CASE REPORT

Occupational injury in a fishmonger with a macular rash, hepatosplenomegaly and pancytopenia

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A 47-year-old fishmonger presented with a history of weight loss and lethargy. On investigation he was found to have myeloma. He presented again before follow up, with a 3-day history of fever and a maculopapular rash. He was admitted to the haematology ward and treated with broad-spectrum antibiotics. Blood cultures were found to be positive for *Erysipelothrix rhusiopathiae*. Penicillin treatment was given, and he made a good recovery. The importance of occupational illness in an already immunocompromised patient and of taking a proper social and occupational history from patients on admission is illustrated through this case.

A 47-year-old fishmonger presented to the accident and emergency department with lethargy and shortness of breath on exertion. He had been healthy until 6 months before admission, when he presented with a one stone weight loss and a 3-month history of increasing shortness of breath with recurrent chest infections. He had been treated with two courses of broad-spectrum antibiotics. Full blood count was as follows: total white cell count 4.2×10^9/l; haemoglobin 6.2 g/dl; platelet count 127×10^9/l. On examination he was found to have hepatosplenomegaly. On the blood film there was marked rouleaux formation, with a blue background staining suggestive of a paraprotein. Serum protein electrophoresis showed the presence of an immunoglobulin-G λ paraprotein (26 g/l) with an associated immune paresis. Calcium and creatinine were normal (2.1 mmol/l and 90 μmol/l, respectively). Plasma viscosity was raised (2.98 mPa s), as was β-2-microglobulin (3.9 mg/ml). Bone marrow aspirate and trephine showed a 70% plasma cell infiltrate. Myeloma was diagnosed and a skeletal survey was requested, as an outpatient. The patient was transfused with 3 U of blood and given an appointment for review in a haematology clinic (for 1 week's time), with a review of all results.

Seven days later, the patient was admitted as an emergency case with a fever of 38.8℃, tachycardia of 108 beats/min, hypotension of 86/54 mm Hg and a macular rash, which was confined to his upper torso and right cheek (fig 1). No associated lymphadenopathy or arthralgia was observed. Blood, urine and stool cultures were taken and he was started on intravenous ceftazadime and vancomycin. After 48 h he had responded to antibiotic treatment and had a temperature of 36.2℃, pulse 60 beats/min and blood pressure 110/70 mm Hg. A skin biopsy was taken, which showed mild superficial perivascular dermatitis. At 72 h, both sets of blood cultures (2/2 bottles in each) were reported to be positive for a Gram-positive rod. This was subsequently identified and confirmed (by phenotypic and biochemical methods) as *Erysipelothrix rhusiopathiae* sensitive to penicillin, at the Respiratory and Systemic Infection Laboratory, Colindale. Antibiotics were changed to penicillin 1.2 g intravenously every 6 h. In view of the known association between this organism and subacute endocarditis, transthoracic and, subsequently, transoesophageal echocardiography were carried out, both of which showed no abnormality. Transthoracic echocardiography was repeated 10 days later. After 1 week of intravenous antibiotics, our patient was discharged; he had to complete a 4-week course of oral penicillin. He made a complete recovery from the infection and has since responded well, both clinically and biochemically, to infusional chemotherapy. His myeloma is currently in a remission phase.

Robert Koch first isolated the bacteria *E rhusiopathiae* in 1876. The organism is a non-motile, Gram-positive, non-sporulating rod, and is a facultative anaerobe. It is pathogenic in humans, birds and swine, and a commensal on the skin of fish.[1] In humans, there are three recognised clinical patterns of disease. The first of them, a localised cutaneous form, may occur as a manifestation of the disease, usually at the site of skin trauma. Investigation in swine has found the skin lesions to be the result of thrombotic vasculitis of end arterioles and not a direct consequence of bacteraemia.[2] The second pattern is a generalised cutaneous form with a diffuse erythematous macular rash and systemic symptoms. The third recognised clinical pattern is a septicaemic form.[3] Systemic infection is associated with endocarditis in 90% of cases,[4] chronic cardiac failure in 80% of cases[2] and a requirement of valve replacement in more than 30% of cases.[5] Infection by *E rhusiopathiae* may be underdiagnosed, because of the resemblance it bears to other infections.[6] The diagnosis, however, can be confirmed from identification of the organism in blood cultures or tissue biopsy specimens. *E rhusiopathiae* is usually sensitive to penicillin.[7] Our patient was immunocompromised with myeloma, but infection has been reported previously in immunocompetent people.[6] Occupational history is important in assessing all patients, and a diagnosis of *E rhusiopathiae* infection should be considered in people working in the agricultural and fishing industries who present with a rash, particularly when associated with endocarditis or arthritis. Early identification

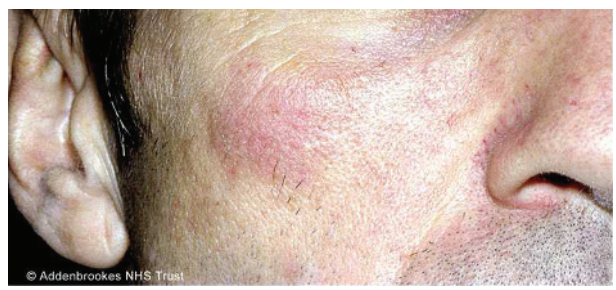

Figure 1 Macular rash in the right cheek. Consent was obtained for publication of this figure.

Take-home messages

- Occupational history is important in assessing patients.
- A diagnosis of *E rhusiopathiae* infection should be considered in people working in the agricultural industries.

and appropriate treatment in our patient led to a full and quick recovery.

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