

AB253. Thyroid radiation shields: a potential source of intraoperative infection

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Background: Surgical site infections represent one of the major morbidities associated with undergoing surgery. Thyroid shields are often uncovered by the surgical gown. The airborne transmission of pathogenic bacteria caused by this breach in the sterile field may represent a preventable source of wound contamination. This study examines 3 Irish teaching hospitals defining the common pathogens found on thyroid radiation shields as well as the region of the shield most likely to be contaminated.

Methods: Protective shields were swabbed under strict sterile technique using an independent swab for each designated quadrant of the shield. Afterwards the shields were cleaned and re-swabbed to provide a negative control.

All of the swabs were then cultured at 37 °C on 5% sheeps blood agar for 48hrs and were then identified by a MALDI-TOF Walkaway mass spectrometer.

Results: Decontamination of thyroid radiation shields reduces the inoculation of bacteria from 86% to 27%. Coagulase negative staphylococcus (CoNS), known to be the main cause of SSI were inoculated on 76% of quadrants especially the most forward facing quadrants. Significantly, Enterococcus and *S. aureus* were cultured which may represent resistant strains of VRE, MRSA exposed to the operative field.

Conclusions: The airborne transmission of bacteria found on protective garments exposed to the operating field may be one of the reasons for SSI rates. The most common pathogens associated with SSI's were isolated on thyroid radiation shields. Hospitals should be astute to the cleaning and appropriate storage of these garments. Sterile gowns re-designed to accommodate lead garments may be useful in Orthopaedic surgery.

Keywords: Infection control; prosthetic joint infection; surgical site infection; thyroid radiation shields

doi: 10.21037/map.2020.AB253

Cite this abstract as: McAleese T, Broderick J, Curran R. Thyroid radiation shields: a potential source of intraoperative infection. *Mesentery Peritoneum* 2020;4:AB253.