
Abstract:

Objective. Needlestick injuries are the most common injuries that occur among operation room personnel in the health care service. The risk of infection after a needlestick injury during surgery greatly depends on the quantity of pathogenic germs transferred at the point of injury. The aim of this study was to measure the quantity of blood transferred at the point of a percutaneous injury by using radioactively labeled blood.

Design. This study was conducted to evaluate the risk of infection through blood contact by simulating surgical needlestick injuries ex vivo. The tests were conducted by puncturing single and double latex gloves with diverse sharp devices and objects that were contaminated with Technetium solution labeled blood.

Results. A mean volume of 0.064 ìL of blood was transferred in punctures with the an automatic lancet at a depth of 2.4 mm through 1 layer of latex. When the double-gloving indicator technique was used, a mean volume of only 0.011 ìL of blood was transferred (median, 0.007 ìL); thus, by wearing 2 pairs of gloves, the transferred volume of blood was reduced by a factor of 5.8.
Conclusions. The results revealed that double gloving leads to a significant reduction in the quantity of blood transferred during needlestick injury.

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