined. Based on the neuroimaging findings, dexamethasone 2mg tid was started and neurosurgical opinion sought. Three weeks later after a generalised seizure which spontaneously resolved after 2-3 minutes she was seen again. Further deterioration was reported. Dexamethasone had been stopped due to oral candidiasis.

After discussion regarding the risks and benefits of surgery, she underwent image guided resection of the left posterior frontal tumour seven weeks later. Considerable adherence to underlying brain was noted but complete tumour removal achieved (Simpson grade 1).[1] Histopathological examination of the operative specimen showed a secretory meningioma WHO grade 1 (*Figure 3*).[2] Post operative course was complicated by brachial vein thrombosis treated with anticoagulation. After a short period of rehabilitation, she was discharged home independent in ADLs. MMSE was 16/30. When last seen twelve weeks later, her condition had significantly improved and MMSE was 25/30.

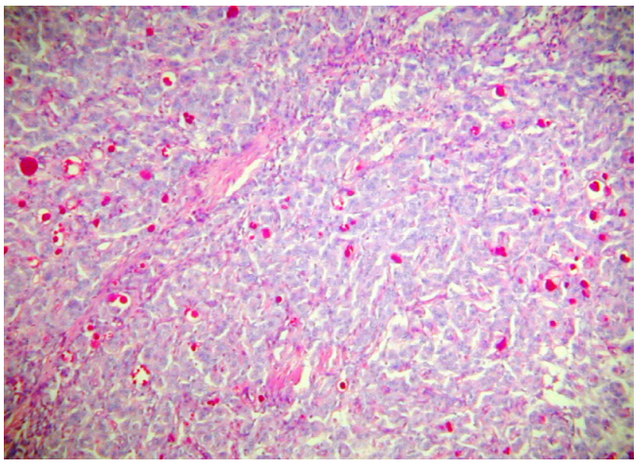

Fig 3. PAS stain of resected tissue showing typical features of secretory meningioma

Several important issues are highlighted by this case. First, neuroimaging is recommended[3] in all cases of suspected dementia to exclude other cerebral pathologies, as in this case. Second, good teamwork and communication between several specialists (geriatrician, neurosurgeon, pathologist, rehabilitation team and general practitioner) is essential to optimise the patient's outcome. Third, meningiomas are graded according to histopathological features as I, II or III with increasing risk of recurrence, morbidity and mortality with increasing grade.[4] This rare subtype, although grade I and therefore unlikely to recur, is associated with significant morbidity because of the unusual association with cerebral oedema. A detailed discussion of the pathological features of secretory meningiomas is beyond the scope of this report. Interested readers are referred to an in-depth review.[4] Finally, an excellent recovery from a major invasive procedure is possible despite presence of comorbidity. One recent prospective analysis found older age (>70 years) was associated with increased risk (OR 3.0, p=0.01) of perioperative mortality from surgical resection for intracranial meningioma.[5] Another single institution report suggests several features of our patient indicate good surgical outcome and short- and long-term survival – tumour size and location, extent of resection, presentation with confusion and seizure, medically controlled comorbidities and performance status.[6]

The authors have no conflict of interest

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