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Continuous Medical Education Forum (CME from EB)

Continuous medical education activities; Case No. 3

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Abstract

A 25-year-old male with a history of spina bifida in the lumbar region, type II diabetes mellitus, solitary left kidney, neurogenic bladder and bowel presented to the emergency department with fever, nausea, and vomiting. On examination, there were multiple sacral ulcers, with the largest stage 4 ulcer present on the left buttock and measuring 5 cm in diameter by 5 cm deep with purulent drainage. A swab specimen of the wound from the left buttock ulcer was initially sent for culture. Following processing and incubation in the laboratory, this culture grew seven different colony-types with no predominant type. A more representative specimen was requested. The patient was subsequently taken to the operating room for debridement. Tissue obtained during this procedure from the ulcer bed was sent for culture. The specimen was cultured on blood agar and chocolate agar. The media were incubated at 35°C in 5% CO₂ for 24-48 hours. Following incubation, there was a predominant growth of many tiny grey colonies on chocolate agar. These colonies were small and β-hemolytic on blood agar (To be continued).

A 25-year-old male with a history of spina bifida in the lumbar region, type II diabetes mellitus, solitary left kidney, neurogenic bladder and bowel presented to the emergency department with fever, nausea, and vomiting. On examination, there were multiple sacral ulcers, with the largest stage 4 ulcer present on the left buttock and measuring 5 cm in diameter by 5 cm deep with purulent drainage. A swab specimen of the wound from the left buttock ulcer was initially sent for culture. Following processing and incubation in the laboratory, this culture grew seven different colony-types with no predominant type. A more representative specimen was requested. The

patient was subsequently taken to the operating room for debridement. Tissue obtained during this procedure from the ulcer bed was sent for culture. The specimen was cultured on blood agar and chocolate agar. The media were incubated at 35°C in 5% CO₂ for 24-48 hours. Following incubation, there was a predominant growth of many tiny grey colonies on chocolate agar. These colonies were small and β-hemolytic on blood agar (**Figure 1**).

At this point, the major consideration was a possible *Streptococcus* spp. A Gram stain, catalase test, and latex *streptococcus* grouping test to identify Lancefield *streptococcal* groups A, B, C, D, F and G were performed.

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The microorganism, however, was a pleomorphic small, branching Gram-positive bacillus (**Figure 2**), catalase-negative, and un-reactive with the Lancefield *streptococcal* grouping antibodies. The Vitek 2 bioMerieux system reported the microorganism as an UNIDENTIFIED organism. In the meantime, the patient was treated with piperacillin-tazobactam and daily wound dressing. He promptly improved after 6 days of antibacterial therapy, remained afebrile with improvement of nausea and vomiting, and continued antibiotics for an additional week after discharge. **Which bacteria should be considered at this time and what should be done with the isolate at this point?**

Figure 1. β -hemolytic colonies on blood agar



Figure 2. Gram-stained smear of isolated colony from 24 hr growth on blood agar showing pleomorphic Gram-positive bacilli.

