# Septic Fever and a pustule maligna-like skin lesion on the thigh in a leucopenic patient

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**Abstract**

An immunocompromised man developed high fever and skin lesion resembling pustule maligna. The infection, however, was caused by two common gram negative bacteria. The differential diagnosis of pustule maligna is discussed.

Septic Fever and a pustule maligna-like skin lesion on the thigh in a leucopenic patient

A Jordanian man had been in hospital for 16 days because of an acute lymphocytic leukemia. Three days after the last dose of chemotherapeutic medications he got septic fever and a bulla on his left thigh.

The patient displayed these symptoms when he was treated with piperacillin/tazobactam 4.5g i.v. TID for five days, metronidazole 500mg i.v. TID for four days and vancomycin one gram i.v. BID for two days. Two days before Fig.1 was taken, these antibiotics were discontinued and meropenem one gram i.v. TID was started and the next day teicoplanin 400mg i.v. OD and tetracycline 500mg p.o. TID were added. On the day when Fig.1. was taken azithromycin 500mg OD p.o. was added.

Dermatological investigation revealed a blackish haemorrhagic bulla in size of about 1x1 cm on the patients left thigh. The bulla was surrounded by a peculiar whitish oedematous zone and wide area of redness, which covered the whole upper medial side of the thigh (Fig.1). There was no inguinal lymphadenopathy. He had a fever of 40.5 degree C and his peripheral blood white cell count was $0.1x10^9$/UL.

*Figure 1. A bulla on left thigh surrounded with a zone of oedema and wide redness.*

The bulla was opened and a swab was taken for a bacteriological culture which revealed pseudomonas aeruginosa and klebsiella pneumoniae. Both were sensitive to meropenem which was started two days earlier. The antibiotic therapy started to help, but not before the patient's white cell count started to rise.

One week later he was afebrile and the peripheral blood white cell count was 2.2 10E9/L.

$2.2x10^9$/UL

The bulla left a granulating ulcer which healed within a few weeks.

**Discussion:**

Based on the clinical picture the initial differential diagnosis was made between cutaneous anthrax (pustule maligna) and other infections like pseudomonas sepsis presenting echtyma gangrenosum.

The fact that the patient was on heavy antibiotic treatment, effective against pseudomonas, when the pustule appeared, spoke against echtyma gangrenosum as well as against infection caused by staphylococci or by bacillus anthracis.

Classical pustule maligna has been described to be a papule, which appears on the site of inoculation. Soon a bulla appears on oedematous red skin. The bulla ruptures when a haemorrhagic crust is formed. Around this lesion there is a zone of oedema and redness. Regional lymph nodes may be tender, but they are not as severely affected as the skin lesion would suggest [1,2].

The treatment should be started promptly, because the mortality for cutaneous anthrax is 5-20%. Severe oedema and toxaemia mean poor prognosis [1].

Bacillus anthracis is one of the microbes, which can be used in biological warfare [3].

When pustule maligna-like skin lesions are seen, infections caused by staphylococci, vaccinia, cowpox, cat scratch disease, North American blastomycosis and sporotrichosis should be taken into account in differential diagnosis [1].

The fact, that the patient had been in the ward for 16 days, spoke against anthrax because the incubation time of cutaneous anthrax is approximately 7 days (range 1-12 days) [1, 2]. The symptoms of this skin infection, caused by two common gram-negative bacteria, were fulminant because of the patient's leucopenia.

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