Atypical Colony Morphology of *Staphylococcus lugdunensis* Isolated from a Wound Specimen

*Staphylococcus lugdunensis, Atipik Koloni Görünümü*

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**Abstract**

The incidence of infections due to coagulase-negative staphylococci (CoNS) has been steadily increasing in recent years. In this report, we describe an isolate of the CoNS *Staphylococcus lugdunensis* from a wound specimen with a colony morphology distinct from that of a classical *S. lugdunensis* colony. Specifically, wrinkled, medium-sized, beta hemolytic, opaque, rough white colonies were detected on blood agar. Catalase-positive, coagulase-negative, gram-positive cocci-yielding such colonies should be suspected of being *S. lugdunensis*.

**Key Words:** Atypical colony morphology, *Staphylococcus lugdunensis*

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**Introduction**

Staphylococcal infections are usually caused by the organism *Staphylococcus aureus*. However, the incidence of infections due to coagulase-negative staphylococci (CoNS) has been steadily increasing in recent years. Infections with *Staphylococcus epidermidis* and (less commonly) *Staphylococcus haemolyticus* and *Staphylococcus lugdunensis* usually involve the implantation of medical devices. Other infections related to CoNS are wound infections, urinary infections, ophthalmic infections and septisemia. After 18-24 hours of incubation, staphylococci appear as opaque, smooth, circular colonies on the agar plate surface [1].

In this report, an isolate of *S. lugdunensis* from a wound specimen with a different colony morphology from that of the classical CoNS colony is described.

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**Case Report**

A swab sample taken from a burn wound lesion of a 22-year-old patient was cultured. For this purpose, the specimen was inoculated onto 5% blood agar and onto EMB agar medium. After a 24-hour incubation, the colonies on the plates were evaluated. In the evaluation, no colonies were seen on the EMB agar. At the blood agar surface, wrinkled, medium-sized, beta hemolytic, opaque, rough white colonies were detected. The colonies could not be easily removed from the surface of the agar by an inoculation loop, and they could be moved intact over the surface (Figure 1). Microscopic examination of the gram preparation made from the colony revealed Gram-positive cocci. Other test results of the bacteria were as follows: catalase (+), oxidase (-), tube coagulase (-), slide coagulase (+). According to these test results, the bacterium was determined to be a species of the staphylococcus genus.

In additional tests to identify the bacterium at the species level, it was found to be PYR (+), susceptible to novobiocin and ornithine decarboxylase (+). Based on these results, the isolated bacterium appeared to be *S. lugdunensis* [2]. This result was confirmed by API staph and automated Vitek2 system biochemical gram positive (GP) card (BioMerieux, France).

In addition, antibiotic susceptibility tests by the disc diffusion method revealed that the bacterium was susceptible to cefoxitin, penicillin, vancomycin, erithromycin, linezolid, clindamycin and tetracycline [3].

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**Discussion**

As a group, the coagulase-negative staphylococci (CoNS) are among the most frequently isolated bacteria in clinical microbiology laboratories, and they are becoming increasingly important, especially as causes of hospital-acquired infections [4].

Coagulase-negative staphylococcal bacteremia is rarely life-threatening, especially if treated promptly and adequately. However, CoNS can cause fatal infections, especially in immunocompromised patients or if one of the more virulent species, such as *S. lugdunensis*, is involved [5]. *S. lugdunensis* resembles *S. aureus* in that this species may express a clumping factor or produce a thermostable DNase [6].

Isolates such as *S. lugdunensis* and *S. schliferi* can also occasionally be mistaken for *S. aureus* because of the presence of a clumping factor. However, tube coagulase tests are negative for *S. lugdunensis* but positive for *S. aureus*. 
biochemical characteristics similar to those of \textit{S. lugdunensis}, they yielded colonies with different characteristics. As described above, the colony morphology of our strain was wrinkled, medium size, non-pigmented, non-hemolytic, opaque and rough.

This report demonstrates that colonies of \textit{S. lugdunensis} may be atypical in appearance. Therefore, catalase-positive, coagulase-negative, gram-positive, coccii-yielding, wrinkled, medium-sized, opaque, rough white colonies should be suspected of being \textit{S. lugdunensis}.

\textbf{Conflict of interest statement:} The authors declare that they have no conflict of interest to the publication of this article.

\textbf{References}