Diabetic foot ulcers with myiasis: a potential route for resistance gene dissemination for enterococci?


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A 63-year-old man with uncontrolled insulin-dependent diabetes mellitus was admitted with fever, mental confusion, signs of peripheral artery disease, and deep wounds filled with myiasis larvae and emitting a fetid odor (Figures A, B). Eight larvae of Cochliomyia hominivorax (Coquerel, 1858), which feed on living tissues, were isolated from the lesion and identified based on a taxonomic key (Figures C, D). Biopsy samples confirmed osteomyelitis (Figures E, F). Bone culture detected vancomycin-resistant strains of Pseudomonas aeruginosa, Enterococcus gallinarum, and Enterococcus faecalis; an erythromycin-resistant (MIC ≥8 µg/mL) and vancomycin-susceptible (MIC >2 µg/mL) Staphylococcus aureus strain was also detected (Figures G, H, I, J). Previously, lesion cultures have only detected methicillin-resistant S. aureus strains with MICs of 0.5-1µg/mL. Despite the use of piperacillin/tazobactam and carbapenem regimens, ischemia was irreversible; Syme’s amputation was performed successfully.

S. aureus and P. aeruginosa are virulent bacteria that are frequently resistant to common antibiotics. However, vancomycin-, tigecycline-, and linezolid-resistant S. aureus strains are rare. Various studies have identified a link between vancomycin- (MIC ≥16 µg/mL) and erythromycin-resistant S. aureus and enterococci, mediated by the acquisition of the transposon Tn1546[3]. Antibiotic abuse is most likely responsible for increased resistance; this article highlights the potential of gene exchange between enterococci and S. aureus in clinical scenarios during their co-existence in chronic wounds for long time periods.

Conflict of interest
The authors declare that there is no conflict of interest.

REFERENCES

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