LETTERS TO THE EDITOR

Native valve endocarditis and vertebral osteomyelitis caused by Staphylococcus epidermidis

To the Editor: Coagulase-negative staphylococci commonly cause prosthetic valve endocarditis, and septicaemia in patients with indwelling venous catheters. In one in five such infections, Staphylococcus epidermidis was isolated, which may be a cause of infection outside this setting. However, the multiple isolation of the same species of coagulase-negative staphylococci from blood cultures should be regarded as significant, especially when endocarditis is suspected. 1

A 66-year-old man was admitted to hospital in 1990 for the investigation of abdominal pain, headache, and chronic lower back pain. He had hypertension but no other known cardiovascular disease. Gastricopy accounts for weeks before admission had revealed no apparent cause to his symptoms. He had been discharged twice weeks before admission.

No abnormality was detected on the initial examination, and a full blood count, biochemistry and liver function tests gave normal results.

On Day 11 of the admission the patient complained of dysuria and was noted to have a temperature of 38.60C. A new pansystolic murmur was noted, known to be prominent and basilar. Nitrazoxin was administered orally.

A midstream urine sample showed more than 100 x 106 red cells/L (reference range [RR] 10 x 106 red cells/L), and 8 x 109 white cells/L (RR, 10 x 109 WBC/L), and the culture was sterile. The erythrocyte sedimentation rate was 67 mm in one hour (WesternGyn cytometric assay by automated cytometric assay [WCA], normal for age 50–125 x 106 cells/L, 75% neutrophils). The hemoglobin level was 12 g/L (RR, 13–17 g/L), the total protein level was 90 g/L (RR, 60–80 g/L), and albumin 49 g/L (RR, 34–48 g/L). Other liver function and biochemistry tests gave normal results.

Four of six sets of blood cultures obtained over Days 11–17 yielded para-aminosalicylic-acid-sensitive coagulase-negative staphylococci. All isolates were identified as Staphylococcus epidermidis by microscopically typed (ATCC, France). Specific antibiotic therapy was not instituted.

Several weeks of intravenous saline followed on Day 29. A cranial computed tomography (CT) scan revealed cerebral atrophy but no small brain infarct. The patient had an indwelling venous catheter, which was implicated. Staphylococcus epidermidis (with an identical antimicrobial to the blood culture isolate) was cultured. An echocardiogram revealed a vegetation on a sclerotic aortic valve.

The patient was treated with intravenous flucloxacillin (12 g/day) for four weeks. There was complete clinical resolution of symptoms, and the patient was discharged from hospital completing a five month course of oral amoxicillin.

Coagulase-negative staphylococci cause 1%–5% of cases of native valve endocarditis, and vertebral osteomyelitis, with an incidence of 2%–4% in the same patient.1,2 Native valve endocarditis caused by coagulase-negative staphylococci is generally subacute in presentation. However, the occurrence of severe and major embolic events are not uncommon.3,4 33% of patients require surgery, 67%–81% of patients are cured, and 19%–33% die.5

Vertebral osteomyelitis is often caused by coagulase-negative staphylococci in four of 30 cases in one series.6 Wood et al. reported a case of native valve endocarditis and vertebral osteomyelitis caused by Staphylococcus epidermidis. The patient had an intractable presentation, but unlike our patient aortic and mitral valve replacement was required. A cure was achieved with a regimen of vancomycin, gentamicin, rifampicin, and cotrimoxazole.

Our case shows that coagulase-negative staphylococci can be pathogenic. Their repeated isolation in blood cultures, particularly the same species of staphylococcus, should arouse suspicion in the absence of intravascular catheters or prosthetic heart valves.

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Doctor versus laboratory notification of gonorrhoea in Western Australia

To the Editor: In Western Australia, the Health Act requires both laboratories and doctors to notify cases of gonorrhoea. To estimate the proportion of medical practitioners compliance with the gonorrhoea reporting system, we recently compared statutory doctor notifications with those received from laboratories during the 1989–1990 financial year.7 It was not possible to directly cross-check medical practitioner notifications against laboratory notifications, because reporting of gonorhoea in Western Australia is voluntary. Laboratory testing is essential for a definitive diagnosis of gonorrhoea, and we assumed that the excess of laboratory notifications over medical practitioner notifications closely approximated the number of cases not notified by doctors.

During 1989, medical practitioners submitted 731 notifications of gonorrhoea and laboratories 972 cases. This represented 24.5% more notifications to the laboratories than from doctors. These results indicate a substantial improvement since 1984, when only 39% of gonorrhoea notifications from laboratories were also reported by a doctor.8 We used 2 x 3 contingency table analysis to calculate a relative notification compliance fraction (RNF), and x2 and P values were calculated for each source, stratified by 10-year age group, region and sex.

Medical practitioners appear to be selectively under-reporting cases of gonorrhoea in children less than 10 years of age (RNF 0.60, 0.001; CI 0.49–0.73). Children aged 10–19 years (RNF 0.90, 0.50; CI 0.78–1.00; P = 0.01), compared with adults 20 years of age or older. No notification was received from doctors for children under 12 years of age with gonorrhoea, and 30% of those aged 10–19 years. There was no significant sex-related or regional difference in doctor compliance with notification, in either the paediatric, adolescent or adult age groups.

Our results suggest that notifications by doctors alone do not accurately reflect the incidence of gonorrhoea, especially in children and adolescents. The relative merits of notifications from laboratories, notifications from doctors, sentinel testing and cross-sectional surveys need to be analysed in the context of the sexually transmitted diseases. However, combining information from different sources does give a clearer picture. Better feedback of information to medical practitioners from the communicable diseases surveillance unit may help to maintain or improve compliance with statutory notification requirements.9

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Resistance to ciprofloxacin of respiratory pathogens in patients with cystic fibrosis

To the Editor: Dostal et al. claim to have observed an increase in in vitro resistance to ciprofloxacin of Pseudomonas aeruginosa isolates from patients with cystic fibrosis (CF) after therapy with this antibiotic.1 However, several aspects of this study warrant comment, particularly in relation to the data in Table 1, which are central to their conclusions.

Firstly, the authors have not acknowledged age as a potential confounding variable in the comparison of the isolates from patients that either had or had not been exposed to ciprofloxacin. Those not exposed are likely to have been younger patients, with less severe disease and less total antibiotic exposure. As the use of ciprofloxacin is decreasing, the age range of patients treated with this antibiotic on growing cartilage.2 Conversely, it would appear that the exposed isolates were likely to have been exposed, given that as many as 93 (or 17%) of the isolates came from one patient.

Secondly, the typing methods they have used to distinguish a median of five isolates per patient, based on typing and colonial morphology, are relatively crude in comparison with DNA methods in demonstrating strain identity and non-identity.3–5 Thirdly, they have compared CF and general isolates without stating the origin of the general isolates or whether the patients were matched in any way. The assertion that the general isolates have a similar incidence of resistance to ciprofloxacin as the CF isolates is also without consideration of the type of antibiotics or whether the assay is demonstrating a single double mutation difference which in any case was not supported by any statistical test of the data. This assay does not appear to be significant by x2 testing of the data (P < 0.05).

An increase in the minimal inhibitory concentration (MIC) with ciprofloxacin therapy is a well-recognized phenomenon. A full trial treatment has been noted by others.4 As bacterial eradication is seldom achieved in this condition, the acquisition of antibiotic resistance is not unusual nor unique to ciprofloxacin. However, the importance of either the initial antibiotic choice and subsequent outcome of antibiotic therapy in this condition is unresolved, in contrast to what has been observed in other conditions.6 For example, the authors were unable to show that response to ciprofloxacin treatment...
correlated with the pre-treatment MIV values of Pseudomonas isolates. Moreover, as the authors in the discussion, mucoid strains of Pseudomonas are more difficult to eradicate despite a lower MIC than non-mucoid strains.

While the contribution by Doering et al. is useful in promoting the conservative use of potent antibiotics in this setting, it should be placed in the context of the extensive published experience of an important drug against a difficult pathogen in an intractable condition.

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The role of corticosteroids in the management of childhood asthma: bones and spacer devices

To the Editor: The Position Statement on the role of corticosteroids in childhood asthma by van Asperen et al. discusses the side effects of inhaled corticosteroids. As with the published literature generally in this area, emphasis is given to biochemical tests of the hypothalamic-pituitary-adrenal system. The clinical significance of these tests remains unclear. There is relatively little emphasis on the clinically important area of the loss of bone density. As discussed in the Position Statement, Reid et al. has reported a reduction of total body calcium of 8.8% in adults taking inhaled budesonide

The initial results of some studies have provided evidence of an effect of inhaled corticosteroids upon bone. Increased bone losses have been observed in controlled trials with low doses of methylprednisolone. However, the studies with the use of a DPA probe as an end point for bone loss are relatively few.

Corticosteroids have been shown to: (i) reduce bone formation, (ii) inhibit osteoblast function, (iii) reduce the hydroxyproline content of bone, (iv) reduce bone resorption, and (v) reduce adrenal androgens which are important for bone.

There are several studies that have shown a decrease in the rate of bone formation in patients receiving corticosteroids. In patients with osteoporosis, a decrease in bone formation has been observed. In patients with rheumatoid arthritis, a decrease in bone formation has been observed.

This study was conducted to determine the effect of inhaled corticosteroids on bone density. Bone density was measured by dual-energy X-ray absorptiometry (DXA) scan at the lumbar spine and the hip. The results of this study suggest that inhaled corticosteroids can lead to a decrease in bone density.

In conclusion, the use of corticosteroids should be monitored carefully to ensure that bone density is maintained.

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In reply: We share Dr Smith’s concerns about the long-term effects of inhaled corticosteroids on bone density in children. However, the submission of the manuscript, some of the published literature referred to by Smith was not available for reference. In view of the need for further evaluation in this area, any effects of corticosteroids may be more critical in children. This information is still not available in children.

There is also a dose effect which needs to be clarified. The majority of studies reporting effects on bone mineralisation or turnover have used doses over 1000 µg. Recent evidence in children suggests that doses as low as 800 µg budesonide can have effects on bone density (Soren Pedersen, personal communication). In addition, some studies have suggested that smaller doses may also have effects on bone mineralisation.

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