Recent intracranial haemorrhage and Behcet disease

Sir: Vascular lesions are one of the common complications of Behcet disease. Most of the vascular lesions are considered to result in an occlusive process or aneurysm formation in the large vessels. There has been limited evidence for the intracranial site of these vascular lesions. According to the extensive study by Maeda and Nakatsumi, however, 9% of patients with Behcet disease died of cerebrovascular disease, which is the third leading direct cause of death following Behcet disease itself (41-6%) and heart disease (11-2%). This suggests that cerebrovascular disease may occur in a significant number of the patients with Behcet disease. I report a patient with a history of Behcet disease and hypertension who had repeated massive intracranial hemorrhages three times.

A 50-year-old Japanese man was admitted complaining of severe headache and vomiting. His past history included a recurrent ocular disturbance, aphthous stomatitis and genital ulcer since he was 28 years old. He was diagnosed as having Behcet disease by an ophthalmologist when he was 42 years old. At that time, he also had hypertension. He became totally blind at the age of 44 years. He noticed a mild right hemiparesis when he was 49 years old, and a mild dysarthria followed two years later. When the patient was 49 years old, he was hospitalised with a diagnosis of arachnoid cyst in the left frontal lobe which was confirmed by operation. He was discharged with a mild right hemiparesis and dysarthria. Upon that presentation, the patient was totally blind and had marked cerebellar ataxia in the left extremities. He was totally blind but there was neither obvious aphthous stomatitis nor genital ulcer. The blood pressure was 240/120 mm Hg. The CT scan revealed a massive haemorrhage in the left cerebellar hemisphere. The laboratory examination demonstrated a haemoglobin of 11-2 g/dl; RBC 4,440,000/cu mm; WBC 15,095/cu mm; platelets 230,000/cu mm; haematocrit 40%. Fibrinogen was 226 mg/dl and FDP was 4 μg/ml. Bleeding time was 1' 15''. Clotting time was 10' 30''. The maximum rate of platelet aggregation induced by ADP (1 μM) was 80%. There was no evidence of a haemorrhagic diathesis in the laboratory data. Blood sugar was 140 mg/dl. Sodium was 143 mEq/l; Potassium 29 mEq/l; Chlor 107 mEq/l. The protein value was 7-7 g/dl. The ECG was within

References

normal limits. The EEG showed an irregular and diffuse alpha rhythm (9–11 Hz) mixed with sporadic theta activity mainly in the left frontal region. A marked hypertension had persisted in spite of therapy. On the 7th day of admission, the patient suddenly became unresponsive to verbal commands (semicoma) presenting a decorticate posture of his right extremities. A massive left basal ganglionic haematomy was demonstrated on CT. Thereafter the patient was in semicoma and there was no obvious recovery. On 53rd day of admission, the patient developed a generalised convulsive seizure. Immediately after the seizure he displayed a bilateral decerebration posture and he became completely unresponsive to any painful stimuli. Then CT scan revealed a massive haematoma in the right basal ganglion region. There was no remarkable recovery in his consciousness after the third attack of cerebral haemorrhage. The patient developed complications of broncopneumonia and severe gastrointestinal bleeding. The patient died on 65th day of admission.

Postmortem examination showed the brain weight to be 1390 g. Old subarachnoid haemorrhage was seen at the base. There was a large old haematoma in the left basal ganglia. In the left basal ganglia, there was a relatively fresh large haematoma penetrating into the left lateral ventricle. An old large haematoma was found in the left cerebellar hemisphere. No arteriogenous malformation or visible aneurysm was found in these haematomas. There was a small secondary haemorrhage and small localised infarction in the pons. The gastrointestinal tract showed severe ulceration of the stomach accompanied by haemorrhage. The right and left lungs weighed 770 and 960 g, respectively. Both lungs were oedematous with severe bronchopneumonia. There were many microemboli in the pulmonary arteries. Arteriosclerotic changes were marked also in both kidneys which showed benign nephrosclerosis accompanying with intes-
tinal nephritis. Microscopic investigation revealed a slight lymphocytic infiltration around the small vessels in the cerebral white matter which resembled a characteristic neuropathological feature of neuro-Behcet disease. A perivascular lymphocytic cell cuffing was observed in the post-capillary venule located deep in the cerebral hemisphere. Small softening foci were scattered in the cerebral white matter and in the pons. In addition to these findings, there were marked hypertensive arterial changes in the intracerebral small arteries: thickening of vessel wall, hyalinosis, and fibrinoid degeneration. Hypertensive arterial changes were marked in the small arteries in the basal ganglia.

The central nervous system is affected in 10–25% of the patients with Behcet disease. Meningoencephalitis and diffuse brainstem lesions are known to be typical forms of neuro-Behcet disease. Their characteristic neuropathological features include perivascular cell cuffing and disseminated focal softenings. At this admission, there were scattered small softenings deep in the cerebral hemisphere but the perivascular lymphocytic infiltration was mild and it was not in the active stage so that it could cause organic changes of the vessel wall. Five years after the diagnosis of Behcet disease, the patient experienced a mild hemiparesis and dysarthria. There is a possibility that these neurological deficits might be associated with a small infarction (lacunar stroke syndrome) of the basal ganglia, because the patient had a history of hypertension and there was a spontaneous gradual recovery of these neurological deficits. There was no arteriogenous malformation or aneurysm which could cause a massive intracranial haemorrhage. In addition, the pathological features of these intracranial haematomas resemble so-called spontaneous (hypertensive) intracerebral haemorrhage which can be seen in the hypertensive patients. Furthermore, there were marked hypertensive arterial changes including hyalinosis and fibrinoid degeneration in the intracerebral small arteries in this patient. These pathological findings indicate that the recurrent intracranial haemorrhage might be associated with hypertension. The intracranial small penetrating arteries are known to be the common sources of bleeding in hypertensive intracerebral haemorrhage. In the histopathological examinations, it has been suggested that a hyalyn change in the media of small arteries and a focal fibrinoid degeneration are closely related with the occurrence of the hypertensive intracerebral haemorrhage. Fibroid necrosis is now considered to be the responsible factor for the weakness of the arterial wall in hypertensive haemorrhage. Consequently, these marked hypertensive arterial changes of the intracerebral small arteries might be responsible for the recurrent intracranial haemorrhages in this patient. On the other hand, the intracranial blood vessels have usually been normal in the previous reports on patients with Behcet disease, except for several instances: a small perivascular haemorrhage, an occlusion of the middle cerebral artery, bilateral sigmoid sinus thrombosis accompanied with arteriovenous malformation, a thrombosis or thrombophlebitis of the sagittal sinus. There is no literature describing intracranial haemorrhage in patients with Behcet disease. However, Aksel reported a hyaline degeneration in the media of the intracerebral arteries in a 34-year-old patient with Behcet disease who displayed hemiparesis, dysarthria and meningeal signs. This may suggest some participation of Behcet disease in the progression of the vascular lesions of cerebrovascular disease in such patients. There are several reports of patients with systemic vasculitis who developed intracranial cerebral haemorrhage. In these patients, cerebral haemorrhage was not directly due to the vasculitis itself. The authors concluded that the pathogenesis of cerebral haemorrhage is associated with the side effects of anticoagulant therapy in the treatment of thrombophlebitis. Since there is very little pathological information concerning patients with Behcet disease, who developed cerebrovascular disease, it seems difficult to differentiate the pathogenesis of cerebral haemorrhage in Behcet disease. As far as our patient is concerned, however, the histopathological features and the clinical history indicated that the recurrent intracranial haemorrhage is more closely associated with the hypertensive arterial changes than with the perivascular lesions of Behcet disease.

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References

Matters arising

The relation of essential tremor to Parkinson's disease.

SIR: We note with interest the absence of a genetic linkage between essential tremor and Parkinson's disease reported by Marttila et al from their epidemiological studies in a Finnish population.\(^1\)

Unfortunately, the precise incidence and prevalence of essential tremor in the United Kingdom is not known as no properly constructed epidemiological studies have yet been carried out, though indirect evidence suggests that, in the Finnish survey\(^1\) essential tremor is a common disorder. In agreement with Marttila et al our uncontrolled observations on more than 400 patients with essential tremor seen over the last five years have not suggested a greater incidence of Parkinson's disease in either the patients themselves or their relatives than one would expect to find in the general population. However, until the prevalence of essential tremor within the UK population is established by much needed community-based epidemiological studies, the possibility of a genetic link between essential tremor and Parkinson's disease cannot be discounted entirely.

The occurrence of an additional tremor of the essential tremor type in patients with Parkinson's disease needs clarification. For instance Shahani and Young\(^2\) describe the presence of an action tremor of higher frequency than the typical rest tremor in 5-10% of patients with Parkinson's disease. In fact, surveys have shown higher frequency action or postural tremor to be common in Parkinson's disease coexisting with, and separate in origin from, the characteristic lower frequency tremor of rest.\(^3\) In a study of 60 patients with Parkinson's disease, symptomatic postural tremor was as common as the rest tremor and in more than 80% of patients, two corresponding peaks could be seen to co-exist in the tremor spectrum.\(^4\) This feature we have found pathognomonic of Parkinson's disease.\(^4\)

Using techniques of waveform analysis another, separate tremors of different frequencies can also be seen in some patients.\(^5\) Thus, action and postural tremors are an integral part of the tremulous phenomena seen in Parkinson's disease. These tremors have behavioural characteristics in common with both postural and action tremors, including essential tremor, and may share common underlying pathophysiological mechanisms. However, Parkinson's disease and essential tremor are distinct nosological entities, separable in terms of structural pathology and prognosis.

To avoid confusion it would be preferable if the term "tremor of essential type" was not used when referring to tremors of Parkinson's disease. The overlap in phenomenology between essential tremor and Parkinson's disease may account for the frequency with which the former may be misdiagnosed as the latter.\(^6\)

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