



SURGICAL GLOVE PERFORATION AND THE RISK OF SURGICAL SITE INFECTION

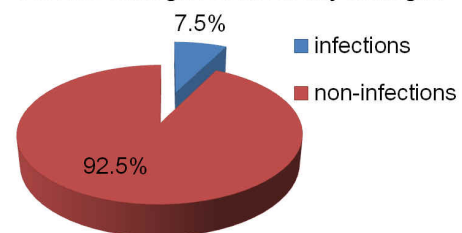
Surgical site infections (SSIs) are caused by bacteria that get in through incisions made during surgery. They threaten the lives of millions of patients each year and contribute to a significant healthcare cost.

GLOVES PERFORATION ABOUT SSI

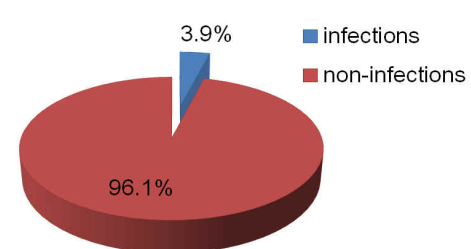
Gloves perforation is associated with SSI; if glove perforation occurs while the surgery goes on, the bacteria could be very likely to pass through surgeons' hands to the surgical site of patients and thus causes infection. A study performed at the University Hospital Basel (Arch Surg. 2009; 144 (6): 553-558) investigated the frequency of infections associated with visible damage to surgical gloves.

In 677 of 4,147 surgical procedures, the gloves were visibly damaged and infections occurred in 7.5 percent of these procedures. However, of the 3,470 procedures where the gloves remained intact, infections were identified in only 3.9 percent of the cases.

SSI rate when gloves are visibly damaged



SSI rate when gloves remain intact



Though 3.6% of difference may look small to some of the people, it is actually a tremendous difference when it is turned into the amount of extra healthcare cost. Taking U.S. as an example, it could be referred to patients spending 14,400 extra days in hospital at a cost of an additional USD 360 million per year.

REFER TO THE SHEA STUDY DATA

The damage to the glove membrane is primarily caused by needle puncture, pointed bone fragments or sharp surgical instruments, and according to the report of infection control and hospital epidemiology, which is published monthly by Cambridge University Press for Healthcare Epidemiology of America (SHEA), the risk of the glove perforation is proved to increase with the duration of the operation:

Time for wearing gloves	Resulted in perforations	Rate of perforations
90 minutes	46 / 299(pairs)	15.4%
91~150 minutes	54 / 299(pairs)	18.1%
Over 150 minutes	71 / 300(pairs)	23.7%

P.s.: The rate above could be higher if gloves do not fit properly.

So here comes the question.

How to reduce glove perforation?

The answers to the question had become key factors to reduce the risk of SSI. Except for double gloving, changing surgical gloves regularly during surgery is also considered an effective way to reduce the risk of SSI. It is recommended that surgeons, first assistants and surgical nurses directly assisting in the operating field change gloves every 90 minutes of surgery.

References:

1. Mistel H et al. Surgical glove perforation and the risk of surgical site infection. Arch Surg. 2009;144(6)553-558.
2. Infection control and hospital epidemiology (ICHE) 2009; 30:409-414
Lars Ivo Partecke, MD; Anna-Maria Goerdt, MD; Inga Langner, MD; Bernd Jaeger, Sc, PhD; Ojan Assadian, MD, DTMH; Claus-Dieter Heidecke, MD, PhD; Axel rammer, MD, PhD; Nils-Olaf Huebner, MD
3. WHO | Global guidelines on the prevention of surgical site infection.
<http://www.who.int/gpsc/ssi-prevention-guidelines/en/>

Disclaimer: The information above is summarized by Mocare Health for general purpose and while we endeavor to accurately summarize the information, we make no representation or warranties to the accuracy of the summary.

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