Details of patients positive for ANF

Case No	ANF staining pattern	Sex	Age	Length of time on lithium	Serum lithium (mmol/l)	Other drugs	Clinical side effects
1*	Weak	F	53	3 years	0·6	Imipramine, chlorpromazine	None
2	Weak	F	60	4 years	0·5	Clomipramine	None
3	Weak	F	52	7 months	0·8	Trifluperazine, chlorpromazine	None
4*	Weak	F	62	6 months	1·1	None	Bruising
5	Homogeneous	M	60	2½ years	0·8	Clomipramine	None
6	Homogeneous	M	51	2 months	0·4	None	None
7	Homogeneous	F	27	11 months	1·0	Clomipramine	Bruising
8	Nucleolar	F	63	8 months	0·75	Imipramine	None
9	Peripheral	M	60	8 months	0·7	Imipramine	None
10	Speckled	F	57	1 year	0·8	Chlorpromazine, amitryptiline	True SLE
11	Homogeneous	F	52	2 years	0·9	Haloperidol	None

*These patients reverted to being negative for ANF and were therefore excluded from statistics.
Conversion: SI to traditional units—Lithium: 1 mmol/l ≈ 6·95 mg/l.

antibodies in the patient taking lithium was twice the incidence in the control group.

Comment

No cases of ANF or SLE in patients on lithium carbonate have been reported to the Committee on Safety of Medicines or the Adverse Drug Reaction Information Service.[5] Our findings indicate an 18% incidence of this phenomenon in lithium takers. The absence of anti-DNA antibodies in these patients indicates that they did not have true SLE. The management of these asymptomatic patients with abnormal immunological test results is difficult, since in many cases a change of treatment is not practicable and serious disabilities may develop[1] from drug-induced SLE reactions. In view of the length of clinically uncomplicated lithium treatment, the drug was not stopped in these patients but scrutiny continued.

The incidence of parietal cell antibodies may have clinical relevance in view of the gastrointestinal symptoms lithium carbonate produces.

This controlled study confirms the initial observation that antinuclear antibodies are more common in patients taking lithium carbonate than in controls. Patients ingesting this drug may be at risk.

We thank the consultants and nursing staff of the Midland Nerve Hospital for allowing us to study their patients, and Sister Quinton for her help in collecting blood samples.

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Ocular involvement in cytomegalovirus infection in a previously healthy adult

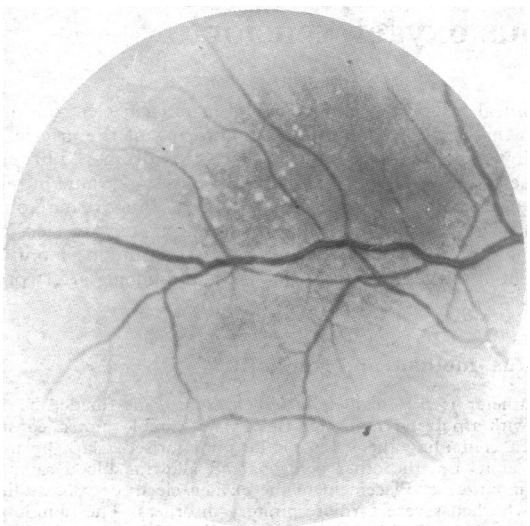
Although common in infancy, infection with cytomegaloviruses (CMV) causing chorioretinitis has been reported in only six adults.[1 2] In each case the patient had a debilitating disease and was receiving either steroids or cytotoxic drugs. We describe here a previously healthy adult who developed CMV infection complicated by severe ocular involvement.

Case report

A 39-year-old previously healthy woman presented in November 1975 with a two-week history of generalised malaise, bilateral loin pain, urinary frequency, and nocturia without dysuria associated with rigors, anorexia, and weight loss. She had noticed discoloration of her urine, and her symptoms had failed to respond to treatment with co-trimoxazole and then ampicillin.

On examination she was feverish (38°C) with abdominal tenderness. Fundoscopy showed nothing abnormal. Investigations showed: white blood count $6·8 \times 10^9$/l (6800/mm³) with 23% neutrophils, 66% lymphocytes, and 7% atypical lymphocytes. There was mild hyponatraemia (serum sodium 129 mmol/l (296 mg/100 ml)) and considerable derangement of liver function with bilirubin 17 mol/l (1·0 mg/100 ml), alkaline phosphatase 203 U/l (normal 20-85 U/l), Lactate dehydrogenase 1666 IU/l (normal 72-395 IU/l), serum aspartate aminotransferase 150 U/l (normal 9-43 U/l), and serum alanine aminotransferase 163 U/l (normal 5-41 U/l). Total proteins were 69 g/l (normal 60-80 g/l), albumin 46% (normal 57-68%), and λ-globulin 20% (normal 9·8-18·2%). Chest *x*-ray pictures and intravenous pyelogram were normal. The following investigations also gave negative results: repeated culture of urine and blood; Paul-Bunnell, Monospot, and HA antigen test on several occasions; paired serology for Epstein-Barr virus, toxoplasmosis, mycoplasmal infection, brucellosis, salmonellosis, leptospirosis, syphilis, and herpes simplex; and urinary viral studies. A diagnosis of acute CMV infection was established by serial complement-fixing antibody tests, the titres rising from 1/16 two weeks after the onset of illness (on admission) to 1/256 at three weeks, 1/512 at four weeks, and falling to 1/128 at 10 weeks.

After admission she had several further rigors and after four days developed a generalised maculopapular rash attributed to ampicillin. This settled and within a week she was apyrexial though her severe generalised malaise persisted. After four weeks she complained of deteriorating vision. Repeat fundoscopy showed a pin-point chorioretinitis mainly along the retinal veins with macula sparing, accompanied by irregular sheathing of adjacent blood vessels (see figure). A keratoconjunctivitis sicca with superficial punctate keratitis was also discovered. When last reviewed in February 1976, she was still tired and lethargic and had persisting visual symptoms



Pin-point chorioretinitis and irregular sheathing.

and signs. Haematological values and liver enzyme values had reverted to normal, but the bilirubin level remained raised at 22 μmol/l (1·3 mg/100 ml).

Discussion

CMV infection either causes a focal process limited to salivary glands or intestinal or respiratory tract or presents as generalised cytomegalic inclusion disease. Although CMV antibodies are often acquired during adult life, the generalised form is very seldom recognised in adults except as a complication of debilitating diseases, cytotoxic drugs, or blood transfusion. It may, however, present as a Paul-Bunnell negative form of glandular fever. The clinical course is usually that of a benign pyrexial illness lasting two to six weeks and associated with peripheral blood mononucleosis and abnormal liver function test results without significant lymphadenopathy or exudative pharyngitis.[3] Although rare, the fundal appearance in adult CMV chorioretinitis may be distinctive, as in this patient. The lesions progress through the healing stage punctate chorioretinal scarring, and the condition may take a fulminating course if the patient is receiving systemic steroids.[1] The other ocular changes that she developed have been described previously on rare occasions.[4]

This report describes the first previously healthy adult to be afflicted with CMV chorioretinitis. She probably developed her severe illness because, as a hospital-based teacher, she was often in close contact with chronically sick children, from whom CMV can be readily isolated.[5] The possibility of CMV infection should always be considered in previously healthy adults presenting with a pyrexial illness who had been exposed to similar risk.

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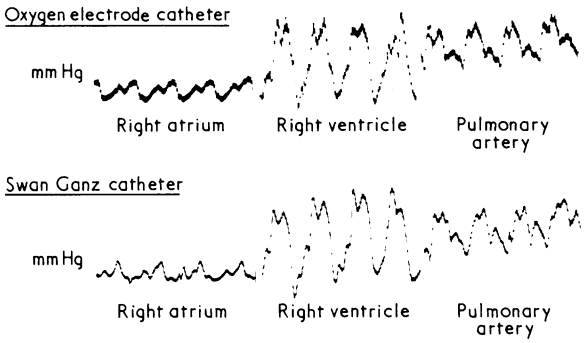
Continuous monitoring of mixed venous oxygen tension

An umbilical artery catheter carrying an oxygen electrode mounted at its tip[1] has enabled continuous monitoring of the arterial oxygen tension in infants with respiratory distress syndrome.[2] This electrode when inserted into the adult radial artery is also of value in managing patients undergoing one-lung ventilation.[3] We report here our initial experiences in flow guiding this catheter and its oxygen electrode into the pulmonary artery, thereby permitting continuous monitoring of mixed venous oxygen (MVO_2) tension and pulmonary artery pressures.

Apparatus, method, and results

The catheter is 5 F diameter, 100 cm long, and made of polyvinyl chloride with a polystyrene-coated tip. It is of double lumen construction, one lumen containing the wires to the miniaturised Clark polarographic electrode at its tip, the other being patent, allowing blood sampling and pressure monitoring. Placement of the oxygen electrode was studied in 10 patients who had severe cardiorespiratory disorders. The sampling lumen of the catheter was filled with heparinised saline. Using a sterile technique it was inserted percutaneously through a 14-gauge needle into a basilic or internal jugular vein and then advanced into the pulmonary artery. Catheter tip pressure was monitored with an Elcomatic transducer, oscilloscope, and writer. The electrocardiogram was monitored throughout and a chest *x*-ray picture was taken to confirm correct positioning of the catheter tip. While in situ the catheter was continuously flushed with heparinised saline using a Flotrol device.

In all patients the catheter recorded a satisfactory series of pressure traces so that there was no doubt about the position of the catheter tip. Placement into the pulmonary artery was achieved in nine patients within one minute of its arrival in the right atrium and in one patient after five minutes. Occasional isolated ventricular ectopics were seen during the passage of the catheter through the right ventricle. In one patient the catheter dropped back in to the right ventricle when she was turned into the lateral position and in two other patients the same thing happened spontaneously after three and 12 hours. In the remaining seven patients the catheter remained in the pulmonary artery until removed after 12-24 hours. The figure shows the pressure traces obtained with the oxygen electrode catheter and a 5 F Swan Ganz catheter recorded serially in the same patient using identical signal amplification. The oxygen electrode was calibrated by conventional blood gas analysis of blood samples obtained via the catheter using an Instrumentation Laboratories 313 blood gas analyser. Stable recordings were always achieved within 30 minutes of insertion. Accuracy of the electrode and lack of drift were confirmed by repeat sample blood gas analysis.



Pressure traces obtained in patient with oxygen electrode catheter and Swan Ganz flow directed catheter, recorded serially and using same signal amplification.

Discussion

Oxyhaemoglobin saturation depends on the shape of the oxyhaemoglobin dissociation curve and the haemoglobin affinity for oxygen, the latter varying with pH, $Paco_2$, temperature, and 2-3 diphosphoglyceric acid level. Several investigators[1 5] have confirmed the value of MVO_2 saturation and tension as indices of deteriorating cardiac output and tissue oxygenation. With the aid of this commercially available oxygen electrode the MVO_2 tension can be continuously monitored.

Interpreting the MVO_2 tension can be difficult. For instance, a fall in MVO_2 tension in a patient with Gram-negative septicaemia would indicate a deterioration of respiratory function or cardiac output or an improvement in tissue oxygen uptake. A clinical evaluation of this catheter is now in progress.

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