

Identification of *Kocuria rosea* by Vitek 2 GP Card

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Citation

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Abstract

The newly designed Vitek 2 gram-positive identification card (bio Merieux, Marcy l'Etoile, France) covers 115 taxa by the broadened database. Identification of *Kocuria* spp is one of them. Use of this card in the routine microbiology laboratory can lead to a better understanding of the potential pathogenicity of this species

Kocuria spp belongs to the family Micrococcaceae and are considered harmless saprophytes of skin and mucous membrane.¹ It was previously classified into the genus *Micrococcus*. Stackebrandt and colleagues made a taxonomic revision of the genus *Micrococcus* and some strains were reclassified in the new genus *Kocuria*.¹ Infections due to *Kocuria* spp are exceedingly rare. However, there have been a number of recent reports describing the association of *Kocuria* spp with various infections, especially in invasive infections associated with medical implant devices. Two species, *Kocuria rosea* and *Kocuria kristinae* have been reported to cause catheter-related bacteremia.^{2,3} Edmond et al reported the first case of *Kocuria kristinae* infection associated with acute cholecystitis.⁵

Recently, we encountered an isolate that was identified as *Kocuria rosea* by the Vitek 2 GP card. A 9-year-old boy presented to the Neurosurgery department with on and off vomiting since 2 months. He had no history of headache, vision loss and imbalance while walking. On examination, he had bilateral papilloedema. Cerebellar signs were absent. Magnetic Resonance Imaging (MRI) showed vermian mass measuring 4.4 × 4.3 cm occupying the fourth ventricle and causing hydrocephalus. The child underwent ventriculoperitoneal shunt (VP Shunt) insertion under prophylactic intravenous cefoperazone-sulbactam and netilmicin, according to the departmental protocol. The child was subsequently operated for the vermian mass, the frozen section of which showed a round cell tumor, possibly medulloblastoma. 48 hours after the second surgery the child developed post-operative fever. There was no sign of infection along the shunt tract and there were no signs and symptoms suggestive of meningitis or peritonitis. CSF was obtained from the shunt reservoir under aseptic technique

and was also clear and revealed no pleocytosis and no fall in glucose levels. CSF was cultured in a BacT/Alert FA/FAN bottle (bioMérieux Hazelwood, MO, France) and yielded a growth after 2 days of incubation. It was sub cultured on blood and mac-conkey agar. After overnight aerobic incubation at 37° c a pure growth of pale cream non-hemolytic colonies on was obtained on blood agar. It was identified as *Kocuria rosea* by the Vitek 2 GP card. The isolate was also identified by conventional tests. Manual tests revealed the following results: gram-positive cocci arranged in tetrads on Gram staining, facultative anaerobe, non-motile, catalase positive, coagulase negative, bacitracin sensitivity at 0.04 IU, negative nitrate reduction and positive esculin hydrolysis. Antibiotic sensitivity test was performed according to the Clinical and Laboratory Standards Institute (formerly NCCLS) guidelines for *Staphylococcus aureus*. The isolate was sensitive to penicillin, oxacillin, erythromycin, clindamycin, trimethoprim/sulfamethoxazole, ciprofloxacin, levofloxacin vancomycin, teichoplanin and linezolid. There was no database for MIC calculation for *Kocuria* spp in the Vitek system. Repeat CSF culture yielded *Kocuria rosea* with same antibiogram profile. Blood and urine cultures were sterile. The child was started on antibiotics and became afebrile within 24 hours and could be discharged from hospital after a one week.

According to a study by Szczerba et al most strains of *Kocuria* are sensitive to doxycycline, ceftriaxone, cefuroxime, amikacin, and amoxicillin with clavulanic acid, but are usually resistant to ampicillin and erythromycin.⁵ The duration of therapy depends on the site and severity of infection. Duration of 10-14 days is recommended if bacteremia is present. In this case, the isolate probably reflected shunt tube colonization since the child had no signs

and symptom of VP Shunt infection and made an uneventful recovery without shunt removal within a week.

The identification of Micrococci isolated from different clinical specimens is often cumbersome for the laboratory. A new Vitek 2 Gram-positive identification card GP and database were recently introduced by bioMérieux, which allows for the identification of additional taxa including *Kocuria* spp.⁶ The 64 well- plastic- ID- GP card containing 43 tests covers 115 taxa and has been evaluated to perform well for the identification of medically relevant Gram-positive cocci in routine clinical laboratory.⁷ We believe that a reliable identification of *Kocuria rosea* is possible with the use of the Vitek 2 GP card. Since these isolates are rare in the routine microbiology laboratory, a better understanding of the potential pathogenicity of this species will be more apparent after the report of more cases.

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