Reply to the Letter to the Editor

Reply to the Letter to the Editor: Do Longer Surgical Procedures Result in Greater Contamination of Surgeons' Hands?

Pooria Hosseini MD, MSc

To the editor,

I want to thank Xiong and colleagues for their interest in our research. Our group appreciates their comments.

In their first comment, the authors mentioned that we should not refer to the paper by Mermel and colleagues [1] since one of the cases in their study did not match with the inclusion criteria in our study. That

particular study highlighted the possibility of germs passing through intact gloves regardless of skin pathology. We intentionally referred to that paper in order to answer whether physical barriers, like gloves, can completely protect against surgical site infection.

Regarding whether germs originate from a surgeon's hands or come from outside sources, I must make clear that the purpose of this study was to test whether surgeons' hands get recontaminated during a long operation. The question of where the recontamination comes from was not the focus of our study. To answer this question, Xiong and colleagues proposed setting up a control group who wears gloves but does not conduct an operation. Such a control group is biased since wearing gloves and not operating on a real patient fails to simulate the real surgical work, nor does it produce the

same sweaty environment underneath the gloves.

Although not the focus of our study, our group has thought about the source of recontamination. Rather than a simple gloved nonoperating control group, we suggest that a future study might instead running a genetic fingerprinting of the bacteria and subsequently comparing them to the surgical site cultures. Genetic fingerprinting is the only accurate way to discover the origin of the organisms in question. However, genetic fingerprinting has its own unique limitations, including being quite expensive.

In order to answer the final comment of Xiong and colleagues, we took the samples from the palm of the dominant hands in order to eliminate the problem with hair follicle concentration. The size of the hands did not matter in this study because we did not compare the results at each time point (prescrub, postscrub, and postop) with other surgeons. A surgeon's hand size is a constant measure between three time points in one operation, so hand size in this study does not matter. Therefore, the results of this study should not be affected by

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sex, race, body size, or hair follicle concentration.

We sincerely appreciate your comments and would like to inform you that we are currently working on

the second phase of the study (a randomized control trial of rescrubbing). It is our hope that the results of the second phase of our study will be out soon.

References

1. Mermel LA, McKay M, Dempsey J, Parenteau S. Pseudomonas surgical-site infections linked to a healthcare worker with onychomycosis. *Infect Control Hosp Epidemiol*. 2003;24:749–752.