TITLE: MULTIDRUG-RESISTANT STAPHYLOCOCCI ISOLATED FROM AN INTENSIVE CARE DOCTOR'S DOG

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ABSTRACT

The zoonotic potential of multidrug resistant (MDR) bacteria, especially in food-producing animals, is a worldwide concern and companion animals have also been implicated as one of the multifactorial causes of resistant bacteria spread. However, this clinical report presents possible evidence of transmission of MDR bacteria from human to pet. A 5-year-old mixed breed male dog was admitted with obstructive struvite urolithiasis relapsing over 1 year and a half, in Botucatu city, in the state of Sao Paulo. Urine exams revealed the presence of bacteria and low urinary specific gravity. When treatment failed, urine culture was performed and *Staphylococcus* spp. identified by standard biochemical procedures. Antibiogram by Kirby Bauer disk diffusion method, indicated resistance to penicillins, cephalosporins, cephamycins, carbapenems, quinolones, tetracyclines, lincosamides, phenicols, amynoglicosides, pholate pathway inhibitors, macrolides, fosfomycins, ansamycins and monobactams. It presented susceptibility to glycopeptides (vancomycin, teicoplamin), nitrofurans (nitrofurantoin) and a penicillin (ticarcillin). Consequently, the strain was resistant to more than three classes of antimicrobials (MDR) and off-label treatment with slow IV infusion of vancomycin BID, during seven days was necessary for clinical cure. The strain was molecularly identified as *Staphylococcus pseudintermedius* and *mec*A gene was identified. This gene is the main responsible for methicillin-resistant *S. pseudintermedius*, which is often resistant to other classes of antimicrobials. Gram-positive bacteria are less frequently isolated from urine culture in dogs than gram-negative bacteria and methicillin-resistant staphylococci are the main cause of nosocomial infection. Therefore, we believe transmission possibly occurred from owner to pet, due to the fact that its owner was an intensive care doctor. Further studies should elucidate the influence of the changing relationship between human and pets, regarding interspecies transferability of resistant bacteria and bacterial resistance encoding genes.

Keywords: Multidrug resistance, *Staphylococcus pseudintermedius*, Dog.
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