



Do Double Gloves Reduce Risk of Intraoperative Blood Borne Infection?

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Purpose: Surgical teams rely on surgical gloves as a barrier to protect themselves against blood-borne pathogenic infections during surgery, but perforation of the glove increases the risk of surgical team exposure to blood-borne pathogens during surgery. However, double-glove practice varies between different surgical specialties. The study aimed to determine if double gloves reduce the incidence of blood-borne infection compared with single gloves.

Methods: Data collected from June 1, 2016 to August 31, 2016, a total of six operating rooms. 400 pairs of gloves were collected from Colon and Rectum Surgery and Orthopedics. Twenty participants included first surgeon, second or assistant surgeon, and scrub staff. All gloves used in the study were Ansell latex powdered sterile surgical gloves. Fluorescent testing was used to observe visible blood on the hands of surgical team members, and air-inflation tests were used to detect the number of perforations in the innermost gloves.

Results: Glove perforations were detected in 11 of 141 sets of single-gloves (7.8%), and 9 of 259 sets of innermost gloves in the double-gloved (3.47%). The most common site of perforation was in the left hand with 5 of 20 (25%). Single-glove use had a higher prevalence of blood-borne infection in Colon and Rectum Surgery than double-glove use in Orthopedics (16.9% vs. 2.7%). It was a lower prevalence of perforations in the innermost gloves after double-glove intervention in Colon and Rectum Surgery (0.8%). We used fluorescent testing to check surgical team members' hands for contamination with blood after glove removal (0%).

Conclusion: This study proved the effectiveness of whether double gloves decrease the risk of blood-borne infection and exposure to blood-borne pathogens compared with single gloves. Until now, double-gloving has not been a common practice among surgical team members. The study can be extended in parallel to improve the quality of the operating room; it should be introduced as a routine practice.