Cutaneous Listeria infection

Introduction

This case introduces an unusual cutaneous manifestation of a potentially life-threatening infection. The circumstances of the inoculation are key to explaining both the cutaneous signs and how an individual who does not belong to what would be considered a conventional 'at risk' group developed systemic infection. However, cutaneous infection with listeria monocytogenes could be considered an occupational hazard for those working with livestock.

Discussion

Despite the ubiquitous presence of Listeria, listeriosis remains a rare disease with an annual incidence of 3.47 cases/million/year. The case fatality rate can be up to 44% (Hof et al, 1997; Gillespie et al, 2006). Cutaneous inoculation and infection are rarer still (Owen et al, 1960; Cain and McCann, 1986). Typically it affects patients at the extremes of age, pregnant women and the immunocompromised. The usual mode of presentation is with gastroenteritis, septicaemia, CNS infection or abortion. Transmission is usually via contaminated foodstuffs.

This case serves as a salient reminder of the importance of culturing all appropriate materials in the search for the responsible organism. In this instance the administration of antibiotics before presentation rendered blood cultures sterile, but some viable organisms persisted in a few small oases of pus. It was these which ultimately yielded the key to diagnosing the cause of this rather unusual rash. BJHM

Dr Mark Gilchrist *is Clinical Research Fellow in the Peninsula College of Medicine and Dentistry, University of Exeter, Exeter EX2 5AX*

Cain DB, McCann VL (1986) An unusual case of cutaneous listeriosis. *J Clin Microbiol* **23**(5): 976–7

Gillespie IA, McLauchlin J, Grant KA et al (2006) Changing pattern of human listeriosis, England and Wales, 2001-2004. *Emerg Infect Dis* **12**(9): 1361–6

Hof H, Nichterlein T, Kretschmar M (1997) Management of listeriosis. *Clin Microbiol Rev* **10**(2): 345–57

Owen CR, Meis A, Jackson JW, Stoenner H (1960) A case of primary cutaneous listeriosis. *N Engl J Med* **262:** 1026–8

Case Report

A 38-year-old farmer presented with a 3-day history of a pustular rash, originally affecting his hands and wrists (*Figure 1*), before ascending up his forearms. This was accompanied by progressively worsening systemic upset.

Three days before presentation the patient had delivered a stillborn calf as an emergency because of maternal distress. He had not had time to retrieve birthing gloves from the distant farmhouse. The delivery was physically difficult and the patient observed some minor soft tissue trauma to his hands at the time. Approximately 6 hours later he became aware of the rash on his wrists. This was accompanied by flu-like symptoms with myalgia, and followed by intermittent rigors and pyrexia. The rash began to ascend up both arms with the evolution of multiple large pustules (*Figure 2*).

On the third day he sought attention from his GP who commenced oral amoxicillin. Despite this the patient felt his symptoms becoming more pronounced and presented to the emergency department.

On admission he was pyrexial with a temperature of 40.8°C. His heart rate was 123 beats per minute with a blood pressure of 103/58 mmHg. Respiratory rate was 24 breaths per minute. His chest was clear to auscultation, heart sounds were normal and the abdomen was soft and non-tender. Inspection of his arms revealed a symmetrical erythematous rash with multiple well-demarcated, now ruptured, pustules, some of which had coalesced. Some smaller pustules remained intact. There was a 5 cm linear area of erythema consistent with ascending lymphangitis. There was no axillary lymphadenopathy, although both axillae were exquisitely tender on palpation. Two sets of blood cultures were taken. One of the few remaining pustules was aspirated and sent for culture. He was fluid resuscitated and commenced on high dose intravenous benzyl penicillin and gentamicin.

Within 12 hours he was symptomatically tremendously improved. He was apyrexial and his haemodynamic status had significantly improved. The rash had also begun to diminish dramatically. Two days later he was fit for discharge and went home with a 10-day course of oral co-amoxiclav.

The blood cultures taken on the night of admission plus two further sets taken the following day remained sterile. The sample from the pustules grew *Listeria monocytogenes*.

Figure 1. Multiple small pustules first noticed on the dorsum of the hand and wrist.

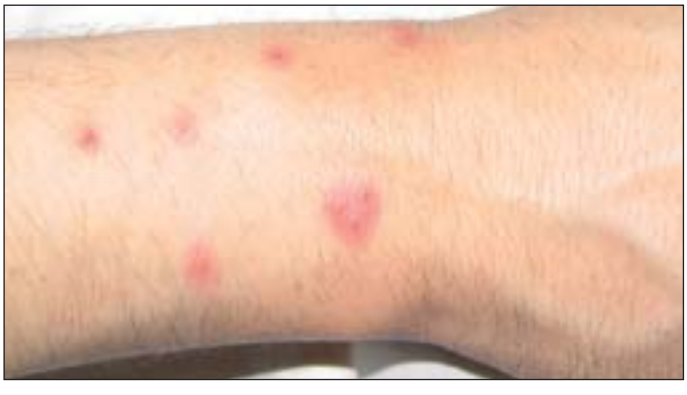

Figure 2. Well-demarcated pustular rash on palmar surface of wrist.