CASE REPORTS

Recurring febrile illness in a slaughterhouse worker

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Abstract

A slaughterhouse worker presented with fever and a pleuropericardial effusion. Conventional microbiology failed to identify the responsible organism. However, DNA sequencing definitively identified *Campylobacter fetus ssp fetus*, which is rare in immunocompetent individuals. Prolonged treatment was required to eradicate the infection.

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Keywords: pyrexia of unknown origin; *Campylobacter fetus ssp fetus*; pericarditis

Patients may be exposed to various infective agents in their working environment and when travelling. Thus a full occupational and travel history should be sought, particularly in patients presenting with a febrile illness. In view of the wide spectrum of organisms involved, microbiological identification may be difficult and specialist help with new techniques such as DNA sequencing may be required.

Case report

A previously fit 54 year old male slaughterhouse worker presented with pleuritic chest pain following a week of lethargy and fever. He had no past medical problems and was not on any treatment. A detailed occupational history was elicited. His job involved hosing out animal carcasses. He had to rip out the neural tissue (spinal cord) using gloved hands. He admitted that accidental damage had occurred to a glove. There was no history of foreign travel.

He was a non-smoker and drank very little alcohol.

Clinical examination on admission was unremarkable but he developed a swinging pyrexia of 38°C and a pericardial rub two days after admission. An ECG showed upwardly concave ST elevation in lead II and V4-V6 (fig 1), indicating pericarditis. An echocardiogram showed pericardial and pleural effusions (fig 2).

Routine haematology and biochemistry results were normal, apart from raised serum C reactive protein (156 mg/l). Blood culture grew a Gram negative spiral organism could not be identified by standard biochemical methods but was identified by DNA sequencing as *Campylobacter fetus ssp fetus*.

The patient was treated with amoxycillin, metronidazole, and tetracycline and the fever and effusions resolved after seven days of treatment. He was discharged with advice to continue treatment with tetracycline for a further three weeks.

Three weeks later, after stopping antimicrobials, he was readmitted with fever and breathlessness. Clinical examination and blood investigations were again unremarkable except for a raised C reactive protein concentration (211 mg/l). He was treated with ciprofloxacin 500 mg twice daily for one week. Symptoms resolved and he was discharged home taking oral ciprofloxacin for a further four weeks. At the end of this time he was reviewed in the clinic and was found to be well. Follow up at three months showed no recurrence of the infection.

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Figure 1 ECG showing upwardly concave ST elevation in lead II and V4-V6.

Figure 2 Echocardiographic parasternal long axis view of the heart showing pleural and pericardial (arrowed) effusions. LV, left ventricle; MV, mitral valve; PE, pericardial effusion; PL EFF, pleural effusion.

Discussion

Campylobacter fetus ssp *fetus* infection is rare. It commonly presents with non-specific flu-like symptoms and bacteraemia.¹ It should be considered in the differential diagnosis of pyrexia of unknown origin. The organism is transmitted to humans through undercooked meat products or by direct contact with infected animals,² as in this case. Relapsing fever may occur.^{1,2} Pericarditis caused by *Campylobacter fetus* ssp *fetus* is rarely described in people with normal immunity.¹ In more than half the cases the bacteraemia is secondary to localised infections such as septic arthritis, pelvic inflammatory disease, meningi-

tis, endocarditis, pneumonia, thrombophlebitis, or mycotic aneurysm.³ Blood cultures may take from 3 to 25 days to grow the organism. In this unusual case of relapsing fever, a long course of treatment with ciprofloxacin was necessary. Mortality in such cases ranges from 17% to 43%.¹ Erythromycin and ciprofloxacin are the agents of choice for treatment.

The case also shows how a molecular approach can aid in the rapid identification of "difficult" bacterial isolates, using direct sequence analysis of the gene encoding the 16S RNA species of the ribosome.^{4,5} This bacterium's entire 16S gene was successfully amplified by polymerase chain reaction, sequenced, and compared with sequences on the database. It was unequivocally shown to share 100% identity with *Campylobacter fetus* ssp *fetus* (Genebank accession number M65012). This technique can be used in the diagnosis of organisms that are hard to identify by routine microbiological testing.

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Reiter's syndrome following intravesical BCG immunotherapy

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Abstract

A 71 year old woman developed conjunctivitis, asymmetrical oligoarthritis, and cystitis (Reiter's syndrome) secondary to intravesical BCG treatment for transitional cell carcinoma of the bladder. She received oral prednisolone, izoniazid, and pyridoxine and made a full recovery. Increasing use of BCG as immunotherapy will lead to an increase in the incidence of BCG associated reactive arthritis. Prompt recognition and early diagnosis will facilitate treatment and recovery.

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Keywords: arthritis; BCG immunotherapy; Reiter's syndrome

BCG immunotherapy is widely used in the treatment of malignancy, and intravesical BCG is an effective agent for superficial bladder carcinoma. Tumour regression following BCG immunotherapy correlates with conversion of the purified protein derivative (PPD) skin test from negative to positive and the development

of antibodies to BCG, suggesting that its effectiveness results from an enhancement of cell mediated immunity.¹ In a recent review of 1278 cases, intravesical BCG was well tolerated by most patients, cystitis being the commonest side effect, occurring in up to 90% of cases.² Arthralgia or migratory arthritis occurred in 0.5% of cases. We describe a case in which a 71 year old woman developed Reiter's syndrome following intravesical BCG immunotherapy.

Case report

A 71 year old white woman was started on weekly intravesical BCG treatment (Evans Medical, Medeva Ltd, Leatherhead, Surrey, UK) for relapsed transitional cell carcinoma of the bladder which had developed three years previously. During week 4 of a six week course she developed pain and swelling affecting the right middle finger, left thumb (fig 1), and left knee. Two days later she developed red and itchy eyes (fig 2). She also complained of urinary frequency and dysuria. She had no rash and no preceding flu-like or diarrhoeal illness.

On examination she was pyrexial (37.8°C) and had bilateral conjunctivitis. She had right

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