Fatal septicaemia caused by *Chromobacterium violaceum*

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(Index words: Clinical features, antibiotic sensitivity)

Abstract

We report a case of *Chromobacterium violaceum* septicaemia in a 10-year old boy admitted to hospital in September 2001, two weeks after he suffered a crush injury of the left foot. In spite of surgical debridement and antibiotics his condition worsened and he developed multiple liver and lung abscesses. He died one week after admission and a blood culture grew *Chromobacterium violaceum*.

Introduction

Chromobacterium violaceum, was identified in 1881 (1) and first described as a human pathogen in 1927 (2). Although rarely isolated from clinical specimens *Chromobacterium violaceum*, is easily identified on conventional culture media by its striking deep violet pigment (1,3). *Chromobacterium violaceum* infections have been reported from several countries (1,2,3). We report the first recorded case of septicaemia due to *Chromobacterium violaceum* in Sri Lanka.

Case report

In September 2001 a 10-year old boy, from a remote village in the Southern Province, was admitted to the surgical casualty ward of the Karapitiya Teaching Hospital with an ulcer on the left foot following a crush injury sustained two weeks before. There was bilateral inguinal lymph node enlargement. Wound debridement was done, and he was treated with cloxacillin and penicillin. He developed fever with chills and rigors on the third day after admission and the next day, severe abdominal pain, vomiting and dyspnoea. Thereafter his condition deteriorated rapidly. Chest examination revealed bilateral diffuse rales. The liver was tender and enlarged up to the right iliac fossa and the spleen was palpable 4 cm below the left costal margin. He had at this stage leucocyte count of 15 000/ μ l with 91% neutrophils and a normal platelet count. Chest xray showed multiple diffuse cavitative lesions in both lung fields. Ultrasound scan of the abdomen showed a grossly enlarged liver with multiple 5 to 10 mm cystic lesions resembling abscesses.

His blood pressure was normal and there was no

bleeding tendency. Intravenous gentamicin and cefuroxime were added to cloxacillin after blood was taken for culture. Two hours later he was transferred to an intensive care unit for ventilatory support. He succumbed on the same day and blood cultures subsequently grew *Chromobacterium violaceum*.

Blood culture yielded smooth shiny violet black colonies on blood (aerobic culture) and MacConkey agar. On Gram stain the organisms were Gram negative, slightly curved bacilli which occurred singly or in pairs and showed the characteristic bipolar or barred appearance. The organism was identified as *Chromobacterium violaceum* by standard microbial identification procedures and confirmed by API 20 E. Susceptibility testing done by the NCCLS method revealed that the isolate was sensitive to ciprofloxacin, imipenem, meropenem, cotrimoxazole, tetracycline, gentamicin, netilmicin and aztreonam, and resistant to ampicillin, augmentin, cefuroxime, ceftioxone and ceftazidime.

Discussion

Chromobacterium violaceum is a saprophyte present in soil and water in tropical and subtropical areas (1,2,3). Infection usually follows exposure of broken skin to contaminated water or soil (1,3). Symptoms such as fever, vomiting, pustules and lymphadenitis commonly precede evidence of systemic infection (3). Septic shock develops rapidly, as may pneumonia and visceral abscesses involving liver, spleen and lung.

Chromobacterium violaceum is generally considered to be of low virulence, but septicaemia is usually fatal unless promptly treated (2,3), with a mortality rate of 60% for reported cases in the USA (3,6). Severe infection with a *Chromobacterium violaceum* is reported to be more common in patients with chronic granulomatous disease (4,5) even though serious sepsis due to this organism can occur in previously healthy people (3).

Chromobacterium violaceum sepsis should be suspected in the presence of cutaneous lesions with multiple liver and lung abscesses and lymphadenitis. Appropriate specimens such as blood, wound pus, abscess fluid should be taken early in the course of the disease.

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