

Stuart J. Salasche, MD *Surgical Pearls Editor*Mark G. Lebwohl, MD *Medical Pearls Editor*

## Surgical Pearl: A rapid sanitary technique for surgical waste disposal

Arash Kimyai-Asadi, MD,<sup>a</sup> Ming H. Jih, MD, PhD,<sup>a</sup> Leonard H. Goldberg, MD,<sup>a,b</sup>  
and Paul M. Friedman, MD<sup>a,c</sup>  
*Houston, Texas*

Issues pertaining to the disposal of surgical waste are seldom discussed in the dermatologic surgery literature. Management of surgical waste as pertaining to the surgeon includes proper disposal of sharps in appropriate containers as well as proper handling and disposal of infectious non-sharp materials. Attention should be paid to two particular issues. First and foremost is to minimize the risk of exposure of patients, health care workers, office or operating room staff, and employees collecting or processing surgical waste to infectious materials through proper disposal of sharp and infectious waste. Although one may assume that these procedures are routinely adhered to in clinical practice, one study in New Zealand discovered that 56% of dental practices disposed of bloody swabs into the waste paper bin, and 24% disposed of contaminated sharp items into the general household refuse collection.<sup>1</sup>

Second is to minimize aberrant introduction of non-sharp waste into sharp waste disposal containers or of non-infectious waste into infectious waste bags. This is to minimize the financial and environmental costs associated with the processing of sharp and infectious waste. One study of university sharp boxes discovered that the full boxes contained only 14% appropriate sharps by weight and less than 50% appropriate sharps by volume.<sup>2</sup> Moreover, the implementation of a waste segregation program in one hospital resulted in a 65% reduction in infectious

waste and a 57% reduction in use of the hospital incinerator.<sup>3</sup>

We believe that the glove enclosure technique is a simple and efficient method that helps address both of the above issues. After the completion of surgery, the surgeon holds the remaining non-sharp surgical waste (eg, gauze, cotton balls, disposable drapes, pieces of tissue, etc) in the palm of one hand, making a fist to enclose the material. Using the other hand to grasp the outer edge of the cuff of the surgical glove enclosing the waste, the glove is both pulled and inverted, resulting in the enclosure of the surgical waste within the contaminated surface of the glove and leaving the clean surface of the glove that was previously in contact with the surgeon's hand on the outside. This glove can then be held within the palm of the remaining gloved hand and the remaining glove can be removed in a similar fashion except as to grasp the cuff of the glove from its inside surface to avoid exposure of the surgeon's hand to the contaminated side of the glove. This results in non-sharp surgical waste being enclosed in two layers of surgical gloves which can be readily discarded in an infectious waste container. The entire process, demonstrated in Fig 1, can be routinely completed within a few seconds.

There are several advantages to using this method. In particular, infectious waste is enclosed in a glove with only a clean surface exposed, minimizing the risk of subsequent contact with infectious materials. Indeed, it has been shown that an inverted glove can effectively contain infectious agents including viruses for several hours.<sup>4</sup> In addition, significant time is saved during clean-up of surgical material, as the process of placing surgical waste that may already be in the surgeon's hand onto the surgical tray is eliminated, as is the subsequent removal of that waste by either the surgeon or office staff. The reduction of non-sharp waste left on the surgical tray in turn helps minimize "clutter" on the tray, which can result in the masking of underlying sharp objects. Therefore, this technique potentially re-

From DermSurgery Associates,<sup>a</sup> M. D. Anderson Cancer Center,<sup>b</sup> and the University of Texas School of Medicine.<sup>c</sup>

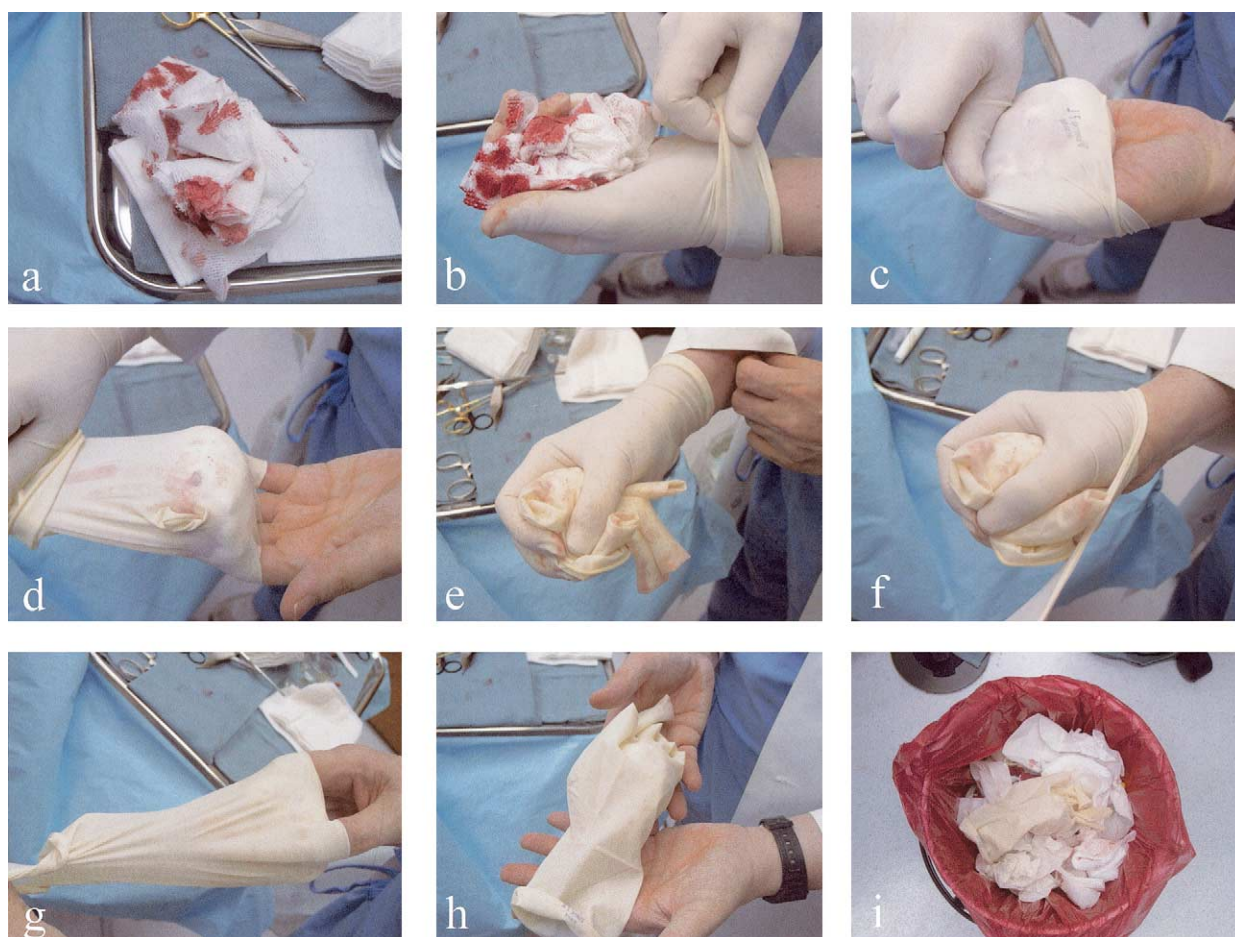
Funding source: None.

Conflicts of interest: None identified.

Reprint requests: Leonard H. Goldberg, MD, DermSurgery Associates, 7515 Main, Suite 210, Houston, TX 77030. E-mail: goldb1@dermsurgery.org.

J Am Acad Dermatol 2004;50:642-3.  
0190-9622/\$30.00

© 2004 by the American Academy of Dermatology, Inc.  
doi:10.1016/j.jaad.2003.09.030



**Fig 1.** Non-sharp surgical waste (**a**) is held within the surgeon's hand (**b**). The glove is removed and inverted, enclosing the surgical waste (**b**, **c**). The same process is repeated for the other hand (**e-g**). The surgical waste is now enclosed in two layers of surgical gloves (**h**), which can be discarded in an infectious waste container (**i**).

duces the risk of needlestick injuries to anyone subsequently processing the surgical tray. The removal of infectious waste in this manner also reduces the tendency to lump both infectious and non-infectious waste together after surgery, thus reducing the amount of inappropriate infectious waste generated as well the associated financial and environmental costs. Finally, rapid disposal of surgical waste in opaque gloves prevents patients from being disturbed by the sight of blood-stained objects and tissue left on the surgical tray. This is of particular importance in dermatologic surgery, as patients are awake and therefore able to see the surgical tray immediately after surgery.

We believe that disposal of surgical waste in a sanitary disposal pouch through enclosure in a pair

of surgical gloves is a simple, hygienic, time- and cost-effective method that reduces potential exposure to infectious materials while reducing time spent cleaning surgical waste.

#### REFERENCES

1. Treasure ET, Treasure P. An investigation of the disposal of hazardous wastes from New Zealand dental practices. *Community Dent Oral Epidemiol* 1997;25:328-31.
2. Seidman PA, Parker BM. Sharps disposal in the operating room: current clinical practices and costs. *Anesth Analg* 1998;87:634-6.
3. Hagen DL, Al-Humaidi F, Blake MA. Infectious waste surveys in a Saudi Arabian hospital: an important quality improvement tool. *Am J Infect Control* 2001;29:198-202.
4. Zbitnew A, Greer K, Heise-Qualtiere J, Conly J. Vinyl versus latex gloves as barriers to transmission of viruses in the health care setting. *J Acquir Immune Defic Syndr* 1989;2:201-4.