double-stranded DNA antibodies' prompted speculation to whether such antibodies, or other autoantibodies described in scleroderma, might be found in patients with "idiopathic" HFA.

It has been suggested that lesions to the ipsilateral cervical sympathetic innervation, whether peripheral or central, may cause HFA. Moss and Crickeir reported a rat model of progressive HFA following cervical sympathectomy. However, autonomic function testing in patients with HFA has produced conflicting results: although some patients have clear evidence of concomitant autonomic dysfunction (for example, ipsilateral Horner's syndrome) others give normal responses to standard tests of autonomic function. Nonetheless, Archambault and Fromm came to the conclusion that the sympathetic theory alone could explain most cases of HFA, even those with overt evidence of autonomic dysfunction, a position which seems less tenable today. Only indefinite pathologic changes have been found in the cervical sympathetic ganglia in the few patients examined thoroughly at post mortem. The evidence of autonomic dysfunction was found in our patient.

Facial trauma is a recognised antecedent of HFA (in up to a third of cases) but the mechanism (if any) whereby it might produce the condition remain to be clarified. Much remains to be learned of the aetiology of this condition, which probably should not be regarded as a uniform syndrome. Its clinical heterogeneity probably reflects an underlying aetiologic heterogeneity. Some cases probably reflect a developmental abnormality, possibly with a genetic basis. Other cases may form part of the clinical spectrum of scleroderma, and others still may result from involvement of the cervical sympathetic chain. The suggestion has also been made that cases with prominent neurologic involvement may result from a slow viral infection.

We thank Dr R C Hughes for permission to report his patient.

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Subarachnoid haemorrhage associated with MDMA abuse

Over recent years the use of 'ecstasy' (3,4-methylenedioxymethamphetamine, MDMA), a synthetic amphetamine derivate, has become increasingly popular. In the United Kingdom organised abuse of 'ecstasy' often takes place at 'rave parties' involving several hundred participants in prolonged vigorous dancing.

MDMA is generally taken orally and in the only case that has been reported a peak plasma concentration of 0.106 mg/l was measured after two hours following a 50 mg oral dose (in a 74 kg adult male). The elimination half life in this case was estimated to be 7-6 hours with 65% of the dose excreted in the urine unchanged and 7% excreted as the metabolite methylenedioxymethamphetamine (MDA) within three days. Whilst the potential for misuse has been recognised and it has been banned under UK legislation as a class 'A' drug since 1971, serious morbidity and mortality associated with MDMA has only recently been noted. Deaths following MDMA abuse have occurred in the presence of underlying pathology such as ischaemic heart disease, asthma and cardiac conduction defects but no predisposing cause is necessary; death has been reported due to ventricular fibrillation. In addition, significant morbidity has been noted including hypertension, disseminated intravascular coagulation and acute renal failure. Despite widespread abuse acute neurological complications from MDMA seem to be rare. Cocaine and amphetamine abuse are both well recognised causes of subarachnoid haemorrhage but we are unaware of any similar reports of subarachnoid haemorrhage associated with MDMA abuse.

A 25 year old female presented in the accident and emergency department at 11.20 am with a severe occipital headache of sudden onset at 6 am that morning. The headache was described as the "worst headache she had ever had" and was associated with vomiting. Between 00.30 and 05.00 she had taken 2 1/2 'ecstasy' tablets, while sitting at home with friends. Although the patient was a 'regular user' and this amount was 'usual' for her, she denied the use of 'ecstasy' for the previous two months. There was no history of any other drug abuse and she had not consumed alcohol. Past medical history was unremarkable and there was no prescribed medication.

On clinical examination she was apyrexial, alert, orientated, and responding appropriately to verbal commands. Motor responses and eye opening were normal; she had meningeal with a positive Kernig's sign on the right. Pupils were symmetrical and not dilated with normal direct and consensual reactions. Fundoscopy revealed no abnormality. Headache was relieved by vomiting. Following the episode she was admitted to the National Hospitals Unit, Guy's Hospital, where she was found to be normal and the headache had resolved. CT scan of the head revealed no abnormalities.

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We received 60 mg of dihydrocodeine orally as analgesia. A CT head scan was performed showing subarachnoid haemorrhage with blood in the sulci (fig 1a, b). Treatment was started with regular oral nimodipine 60 mg 4 hourly, before transfer to the regional neurosurgical centre. Carotid angiography revealed a left posterior communicating artery aneurysm (fig 2), which was subsequently clipped. Subarachnoid haemorrhage was associated with MDMA abuse.
It is evident that this patient had a pre-existing 'berry' aneurysm. After ingestion of MDMA, however, it is possible that there was an acute sympathetically mediated surge in blood pressure which caused the aneurysm to rupture. It is also possible that due to repeated use of the drug recurrent surges in blood pressure led to progressive weakening of the vessel wall resulting in aneurysm instability. As noted previously this patient is a regular user of MDMA over a two to three year period before presentation. Such a mechanism has previously been suggested in cocaine abuse which has a recognised association with subarachnoid haemorrhage. Although current usage of MDMA is generally associated with the 'rave scene' it is of note that in the patient we describe, no strenuous physical activity or sexual intercourse was associated with the onset of symptoms.

This case emphasises the importance of taking a full drug history including the possible abuse of illicit drugs in patients presenting with subarachnoid haemorrhage. Subarachnoid haemorrhage may therefore be yet another serious adverse effect of the abuse of MDMA and adds to the increasing number of reports of serious morbidity and mortality associated with this drug.11

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Opsoclonus showing only during eye closure in hereditary cerebellar ataxia

Opsoclonus is an abnormal eye movement characterised by a burst of saccades in all directions without an intersaccadic interval. Opsoclonus only during eye closure, and opsoclonus in hereditary cerebellar ataxia, as in our case, have not been previously described.

A 34 year old man complained of gait disturbance and difficulty with fine finger movements. At the age of 28 he gradually noted a deterioration in his baseball playing skills. At the age of 30 he began to have difficulty in walking down stairs, and has since had to use a hand rail. He also experienced difficulty with handwriting and manipulating small objects, and when watching baseball he frequently lost sight of the ball. He had no history of alcohol abuse. On admission on 12 March 1990, physical examination revealed a scaphoid skull, high arched palate and small auricles. Neurological examination showed that he was mentally alert and cooperative. The pupils were equal, round and reacted to light. He had a horizontal fine ocular oscillation during fixation. When he closed his eyes abnormal ocular movements were noted together with an upward deviation of the eyes (Bell's phenomenon). The eyes showed frequent irregular rapid conjugate oscillations in all directions. He had saccadic pursuit eye movement and ocular dysmetria. He had moderate to severe limb and gait ataxia, and ataxic dysarthria. There was no muscle atrophy or weakness. Tendon reflexes were normal and the plantar response was flexor. There were no involuntary movements, and no sensory nor autonomic disturbances.

Routine laboratory examinations for blood and urine showed no abnormality. Serum creatinine and electrolytes were normal. Haematology, platelet count, and liver function tests were normal. AIDS screening was negative. Urinalysis showed no protein, glucose or nitrites. Skin tests to common allergens were negative. Immunoglobulins A, G and M were normal.

On the workup for ataxia, MRI disclosed an area of T2 signal change of the left thalamus. EEG showed a left temporal lobe spike and wave discharge. CSF analysis showed a mild papilloedema, and the protein was increased. Visual fields were normal. Audiometry was normal. The patient was discharged with a diagnosis of idiopathic ataxia. His condition deteriorated and he was readmitted with a diagnosis of possible subacute bacterial endocarditis. His ataxia was at times sudden and the patient's speech was slurred. His ataxia did not improve with antibiotics.

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