Nail Polish & Bacterial Counts in Surgery

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In the Literature

Hardy JM, Owen TJ, Martinez SA, Jones LP, Davis MA. The effect of nail characteristics on surface bacterial counts of surgical personnel before and after scrubbing. *Vet Surg*. 2017;46(7):952-961.

FROM THE PAGE ...

For several decades, finger nail polish on gloved hands in surgery has been a controversial topic in veterinary medicine. Two landmark papers conflict on the significance of nail polish and potential contamination.[1,2] Current recommendations dictate a nail length of 5 mm to 6 mm and no jewelry, nail polish, or artificial nails. These guidelines were created to minimize bacterial loads on hands in surgery, thus reducing patient morbidity and mortality from nosocomial infections.

Nine faculty members and 12 students were included in the study. Nail length, presence or absence of nail polish, duration (ie, days) of nail polish, type of surgery, dominant hand, whether nails were bitten, glove tears, time in surgery, and sample collection times were all recorded. All subjects painted both hands with nail polish and scrubbed at least twice in a one-week period. Nail polish was then removed, and subjects scrubbed again at least twice in another one-week period. A routine 5-minute scrub protocol with 4% chlorhexidine scrub was followed. The same bottle of nail polish was applied in one coat on all subjects. Samples were taken from under the nail using a moistened sterile cotton tip applicator and sterile toothpick before and after scrubbing and at the end of surgery.

Results showed the only significant factor was nail length. Nails longer than 2 mm had higher subungual bacterial counts at all times as compared with shorter nails. Presence of nail polish did not affect bacterial counts. Bacterial counts were lowest at end of surgery in all groups.

... TO YOUR PATIENTS

Key pearls to put into practice:

1. Surgical gloves perforate approximately 25% to 67% of the time[3-5]; therefore, good hand hygiene is essential. Short nails (<2 mm) can minimize the potential for infection.
2. Traditional chlorhexidine scrubs are preferred over iodine-based scrubs, as they are effective in the presence of small amounts of organic material and have a residual effect up to 6 hours.
3. Alcohol-based surgical rubs are likely to test even better, as the effects are instant and persist well beyond application. Hands (including under the nails) must be cleaned before application, as rubs are only effective on dry hands. Rubs may be applied as a sole agent as long as hands are clean.
4. Alcohol-based rubs result in healthier hands, as they do not cause abrasions from traditional scrubbing, making hands less likely to harbor bacteria.[5,6]

References

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