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Short Communication

A Unique and Economical Technique for Reducing Pathogen Exposure During Dermatologic Surgical Procedures

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Abstract

Dermatologic procedures, particularly those involving intralesional injections into cysts, abscesses and porous neoplasms, carry a significant risk of blood and tissue backspray, increasing exposure to bloodborne pathogens for both patients and providers. While existing preventive measures-such as Luer-Lok syringe hubs, larger gauge needles, small-volume infiltration and enhanced Personal Protective Equipment (PPE)-reduce this risk, contamination can still occur. This paper introduces a simple, economical technique using a modified sterile specimen cup as an additional protective barrier. By cutting a notch or circular opening in the cup, it can be positioned over the injection site, allowing instruments to pass through while containing any backspray. The cup's translucency maintains visibility of the field and gauze taped beneath it can absorb drainage. This method offers an adaptable, low-cost and effective way to minimize exposure during dermatologic procedures, complementing standard PPE and reducing the occupational risk of pathogen transmission.

Keywords: Personal Protective Equipment; Backspray; Surgical Procedures

Introduction

A variety of dermatologic procedures can expose patients and providers to significant bloodborne and tissue pathogens. Intralesional injections of anesthesia into cysts, abscesses and porous neoplasms can result in backspray of anesthetic, blood and tissue. Prevention of accidental skin contact, especially mucosal exposure, is an essential practice during any skin procedure. There are many ways to prevent occupational exposure to bloodborne infections. Various methods used to minimize the risk of backspray exposure include using Luer-Lok syringe hubs, reducing injection pressure by selecting larger-gauge needles and performing slow, small-volume infiltrations. Another new method involves taping a large surgical mask to a face shield on the injection area. In addition to these procedures, standard protective measures, such as the use of goggles, a surgical mask and a full-face shield, must be implemented. While these procedures are highly effective at reducing the risk of mucosal and skin contamination, contamination risk remains. Existing methods reduce backspray risk but don't fully eliminate exposure. This article introduces a low-cost, transparent barrier using a modified specimen cup to better contain fluids during procedures. It offers a practical enhancement to PPE and suggests dermatologists should incorporate this technique to further reduce pathogen exposure in daily practice.

Practice Gap

A variety of dermatologic procedures can cause significant bloodborne and tissue pathogen exposure to patients and providers. Intralesional injections of anesthesia into cysts, abscesses and porous neoplasms can result in backspray of anesthetic, blood and tissue. Prevention of accidental skin contact, especially mucosal exposure, is an important practice during any skin procedure [1]. Various methods used to minimize the risk of backspray exposure include the use of Luer-Lok syringe hubs, reducing injection pressure through the selection of larger gauge needles and performing slow, small-volume infiltrations. Another new method involves taping a large surgical mask to a face shield on the injection area [2]. Besides these procedures, standard protective measures such as the wearing of goggles, a surgical mask and a full face shield need to be implemented.

The Technique

Using scissors, a triangular notch is cut from the rim of a 4-ounce sterile specimen cup (Fig. 1). Alternatively, an 8 mm punch biopsy can be used to create an access point for a syringe, curette or scalpel (Fig. 2). The cup has the advantage of being inexpensive, easily cut and translucent so the entire procedure field is visualized. It is excellent for containing any backspray or bloodborne matter that may be expressed from the lesion being worked on. Gauze can be taped below the cup to collect any drainage that escapes. Syringes of all sizes, scalpels and curettes can easily fit through the notch (Fig. 3). This allows excellent visualization while maintaining sterility and safety. This technique, both simple and cost-effective, offers a prudent and resourceful way to protect dermatologists and their assistants from back spray and bloodborne pathogens during a variety of dermatologic procedures (Fig. 4).

Figure 1: Triangular notch cut into side of sterile specimen cup using scissors.

Figure 2: Alternative method making a circular access hole with 8 mm punch biopsy.

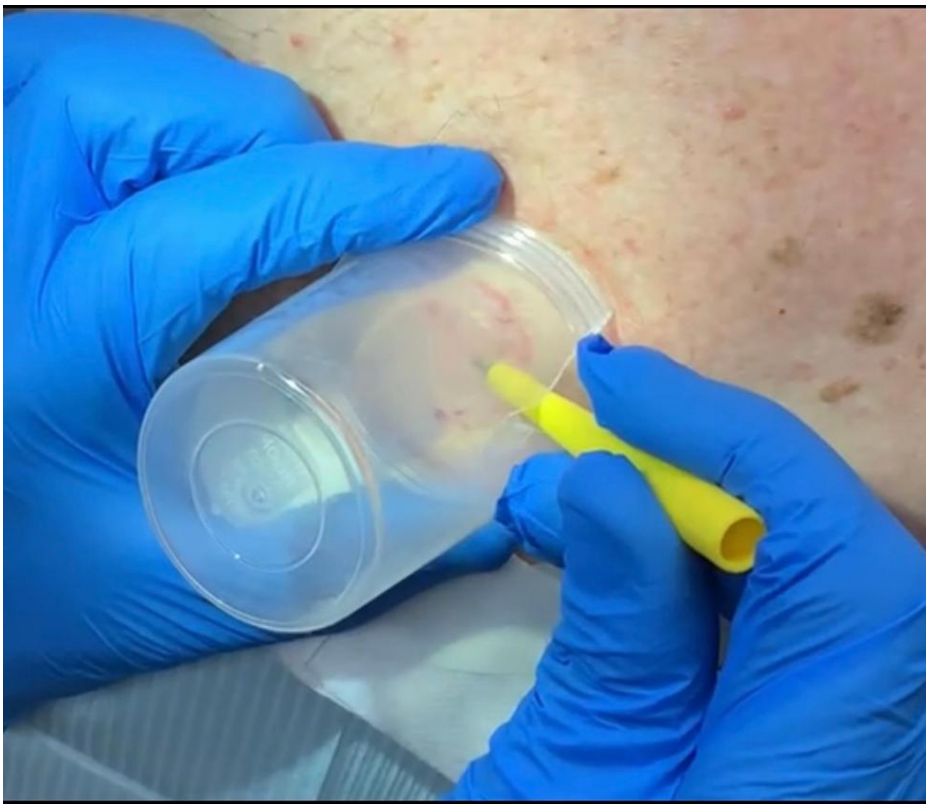

Figure 3: Incision of abscess using notched sterile specimen cup to protect from backspray.

Figure 4: Injecting anesthesia through hole in specimen cup. The access hole was created by using a 8 mm punch biopsy.

Capsule Summary

Existing methods reduce backspray risk but don't fully eliminate exposure. This article introduces a low-cost, transparent barrier using a modified specimen cup to better contain fluids during procedures. It offers a practical enhancement to PPE and suggests dermatologists should incorporate this technique to further reduce pathogen exposure in daily practice.

Practice Implications

Dermatologic procedures, particularly those involving intralesional injections into cysts, abscesses and porous neoplasms, carry a significant risk of blood and tissue backspray, increasing exposure to bloodborne pathogens for both patients and providers. While existing preventive measures-such as Luer-Lok syringe hubs, larger gauge needles, small-volume infiltration and enhanced Personal Protective Equipment (PPE)-reduce this risk, contamination can still occur. This paper introduces a simple, economical technique using a modified sterile specimen cup as an additional protective barrier. By cutting a notch or circular opening in the cup, it can be positioned over the injection site, allowing instruments to pass through while containing any backspray. The cup's translucency maintains visibility of the field and gauze taped beneath it can absorb drainage. This method offers an adaptable, low-cost and effective way to minimize exposure during dermatologic procedures, complementing standard PPE and reducing the occupational risk of pathogen transmission.

Conflicts of Interest

The authors declare no conflict of interest in this paper.

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Authors' Contributions

All authors contributed to conceptualization, treatment execution, manuscript writing and final approval.

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