action of thrombin. As some of the coagulation factors have short half lives—for example, factor VII has a half life of only two to five hours—the prothrombin time is a good marker of the synthetic capacity of the liver and hence reflects the severity of hepatic necrosis. The observation that the prothrombin time peaks on the third day after paracetamol overdose in those patients who are going to survive and on the fourth day or later in those who will not presumably reflects either a greater degree of hepatic necrosis or a delay in hepatocyte regeneration in those patients who die. This study has shown that monitoring the daily changes in the prothrombin time in patients with paracetamol induced fulminant hepatic failure can identify a high risk group who could benefit from orthotopic liver transplantation.

An increase in prothrombin time on day 4 after overdose and a peak prothrombin time of $\geq$180 seconds can identify 65% of the patients with a fatal outcome. Both have been found to be specific indicators of a poor prognosis with high positive predictive values. Only acidosis on admission (pH <7·3), as described in our unit,[7] has been found to be a more discriminating variable (specificity 0·99 and positive predictive value 0·95) than either of the two indicators reported here if applied individually. In those patients with early acidosis the decision to proceed with transplantation has to be taken quickly due to the rapidity of deterioration. To our knowledge there are no reports of a prognostic indicator that is more discerning than the two we report here when used in combination. When choosing patients with paracetamol induced fulminant hepatic failure for liver transplantation it is necessary to utilise prognostic indicators that have high positive predictive values to reduce the incidence of inappropriate transplantation as the patients who recover without transplantation do so completely.

Only 12% of patients with a fatal outcome die during the first three days after the overdose. Therefore, using the criteria identified in this study, the prognosis of the remaining patients can be evaluated to a high degree of certainty on or before the morning of the fourth day after overdose and, consequently, soon after admission to the unit. This allows sufficient time to locate a donor and perform liver transplantation before the onset of complications such as cerebral oedema, hypotension, and infection, which add to the hazards of the procedure. Also, the criteria do not rely on deep coma to predict a fatal outcome.

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Recurrent rupture of intracranial aneurysms in autosomal dominant polycystic kidney disease

Dominique Chauveau, Marie-Emmanuelle Sirieix, Francis Schillinger, Christophe Legendre, Jean-Pierre Grünfeld

Clinique Néphrologique, Hôpital Necker, 75743 Paris, Cedex 15, France
Dominique Chauveau, MD, *clinical assistant*
Marie-Emmanuelle Sirieix, MD, *research fellow*
Christophe Legendre, MD, *clinical assistant*
Jean-Pierre Grünfeld, MD, *professor*

Service de Néphrologie et d'Hémodialyse, Troyes, France
Francis Schillinger, MD, *chief*

Correspondence to: Dr Chauveau.

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The prevalence of intracranial aneurysms is increased in autosomal dominant polycystic kidney disease. Rupture of such aneurysms is one of the most serious complications of the disease. Decision analysis performed by Levey *et al* indicated that routine screening with cerebral arteriography was not warranted in patients with the disease.[1] In the analysis Levey *et al* assumed that patients who survive surgery following rupture of an aneurysm are not at risk of recurrent rupture of that aneurysm. They suggested, however, that "new aneurysms may occur and rupture," but to our knowledge this has not been shown. We report the recurrent development and rupture of intracranial aneurysms in three unrelated patients with autosomal dominant polycystic kidney disease.

Case reports

The table gives clinical data on the three patients.

Case 1—A 20 year old normotensive woman was referred with a subarachnoid haemorrhage. Cerebral arteriography showed an aneurysm of the right middle cerebral artery, which was clipped. Five years later autosomal dominant polycystic kidney disease was diagnosed by renal ultrasonography and from her family history: her mother and a brother and his two sons were affected but did not have a history of symptomatic intracranial aneurysm or severe renal failure. At the age of 34 she suddenly became comatose with a right hemiplegia. Cerebral arteriography showed an aneurysm of the posterior communicating artery, which was clipped. Aphasia persisted.

Case 2—A 22 year old woman was admitted with a subarachnoid haemorrhage. Autosomal dominant polycystic kidney disease had been diagnosed when she was 8 by intravenous pyelography and from her family history: her brother and father were both affected. Her brother required regular haemodialysis from the age of 35 and her father died suddenly of a stroke when he was 50. On admission cerebral arteriography showed an aneurysm of the right internal carotid artery, which was clipped. The patient remained well, and repeat angiography yielded normal results. One year later she developed arterial hypertension, which was controlled by a β blocker. Subsequently she developed progressive renal failure. At the age of 32 she was readmitted with a subarachnoid haemorrhage. Four vessel angiography showed three aneurysms (two anterior, one posterior) on the right side of the circle of Willis; all were clipped. A left hemiparesis persisted postoperatively. Haemodialysis was started three years later.

Case 3—A 29 year old man was admitted with a subarachnoid haemorrhage. Autosomal dominant polycystic kidney disease had been diagnosed two months previously on the basis of untreated hypertension, moderate renal failure, and bilateral cysts on ultrasonography. His mother, a brother, and a sister

Clinical characteristics of patients at presentation with or before rupture of intracranial aneurysm and at follow up

Case No	Age (years)	Blood pressure (mm Hg)	Serum creatinine (μmol/l)	Comment
1	20	120/80	80	
	34	110/75	118	
2	22	120/80	72	Regular haemodialysis started at age 35
	32	140/100	260	
3	29	200/?	130	Regular haemodialysis started at age 35; kidney transplantation done at age 36
	36	130/80	145*	

*After kidney transplantation.

had the disease but did not have symptoms of intracranial aneurysms; his sister developed end stage renal failure at the age of 28. Four vessel angiography showed an aneurysm of the right middle cerebral artery, which was clipped. Cerebral angiography four months postoperatively yielded normal findings. At the age of 35 he required maintenance dialysis for renal failure, and his blood pressure was subsequently normal. Renal transplantation was performed one year later. Two months later he was readmitted in status epilepticus. Cerebral computed tomography showed a left frontal haematoma with intraventricular haemorrhage, and angiography showed an aneurysm of the anterior communicating artery. The haematoma was evacuated and the aneurysm clipped. He was left with a severe neurological deficit.

Comment

These cases indicate that patients with autosomal dominant polycystic kidney disease may develop intracranial aneurysm over time. Rupture may first occur early in the third decade before hypertension or renal failure have developed. In our three cases rupture of aneurysms occurred at intervals of from seven to 14 years, and multiple aneurysms developed over 10 years in one patient (case 2).

It has recently been shown that patients with autosomal dominant polycystic kidney disease from families with a history of subarachnoid haemorrhage are at higher risk of intracranial aneurysm than those without a family history, and routine screening in such patients is advocated.[2,3] In addition, regular screening should be offered to patients after an intracranial aneurysm has ruptured as they are probably at high risk of developing further aneurysms.

Interestingly, two of our three patients progressed rapidly to end stage renal failure, as did some of their relations, requiring regular haemodialysis before the age of 40. This occurs in only about 5% of patients with autosomal dominant polycystic kidney disease and end stage renal failure.[4] Intracranial aneurysm may be associated with rapid progression to end stage renal failure in a subset of patients with the disease. Further study is required to test this hypothesis and to define the most appropriate imaging procedure for screening for aneurysms, the optimal age at which screening should be started, and the best programme for repeated investigation in high risk patients with autosomal dominant polycystic kidney disease.[5]

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Prevalence of Dupuytren's contracture in patients infected with HIV

P D French, V S Kitchen, J R W Harris

Department of Genitourinary Medicine, St Mary's Hospital, London W2 1NY
P D French, MRCP, *registrar*
V S Kitchen, MRCP, *senior registrar*
J R W Harris, FRCP, *consultant*

Correspondence to:
Dr P D French, Department of Genitourinary Medicine, James Pringle House, Middlesex Hospital, London W1N 8AA.

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An increased prevalence of Dupuytren's contracture has been reported among patients infected with HIV.[1] We had not been aware of a high prevalence among our patients and therefore determined the prevalence among the patients attending our clinic.

Patients, methods, and results

Fifty consecutive patients attending the genitourinary medicine clinic at this hospital who fulfilled the Centers for Disease Control's diagnostic criteria for AIDS[2] were assessed for Dupuytren's contractures. Contractures were diagnosed only if both examiners agreed that they were present. Factors associated with the development of Dupuytren's contractures were sought, including a history of diabetes, alcohol misuse, heavy mechanical labour, and taking hepatotoxic drugs.

The patients were all men aged 23 to 56. Thirty two patients had opportunistic infections, six Kaposi's sarcoma alone, and 12 Kaposi's sarcoma and an opportunistic infection. Only three patients had Dupuytren's contractures. The contracture was unilateral in each case with no fixed flexion deformity of the finger. One of these three patients had dementia related to HIV infection and gave a history of severe alcohol misuse (about 100 units of alcohol a week for over four years). The second patient had cutaneous Kaposi's sarcoma as well as an eight year history of chronic active hepatitis. The third patient gave a history of retinitis caused by cytomegalovirus and pneumocystis pneumonia but had no underlying recognised cause of Dupuytren's contractures.

Comment

The prevalence of Dupuytren's contractures in our patients, who were positive for antibody to HIV-I, was 6%. This is similar to the prevalence in the population at large (4·6-5·0%).[3] It is appreciably different from the 36% reported by Bower *et al* in their group of patients who were positive for antibody to HIV-I.[1] It may be argued that the patients attending our clinic had less advanced disease than those in the previous survey, which was of inpatients. All our patients, however, had AIDS, and all except four had been admitted to hospital at least once with conditions related to HIV infection.

Clearly, our results are appreciably different from those of Bower *et al* and further studies are needed to determine the true prevalence and importance of Dupuytren's contracture in patients with HIV infection.

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