Lesson of the Week

Fungal endocarditis in a patient with acute leukaemia treated by valve replacement

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Advances in the treatment of acute lymphoblastic leukaemia have led to a remission rate of 78% for two years.¹ Because of this improved prognosis major surgical procedures are now justified. We report on a patient with acute lymphoblastic leukaemia complicated by endocarditis who was successfully treated by emergency replacement of the aortic and mitral valves.

Acute leukaemia is not a contraindication to major cardiac surgery

Case report

A 32-year-old West Indian woman with acute lymphoblastic leukaemia received induction chemotherapy with doxorubicin, vincristine, prednisolone, and asparaginase. Ten weeks after the diagnosis had been made, while in remission, she suddenly became short of breath. The haemoglobin concentration had fallen to 7.8 g/dl from 12 g/dl over seven days. On examination by auscultation new murmurs of mitral and aortic regurgitation were heard. Over 24 hours her blood pressure fell from 120/80 mm Hg to 85/55 mm Hg, and there were signs of congestive cardiac failure with basal crepitations, a jugular venous pressure of 3 cm, and pulmonary oedema on the chest x-ray film. The sudden loss of her right radial pulse and recurrent transient ischaemic attacks suggested systemic embolisation.

A two-dimensional echocardiogram (figure) showed a large vegetation on the aortic valve and small vegetations on the mitral valve. Left ventricular function was not obviously impaired. *Candida guilliermondii* was isolated from blood cultures. Because of her clinical deterioration and the echocardiographic findings, the aortic and mitral valves were replaced without further investigation. The aortic valve had been destroyed by a large fungal vegetation, which had also eroded the anterior cusp of the mitral valve. The aortic and mitral valves were replaced with heterografts, though it was difficult to anchor the sutures through the friable and oedematous cardiac muscle.

After 12 hours of inotropic support with dopamine she made

Two-dimensional echocardiogram of the patient's heart, showing a large vegetation on the aortic valve (AV) and small vegetations on the mitral valve.

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a rapid recovery. Infection with *C guilliermondii* was confirmed by histology and culture of the vegetations. After operation she was given amphotericin B intravenously, 50 mg on alternate days up to a total dose of 1125 mg, and 5-fluorocytosine 6 g daily for six months.

Two years later she was well and still in first remission from leukaemia. Repeat echocardiographic examination showed no

vegetations. Cardiac catheterisation showed good left ventricular function and fully competent aortic and mitral valves.

Comment

Candidal endocarditis rarely responds to medical treatment alone.²⁻⁴ Uttley *et al*⁵ reported excellent results by removing the infected valve and giving systemic antifungal treatment, and this is now the preferred approach. Patients with acute lymphoblastic leukaemia now have a good prognosis because of modern chemotherapy; therefore if there is a need for major surgery, it should be considered.

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Contemporary Themes

How effective are our child health clinics?

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Child health clinics have their origins in the child welfare movement that began at the end of the nineteenth century and gained official recognition in the Maternal and Child Welfare Act of 1918. With the establishment of the National Health Service in 1946, local authorities were given the responsibility to provide this service to nursing mothers and their children. The reorganisation of the NHS in 1974 placed responsibility for child health clinics in the hands of area health authorities with the intention to promote a better integrated service. With the changing pattern of childhood problems the Sheldon Report¹ in 1967 and the more recent Court Report² in 1976 reviewed child health services and came to similar conclusions. Both reports recommended that present-day needs of children and their families could best be met by an integrated system of comprehensive primary care based on general practice. The Court Report recommended a scheme for continued child health surveillance within this framework, based on periodic examinations by doctors and health visitors.

Child health surveillance is now a widely established part of primary paediatric care even though there has been inadequate evaluation of the cost effectiveness of this form of practice. It must be acknowledged, therefore, that practice in this subject is based on a consensus of what it is thought ought to be done and not on what has been shown to be effective or of value.

While I was paediatrician to a child health clinic the opportunity arose to evaluate the work of the clinic doctor by surveying all children seen during two periods in the year. The objectives were to assess the range of problems seen in the clinic, to determine what proportion of these were previously unidentified, and to what extent the clinic might be duplicating the service provided by the childrens' own general practitioner or hospital outpatient department.

Patients and methods

The clinic is in an inner city area designated by the Nottinghamshire County deprivation study³ as a deprived area with a high infant patient load. The health visitors working in the clinic visit the home of every newborn baby notified to them. Parents are informed of the services provided at the clinic and are encouraged to bring their child for a routine examination at six weeks, six, 12, and 18 months, two years, and annually thereafter until they go to school. Children are seen at any other times at the request of their parents or health visitor.

The survey was conducted in two separate periods, each consisting of 12 consecutive clinic sessions, in which I was the examining doctor. The first period was January to March 1980 and the second, six months later, September to October. The two periods reflected seasonal variation in the prevalence of disease.

The following information was recorded on every child included in the survey.

(a) Reason for consultation as given by the accompanying adult, who was usually a parent.

(b) Any problems or abnormalities already known to exist in the child.

(c) Whether the general practitioner had been consulted about this problem or was the child currently attending an outpatient service for the problem.

Routine history taking and examination for physical and developmental abnormality were carried out at the appropriate ages. On other occasions the history and examination centred on presenting complaints. In January 1981 the clinic records of all children seen were reviewed to assess their subsequent progress. In selected cases the hospital records were reviewed as well.

Results

Table I gives the reasons for attendance in the 447 children seen during the survey.

ROUTINE EXAMINATIONS

Out of the 252 children seen for a routine examination, 43 were identified as having a problem, the remaining 209 children were normal. Most (88.1%) of these children were 2 years of age or younger,

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