Recurrent infective endocarditis

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Summary: Infective endocarditis is a serious disease associated with high mortality. Patients surviving recurrent bouts of infective endocarditis are reported infrequently. We report on a non-drug abuser patient who experienced seven episodes of infective endocarditis – the largest number reported to our knowledge in a single non-drug abuser patient.

Introduction

With the improved prognosis of infective endocarditis, increasing numbers of patients who have survived the initial episode create a new population at risk for recurrent episodes. However, since the mortality of recurrent infective endocarditis is significantly higher than that of the initial infection,¹ only few patients who survive more than three bouts have been described.^{2–4}

We report a patient with no history of drug abuse, who has survived seven episodes of infective endocarditis.

Case report

A 65 year old man was admitted to our department with a fever of 2 month's duration, chills and fatigue. His past history was remarkable for rheumatic heart disease with mild aortic regurgitation of some 30 years' standing. Physical examination revealed: temperature, 38°C, a 3/6 decrescendo diastolic murmur along the left sternal border and cardiac apex, a 1/6 holosystolic murmur at the cardiac apex and mild splenomegaly. Laboratory tests demonstrated an erythrocyte sedimentation rate of 70 mm after one hour, haemoglobin – 10.5 g/dl and white cell count of 29,000 per litre with 70% neutrophils. A chest X-ray demonstrated moderate pulmonary venous congestion. Echocardiography showed aortic valve vegetation, severe aortic regurgitation and left ventricular dilatation. Blood cultures were positive for *Streptococcus viridans*.

The patient was treated with penicillin and gentamicin. One week following institution of

therapy, the patient developed severe heart failure which did not respond to medical therapy, a splenic infarct and a new left bundle branch block. Emergency open heart surgery was performed revealing extensive aortic valve vegetation, necrosis of the right aortic leaflet and an interventricular septal abscess. Debridement and replacement of the aortic valve with a St Jude prosthesis was performed. No murmurs were evident on cardiac examination. The antibiotic course was continued for 6 weeks following surgery.

The patient remained in good health for one month, when progressive dyspnoea and pedal oedema developed. On readmission with a temperature of 39.5°C, the patient was cachectic and in respiratory distress. Peripheral oedema, splinter haemorrhages, a new 3/6 diastolic murmur along the left sternal border and hepatosplenomegaly were noted. A chest X-ray demonstrated prominent pulmonary venous congestion. Blood and urinary cultures were positive for *Candida albicans*.

Following administration of intravenous amphotericin B, open heart surgery was performed. Fungal vegetation was found on the prosthetic valve, causing its dehiscence and leading to a severe paravalvular leak and a pseudoaneurysm of the interventricular septum. The post-operative course, following replacement of the valve, was remarkable for antibiotic-induced nephrotoxicity, as well as a complete atrio-ventricular block, which was controlled by the instalment of a permanent pacemaker. After this bout, the subject was readmitted five times with symptoms and findings of recurrent infective endocarditis. The results of Mantoux test and protein immunoglobulin estimation performed during the third episode of endocarditis were normal (IgG 1,800 mg/dl, IgM 100 mg/dl, IgA 160 mg/dl). Col-

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onoscopy performed during his fifth hospitalization demonstrated the presence of polyps and blood cultures were positive for *Streptococcus bovis* (Table I). Significant side effects, attributable to antibiotic therapy, were evident in all the episodes. The patient, who survived six bouts of recurrent infective endocarditis, was hospitalized for a total of 294 days over a 5 year period, and is presently in hospital for the seventh time. Between episodes of

infective endocarditis, the patient suffered grade IV heart failure, precluding surgical intervention for the colonic polyps.

As shown in Table I, in between two episodes of *Streptococcus bovis* endocarditis (fifth and seventh hospitalizations), the subject experienced a bout of *Staphylococcus aureus* endocarditis, but no focus was found.

Table I Clinical characteristics and therapy of recurrent episodes of infective endocarditis

Epi- sode no.	Date of hospital- ization	Complaints (duration, weeks)	Relevant findings on physical examination	Echocardio- graphy finding of vegetations	Micro- biological features	Treatment	Compli- cations	Length of hospital stay (days)
1	9/86	Fever, fatigue (8)	Splenomegaly	Aortic valve	<i>Strepto- coccus viridans</i>	Penicillin, gentamicin, valve re- placement	Splenic infarct, left bundle branch block	67
2	2/87	Fever, shortness of breath (2)	New murmur, signs of con- gestive heart failure, hepatosplen- omegaly, splinter haemorrhages	No	<i>Candida albicans</i>	Ampho- terecine, valve replacement	Trifascicular block, deterioration of renal function	54
3	7/88	Fever, shortness of breath, peripheral oedema (1 day)	Pulmonary oedema, splinter haemorrhages	Aortic valve	Culture negative	Vancomycin, gentamicin	Deterioration of renal function	28
4	11/89	Fever (1)	Mucosal petechia, splinter haemorrhages, hepatomegaly, signs of congestive heart failure	Aortic valve	<i>Strepto- coccus fecalis</i>	Ampicillin, gentamicin		41
5	4/91	Fever, shortness of breath, peripheral oedema (4)	Splinter haemorrhages, signs of congestive heart failure, hepatomegaly	Two vegetations on aortic valve	<i>Strepto- coccus bovis</i> *	Penicillin	Bleeding tendency, thrombocyto- penia	56
6	7/91	Fever, shortness of breath (3 days)	Signs of congestive heart failure, conjunctival haemorrhages	Aortic valve	<i>Staphylo- coccus aureus</i>	Cloxacillin	Interstitial nephritis	48
7	6/92	Fever, malaise, diarrhoea (1)	New murmur, splinter haemorrhages	Subvalvular aortic vegetation	<i>Strepto- coccus bovis</i>	Penicillin	Thrombo- cytopathia	Presently hospital- ized

*Colonoscopic examination revealed colonic polyps.

Discussion

We describe a non-drug abuser who experienced seven episodes of endocarditis. Recurrent endocarditis is defined as repeated episodes of endocardial infection separated by intervals of at least 6 months or caused by different microorganisms.⁵ In the patient described, all the episodes were compatible with the strict definition of infective endocarditis proposed by Von Reyn *et al.*⁴ To the best of our knowledge, only few cases with similar or greater number of recurrences have been reported in the medical literature.²⁻⁴ Von Reyn and his associates, Mokotoff and his coworkers² and Simonson and his group each documented a patient who had undergone six or more episodes of recurrent infective endocarditis. All three patients were drug abusers.

Although the number of patients with recurrent infective endocarditis is on the rise as a result of improved treatment, only three studies have dealt with the unique features of this recurrent disease.^{1,5,6} It has been found that underlying

abnormalities in cardiac structure and active intravenous drug abuse are associated with increased risk of recurrent infective endocarditis, with a greater propensity among males.^{1,6} The valvular location of the infective process and the distribution of causative microorganisms are similar in both initial and recurrent episodes. Failure to eradicate a local nidus of bacteria (that is, verrucae or colonic polyp leading to increased mucosal permeability) may be responsible for recurrent infective endocarditis caused by the same microorganism. It is not clear why in some people recurrent episodes of infective endocarditis are caused by different microorganisms. Recurrent infective endocarditis is associated with a mortality rate of 25%, as compared with 9% in initial episodes.¹

Prolonged survival of patients with recurrent infective endocarditis is attributable to intense workups and early institution of antimicrobial treatment, as well as prompt surgical intervention. Intense therapy is not devoid of severe side effects, however, as is clearly demonstrated in our patient.

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Intestinal prolapse through the vagina

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Summary: We describe the case of a 68-year-old woman who presented with an acute onset spontaneous vaginal vault rupture and intestinal prolapse through the vagina. Results of a literature survey are presented and the causes of vaginal vault rupture are discussed.

Introduction

Although vault prolapse and enterocele are known complications of vaginal hysterectomy, acute spontaneous vault rupture with small bowel prolapse is extremely rare.

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