antisocial, and had intellectual difficulties. A psychotherapist she saw regularly diagnosed a narcissistic personality disorder. After four years of self bleeding she stopped for one year, and her haemoglobin concentration became 120-130 g/l.

Comment

Our patients had typical features of factitious disease,^{1,2} three of them developing anorexia nervosa. They had been bleeding themselves for four to 11 years and were well adapted to severe chronic anaemia with haemoglobin concentrations rarely above 60 g/l. Their physical fitness was remarkable, and, notably, they tailored their bleeding such that it did not jeopardise an active life.

Although our patients showed little overt psychopathological behaviour, all had a borderline personality disorder.³ Psychotherapy seems to be of little value in such disorders, and only one patient with factitious anaemia has been successfully treated with psychotherapy.⁴ Nevertheless, such patients should be offered regular medical and psychiatric care; psychiatric consultation at an early stage in somatisation disorders reduces the costs of health care considerably, although it does not improve mental, physical, or social health.⁵ Similarly, our patients appreciated regular meetings with doctors or psychotherapists to discuss their problems, although such meetings did not result in a cure.

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Fatal cardiac failure due to myocardial microthrombi in systemic lupus erythematosus

Systemic lupus erythematosus has a variable clinical presentation and a high mortality. We report on a patient with the condition whose death was caused by acute circulatory failure resulting from diffuse thrombotic occlusion of the myocardial microcirculation.

Case report

A 22 year old woman with a six month history of "poor circulation" and exertional dyspnoea was admitted to hospital because of digital ischaemia. Examination showed lip ulceration, cervical lymphadenopathy, and vasculitic lesions on her hands and feet. She had a sinus tachycardia of 110 beats/minute, blood pressure of 130/100 mm Hg, and an apical mid-diastolic murmur.

Investigations showed that the haemoglobin concentration was 121 g/l, white cell count $24.2 \times 10^9/l$, platelets $77 \times 10^9/l$, blood urea 13.8 mmol/l, and serum creatinine 135 $\mu\text{mol/l}$. Dipstick testing of urine for blood and protein yielded positive results, and red cell casts were seen on microscopy. An electrocardiogram showed generalised S-T segment depression of 1 mm, and a chest x ray film showed slight cardiomegaly with no pulmonary congestion. Echocardiography confirmed a moderately severe mitral stenosis. The left atrium, right atrium, and right ventricle were enlarged, but the left ventricle was of normal size. Serum titres of antinuclear antibody were 1/640 (IgG) and 1/80 (IgM), and the concentration of antibody to double stranded DNA was 80 units/ml (normal range 0-25). Serum was strongly positive for IgG and weakly positive for IgM anticardiolipin antibodies on enzyme linked immunosorbent assay (ELISA) with Loizou's method. Serum C3 concentration was 0.58 g/l (normal range 0.75-1.50). A coagulation screen was within normal limits; the test for lupus anticoagulant was not done.

Her condition deteriorated with confusion, oliguria, and rising blood urea concentrations. Aggressive systemic lupus erythematosus was diagnosed and methylprednisolone and cyclophosphamide started, the intention being to start plasma exchange and dialysis the next day. Within 24 hours, however, she developed profound hypotension and peripheral circulatory failure and died.

At necropsy the kidneys showed focal glomerulosclerosis, proliferative glomerulonephritis, and a superimposed necrotising glomerulitis. The glomerulitis was related to afferent arteriole microthrombi and to fibrinoid vasculitis, which was also present in the lungs, liver, and pancreas. No abnormality of the brain was seen and no source of infection found. There was moderately severe mitral stenosis with fusion of the valve cusps due to warty, erythematous endocardial nodules. Aggregates of fibrin, inflammatory cells, and DNA debris were attached to the valve surface and adjacent endocardium. The main coronary arteries were mildly atheromatous. Many of the intramyocardial arteries contained occlusive thrombi unaccompanied by vasculitis but surrounded by extensive recent myocardial necrosis.

The findings at necropsy were consistent with systemic lupus erythematosus but also showed mitral stenosis caused by Libman-Sacks endocarditis. Death resulted from diffuse acute myocardial necrosis due to extensive thrombi in the microvasculature.

Comment

Though renal failure is one of the major causes of death in systemic lupus erythematosus and our patient had severe lupus nephritis, the degree of uraemia would not explain the fatal circulatory failure. There was no evidence of overwhelming infection, of lupus in the cerebrum, or of appreciable atheroma in the large vessels. Libman-Sacks endocarditis rarely causes severe valvular dysfunction, although isolated reports have documented mitral regurgitation and combined stenosis and regurgitation similar to that in our patient.² In our case, however, there was no clinical or radiological evidence of pulmonary oedema or central cyanosis, and the mitral stenosis is thus unlikely to have led to the fatal circulatory failure.

Death from fulminant cardiac necrosis resulting from thrombotic occlusion of the myocardial microcirculation has not been described previously.^{1,3} Circulating antiphospholipid antibody may have played a part, as the lupus anticoagulant has been associated with arterial and venous thromboses.⁴ Thus thrombolytic or fibrinolytic treatment, or both, might be beneficial. Kant has reported resolution of microvascular thrombosis in patients with systemic lupus erythematosus treated by anecrod, the defibrinogenating enzyme obtained from the venom of the Malayan pit viper.⁵

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Effect of low dose heparin on blood loss at caesarean section

There is good evidence for the efficacy of low dose heparin in preventing venous thrombosis and pulmonary embolism after surgery,¹ but prophylactic heparin is not usually given before caesarean section. The main reason is the fear of increasing the amount of bleeding in an operation which has a high operative blood loss, but there is also the difficulty of predicting the effect of heparin in pregnancy, where the coagulation mechanism may already be disturbed. We decided to measure the effect of heparin on blood loss during caesarean section.

Patients, methods, and results

Fifty patients were given a subcutaneous injection of either 5000 units of sodium heparin or isotonic saline one hour before the operation and similar injections twice daily for five days after the operation. There were no significant differences in age, parity, blood pressure, height, weight, and gestation between the two groups. Patients were excluded from the study if they had a placenta praevia, multiple pregnancy, pregnancy induced hypertension, antepartum

haemorrhage, a history of thromboembolic disease, coagulation disorders, or peptic ulceration. Twenty five patients, 11 of whom received heparin, chose general anaesthesia, and the remainder, 14 of whom received heparin, chose epidural blocks. Haemoglobin estimations and coagulation studies were carried out before operation and on days 1, 3, and 6 after operation. Operative blood loss was measured by washing all blood stained items collected at operation and for 24 h thereafter in 40 litres of cold water. The loss in the Redivac drain was included. The blood volume was calculated by proportion from the wash using the preoperative haemoglobin value.²

The mean blood loss was 712 ml in the saline group and 667 ml in the heparin group (table). This difference was not significant ($p>0.2$). The mean (SD) postoperative haemoglobin value was 112 (11.8) g/l in the saline group and 114 (11.9) g/l in the heparin group. The difference was not significant ($p>0.05$). Only two patients required a transfusion and both were in the saline group. Two patients, one from each group, showed abnormalities of plasma clotting factors. Twenty three, 11 from the heparin group, showed intermittent defects of platelet function. The blood loss of these patients, however, was not significantly different ($p>0.05$). Injections caused only minor discomfort and there were no serious wound haematomas. There were no cases of thromboembolism.

Amount of blood loss during caesarean section by 25 patients given saline and 25 given heparin

Blood loss (ml)	Saline	Heparin
<500	6	9
500-1000	16	13
1000-1500	2	1
1500-2000	1	2
Total	25	25

Comment

This study showed no significant difference in the blood loss at elective caesarean section or in the puerperium when heparin was administered. The mean loss of 689 ml was lower than that previously reported. Pritchard *et al* found a mean loss of 930 ml using radioactively labelled red blood cells to estimate blood volume changes after caesarean section.³ We accounted for all the actual blood lost. Nevertheless, six of our patients, three from each group, lost over 1000 ml. The greatest loss in the heparin group was 1874 ml, that in the saline group 1773 ml. In both these cases the operations were technically difficult. There were no coagulation abnormalities in these patients.

The effects of local anaesthetics on platelet function are well documented,⁴ but we found that the platelet abnormalities were evenly split between both general and local anaesthetic groups and there were no differences in blood loss between these two groups. Despite heparin treatment, there were no haematomas in the epidural group.

In the 1979-81 confidential inquiry into maternal deaths 28 deaths were caused by pulmonary embolism, which made this the second commonest cause of maternal death overall and the third most common in caesarean section.⁵ Fatal pulmonary embolism is 16 times more common after a caesarean section than after a vaginal delivery. We therefore advocate the use of heparin in elective caesarean sections in all patients, not just when risk factors for thromboembolism are identified.

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A nursing career for people with diabetes

Reports have suggested that students with diabetes may have problems in gaining acceptance for training by schools of nursing.^{1,2} To see whether there was any discrimination against applicants with diabetes the British Diabetic Association carried out a postal questionnaire survey in March 1987. This paper presents the results.

Methods and results

A complete list of schools of nursing was obtained from the hospital year book—that is, comprising 213 centres in Great Britain. Questionnaires were sent to the directors of nurse education at all centres. The questionnaire consisted of a general section and a medical section. The general section examined the number of applicants for nurse training and the criteria for selection. The medical questions concentrated on applicants with diabetes.

The initial mailing yielded a response from 144 centres, a second questionnaire sent two months later returned a further 41 replies, and a final letter yielded 17 replies. This gave a total response rate of 95%. Questionnaires were completed for only 186 centres; reasons for non-completion included being too busy, no longer trained nurses, and three schools stated that they considered everyone whether diabetic or not.

Centres were asked how many applicants were diabetic in the previous year, how many had been refused, and on what grounds. A total of 40 centres had had no applicants with diabetes and 68 schools did not know, the information being kept confidential or known only to the occupational health department. A total of 77 centres had had people with diabetes apply and 17 of these had refused applicants with the disease; half of these refusals were on medical grounds. Of those centres that had refused an applicant with diabetes in the previous year, five had experienced problems with diabetic students in the past and five considered that special provision was necessary, such as regular medical appointments and adjustments to shifts. If applicants were rejected on medical grounds over one third of schools stated that a second opinion could be obtained. Fourteen schools stated that if instability was the problem, the student could apply at a later date once stabilised. In the case of diabetes of recent onset delay in reapplying would be necessary until the diabetes was under control.

A report was obtained from the diabetic applicant's medical adviser in just under two thirds of centres and 26 centres required a report only in some cases—for example, when there was concern about stability or the medical history or there were complications.

Five centres stated that there were no factors which would lead them to refuse a diabetic person for nurse training whereas 113 of centres would refuse students with unstable disease or those with poor control of hypoglycaemic attacks. The table lists other reasons for refusing a diabetic applicant for training; more than one reason could be given for refusing a student.

Reasons for refusing an applicant with diabetes

	No (%) of centres
No reason to refuse	5 (3)
Unstable diabetes; poor control of hypoglycaemic attacks	113 (61)
Advice from occupational health department or consultant in charge	34 (18)
Severe complications	30 (16)
Unfavourable sickness record	19 (10)
Same as for other applicants (poor references, insufficient O levels, etc)	18 (10)
Insulin dependent diabetes of recent onset	13 (7)
Lack of responsible attitude to diabetes	8 (4)
Shifts/diet	4 (2)
Diabetic problems in adolescence	3 (2)
Other health problems	2 (1)
Overweight	2 (1)

All centres expected trainees with diabetes to undertake every aspect of training but 60 considered that they needed to make some special provision, which included arrangements to allow attendance at medical appointments (31), adjustment or advice on shifts (13), or provision of extra support within the department (17). One centre would not allow time off for medical appointments, as it considered that these could be fitted in off duty time.

There had been problems with diabetic students in the past in 50 schools. Though minor hypoglycaemic attacks were mentioned in 11 schools, they were not thought to be a serious problem. Inability to cope with diabetes was mentioned in five, unfavourable health record in nine, inability to cope with shifts in nine, problems with complications in four, and four reported problems not due to diabetes but related to the age group, alcohol consumption, and drug consumption. Information was regarded as confidential in seven cases.

Comment

In view of the good response rate achieved we consider that this study represented the views of nearly all the nurse training centres in the United Kingdom. No school of nursing appeared to be overtly discriminatory.