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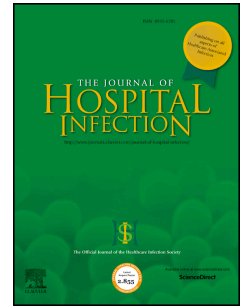
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Short report**Assessment of theatre shoe contamination in an orthopaedic theatre**K. Clesham^{a,*}, P. Ryan^b, C. Murphy^a^a*Department of Trauma and Orthopaedics, Galway University Hospitals, Galway, Ireland*^b*Department of Microbiology, Galway University Hospitals, Galway, Ireland*

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SUMMARY

Prosthetic joint infection (PJI) is a devastating complication of arthroplasty. Numerous protocols reduce potential risk for PJI peri-operatively, but none exist for the management of theatre shoes. Our aim was to assess for bacteria known to cause prosthetic infection on theatre shoes. Forty theatre shoes were analysed; there were coagulase-negative staphylococci on 65% ($N = 25$), meticillin-susceptible *Staphylococcus aureus* on 40% ($N = 16$), and meticillin-resistant *S. aureus* on 25% ($N = 10$). Amount of blood spatter correlated poorly with microbial contamination. Shoes harbouring Gram-positive bacteria, including antibiotic-resistant strains, provide a potential route of transmission to the theatre environment.

Keywords:

Arthroplasty

Theatre shoes

Infection

Prosthetic infection

Introduction

In a standard operating theatre there are many measures in place to reduce the risk of contamination. In orthopaedic surgery, contamination of a surgical site may lead to the development of a prosthetic joint infection (PJI), posing a serious threat to the patient. These patients tend to have prolonged lengths of stay, multiple admissions, and require further high-risk procedures leading to an increased risk of morbidity and mortality [1].

Disposable surgical gowns and masks are used and are removed after each procedure, reducing risk of contamination from the surgeon to consecutive patients. In arthroplasty, the use of laminar flow is widely instituted; however, there is ongoing debate about its effectiveness, with recent studies showing no benefit over standard ventilation mechanisms [2,3]. Personal protective hood systems give additional protection to both the patient and the

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