

AN UNEXPECTED NEEDLESTICK INJURY

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Abstract

Needle stick injuries occur at a significant rate. According to the National Institute for Occupational Safety and Health, there are approximately 600,000 to 800,000 needlestick and other percutaneous injuries every year among healthcare workers.

Not only do the needlestick injuries put workers at risk for blood borne pathogens, but they cause a significant psychological and emotional burden for those involved. This is a report of an anesthesia resident who sustained a needlestick injury through the sterile drapes by a surgical resident.

Key words: needlestick injury

Introduction

Needlestick injuries occur at a significant rate. Not only do the needlestick injuries put workers at risk for bloodborne pathogens, but they cause a significant psychological and emotional burden for those involved. In 1991, the Occupational Safety and Health Administration (OSHA) developed the first Bloodborne Pathogen Standards, followed by revised standards in 2001. Healthcare workers all receive a mandated orientation regarding these OSHA standards. The orientations include techniques for prevention of needlestick injuries, instructions for proper use of safety devices, and information regarding the importance of reporting injuries and following up with testing and/or prophylactic treatments. Despite these efforts, needlestick injuries continue to occur and there is a significant amount of underreporting¹. Unfortunately, anesthesiologists and operating room staff are at particularly high risk for needlestick injuries. While it is known that anesthesiologists are at increased risk for injuries, few studies have investigated needlestick injuries in anesthesiologists².

Case Summary

A 60 year old patient was undergoing an open inguinal hernia repair. The first year surgical resident was closing the inguinal hernia and had almost completed suturing the fascia. The anesthesiology resident was beginning to prepare the patient for emergence. While removing the protective eye tape from the patient, the anesthesiologist felt something sharp hit her own finger. She immediately realized her finger was bleeding. The anesthesiology resident looked over the drape and saw the surgical resident holding the needle driver and needle in the air. The needle was a few feet from the surgical incision. The surgical resident had just finished pulling through

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a suture. The surgical resident had inadvertently stuck the anesthesia resident through the drapes with a contaminated needle.

A different needle and thread were used to complete the suturing. The nursing needlestick coordinator was immediately contacted. The patient was extubated and transported to the Post Anesthesia Care Unit. The patient immediately consented to necessary testing. Both the patient and anesthesiology resident were tested and were seronegative for HIV, Hepatitis B and Hepatitis C.

Discussion

The case above presents a needlestick injury that could have been prevented with proper needle use. This needlestick injury not only endangered the anesthesia resident but was also potentially dangerous for the patient. If the anesthesia resident had not quickly realized the needlestick, the needle may have been reintroduced into the patient. Another concern is that the needle had crossed the sterile drape and was no longer sterile. This would have gone unnoticed if the anesthesia resident had not been present. Another possibility is that the needle could have been introduced

into the patient's eye or other areas of the patient's face causing accidental injury.

Unfortunately, no data is available for the incidence of needlestick injuries that occur specifically in anesthesia residents or anesthesiologists. A recent study of over 700 surgical residents reported a mean of 3.8 needlestick injuries during residency training. By the 5th postgraduate year, 99% of surgical residents reported at least one needle stick injury. The surgical residents reported that in their opinion, only 20% of the needlestick injuries were unpreventable².

Additional measures may need to be put in place to reduce the number of needlestick injuries. Studies need to be done to determine the incidence of needlesticks in anesthesiologists. In addition to standard OSHA training on bloodborne pathogens, residents in high risk fields such as anesthesiology and surgery should receive specialty specific training. Specifically regarding this case, surgical residents should be instructed to suture in a controlled area and to use caution when pulling through sutures. This case illustrates that a needlestick through the drapes is a possibility, and that anesthesiologists should be aware of this possibility.

References

1. LEE JM, BOTTEMAN MF, XANTHAKOS N, NICKLASSON L: Needlestick injuries in the United States: epidemiologic, economic, and quality of life issues. *AAOHN J*; 2005, 53:117.
2. CHAKRAVARTHY M: Enhanced risk of needlestick injuries and exposure to blood and body fluids to cardiac anesthesiologists: need for serious introspection. *Ann Card Anaesth*; 2010, 13:1.
3. MAKARY MA, AL-ATTAR A, HOLZMUELLER CG, SEXTON JB, SYIN D, GILSON MM, SULKOWSKI MS, PRONOVOST PJ: Needlestick injuries among surgical residents in training. *N Engl J Med*; 2007, 356:2693.