

The Use of a “No-Touch” Technique to Reduce the Incidence of Glove Perforation During Suture Needle Adjustment

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I. ORENKO, MD, J. PIELOP, MD, AND B. L. RANSELL, BA HAVE INDICATED NO SIGNIFICANT INTEREST WITH COMMERCIAL SUPPORTERS.

THE USE of universal precautions aims to reduce the amount of exposure to pathogens that healthcare workers face on a daily basis. Of the pathogens transmissible via needle stick injuries (NSIs) today, hepatitis B virus, hepatitis C virus, and the human immunodeficiency virus (HIV) are of greatest concern. There are an estimated 800,000 NSIs each year in the United States, with approximately 2% contaminated with HIV.¹ Estimates show that 80% of healthcare worker exposure to HIV occurs through NSIs.¹ The risk of transmission from an infected person to a healthcare worker through injury with a sharp object, such as a NSI, has been estimated to be 6% to 30% for hepatitis B virus, 0.4% to 1.8% for hepatitis C virus, and 0.25% to 0.4% for HIV.² Even when no infection ensues, the cost of follow-up for percutaneous exposures may be substantial and may include laboratory charges for blood tests, treatments such as chemoprophylactic drugs for high-risk HIV exposures, service charges for employee health visits, lost time of the exposed worker, and other indirect costs. In a dermatologic setting where sharps are used routinely throughout the day, diligent efforts must be made to prevent NSIs.

In our practice, we have found that many NSIs occur while placing or adjusting the suture needle while it is located in the needle driver during suture placement. We describe a “no-touch” technique that we recommend should be applied universally to prevent NSIs. This method requires the consistent use of mechanical assistance, in our case a forceps, in the reloading and adjustment of a suture needle into the needle driver (Figure 1). At no time does the surgeon or assistant use his or her hand or fingers to

adjust or place the needle into the needle driver. Thus, while one hand is holding the needle driver, the other hand always uses a forceps or other tool to adjust the needle during suturing, keeping the hand and fingers away from any possible contact with the suture needle. The no-touch rule also applies while the suture is being placed in the skin. At no time should the surgeon's finger touch the patient's skin, the defect to be closed, or the needle being placed. An instrument such as a forceps or a needle driver should always be used to pull on defect margins, provide support to surrounding tissue, or assist the suture needle moving through tissue (Figure 2). A similar no-touch technique has been described in surgical literature in the setting of mass closure of laparotomy wounds.³ Toothed forceps were used to manipulate the wound edges (no touch) rather than a “hand-in” approach in which the surgeon's hand was within the wound, lifting the abdominal wall to facilitate suture placement. In this study, the no-touch technique significantly reduced the



Figure 1. The use of forceps or other devices is always used to adjust and reload the needle into the needle driver.

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Figure 2. Forceps are always used in manipulating the defect's margins and in assisting the needle as it moves through the tissue.

number of glove perforation compared with the hand-in technique.

The use of two instruments, a needle driver in one hand and an adjustment tool in the other, may initially

be slightly cumbersome. However, our experience has shown that this technique may be adopted easily and quickly into normal practice, ultimately requiring no additional time for the surgeon or additional training of staff. The effort to change one's practice is minimal, and the rewards may be great in the prevention of transmissible diseases.

References

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