Type f Haemophilus influenzae cellulitis in the upper extremities of an immunocompetent adult

Sirs,

Because of effective conjugate vaccination, the rate of infections due to Haemophilus influenzae serotype b has decreased. Instead, Haemophilus influenzae serotype f (Hif) is becoming a relatively important cause of invasive Haemophilus influenzae disease (1-3). Furthermore, Haemophilus influenzae cellulitis is generally located in the cervico-facial areas. To our knowledge, this is the first report of Type f Haemophilus influenzae cellulitis in the upper extremities.

A 64-year-old previously healthy woman was presented with a one-week history of painful progressive swelling of both arms, especially around the left elbow, which appeared with cellulites and a haemorrhagic rash with bullae (Fig. 1). Initially, no sign of synovitis in the left elbow appeared, so aspiration was excluded. In addition, she reported influenza-like symptoms, a temperature of 38.5°C, but no symptoms from the respiratory tract or other organs.

Peripheral blood showed a white blood cell count of 8.800/mm^3 with 88% neutrophils, 9% lymphocytes, CRP 407 mg/l (normal< 10 mg/l), sedimentation rate 74 mm/, normal serum urate, negative IgM-rheumatoid factor and normal urine analysis. X-ray of the chest and the left elbow joint were normal. Four blood-culture bottles were all positive for invasive Haemophilus influenzae serotype f, biotype I, which was sensitive to penicillin.

The patient was treated with intravenous penicillin G, to 5 MIE TID because of a suspicion of Haemophilus influenzae cellulitis. After 5 days, the patient's symptoms and CRP declined and treatment was changed to penicillin V tablets 2 MIE TID. After one month of penicillin treatment, the CRP and leukocytes had reached normal values, and the cellulitis was completely cured. Penicillin treatment continued for 6 weeks.

During the period, the search continued for the infection focus of the bacteraemia. Abdominal CT-scan, trans-oesophageal echocardiograph and repeated joint fluid examinations showed no bacteria focus. Skin biopsy showed no signs of vasculitis, but rather subepidermal formation of bulla without inflammation. Special colouring was inconspicuous; there were no signs of fungus. Serum was negative for antinuclear antibodies and ANCA. Whole body bone scintigraphy showed pathologically increased activity in the left elbow, but whole body leukocyte scintigraphy could not reproduce any activity.

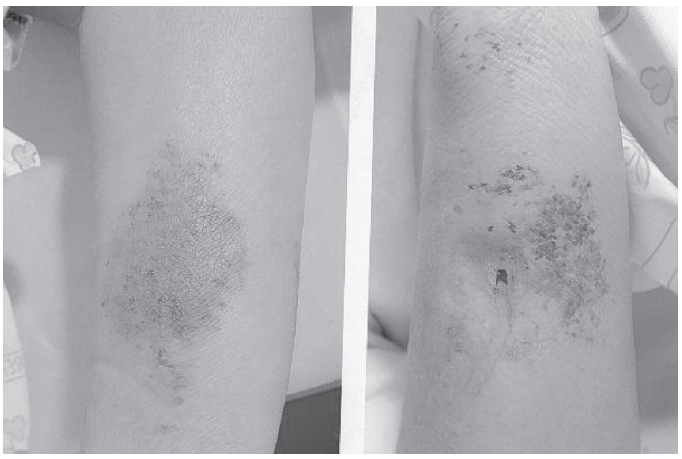

Fig. 1. Elbow showing cellulitis.

In the following three years, the patient suffered from persistent arthritis and secondary osteoarthrosis with contraction in the left elbow, documented by MR-scans and arthroscopy. However, polymerase chain reaction (PCR) examinations of both the synovial and joint fluids revealed no evidence for the presence of Hif or tuberculosis. The patient ended up with prosthesis of the elbow.

Haemophilus influenzae invasive disease primarily affects infants and elderly people as well as the immunocompromised patients, and can cause meningitis, sepsis, pneumonia, pericarditis, cellulitis, and arthritis (4-9).

Haemophilus influenzae cellulitis is rare in adults and mostly found on the face, neck and chest. One case of culture-proven bacteraemia and pleuritis caused by a b-lactamase-negative strain associated with peritonitis and cellulitis (presumably due to the same organism) has been detailed (5). Another case with arthritis and osteomyelitis of the shoulder (9), but without cellulitis, has been describes in a patient with no predisposing factors.

However, our patient is immunocompetent, no cutaneous or respiratory entry portal was found, and the cellulitis was found in the upper extremities rather than face, neck or chest. We presumed that our patient also had arthritis in the affected elbow because of positive scintigraphy and complications with destruction of the elbow joint.

The result is consistent with the hypothesis that the increased incidence of invasive disease due to non-type b encapsulated Haemophilus influenzae reflects the emergence of hypervirulent clones. In particular, this study underlines the importance of an aggressive approach towards treatment of Hif infection.

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