



Needlestick injuries, glove perforation and round-tipped blunt needles

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Dear Sir,

We read with great interest the article by Battersby and colleagues¹ about the impairment of surgical knot quality due to double gloving. The practice to wearing two pairs of gloves during surgical procedures to reduce the risks of exposure to patient's blood and transmission of infectious organisms has been recommended worldwide, by several healthcare authorities, also on the basis of a Cochrane review showing the absence of compromised dexterity as a result of double gloving². The study performed by Battersby and Colleagues clearly shows that double gloving reduces the quality of surgical knots by 24%, no matter the suture type used. A wider reduction of knot quality (50%) was noted with 4.0 sutures. These results question the safety of surgical knots tied wearing double gloves and, as a consequence, push surgeons to consider other precautions to reduce bloody contamination during surgery.

The use of blunt needles seems to be a valid modality to reduce the risk of intraoperative glove perforation, percutaneous injuries, and contact between exposed skin and patient's blood. We performed a randomized study designed to determine whether the use of a round-tipped blunt needle for abdominal fascia closure after an emergency operation could be effective in reducing the frequency of injuries and glove perforation and increasing surgeons' safety³. During the abdominal fascia suture there is, in fact, the greatest risk for contamination, with a needlestick injury rate of 52% to 76%^{4,5}, because a great effort is required to pass the needle through muscles and fascia, the needle tip is often hidden from the direct vision of the surgeon, and the surgeon may have decreased attention, being often at the end of an exhausting emergency procedure.

In our experience, sharp needles were responsible for all needlestick injuries and the risk of glove perforation was 7-fold lower when blunt needles were used. From that time, we routinely use the blunt needle for celiotomy closure with excellent results.

In conclusions, we believe that blunt needles represent one of the more effective modalities to prevent hand needlestick injuries and contamination and that they should always be used, especially in emergency surgical procedures.

REFERENCES

1. Battersby CLF, Battersby NJ, Hollyman M, Hunt JA. Double-gloving impairs the quality of surgical knot tying: a randomized controlled trial. *World J Surg* 2016;40:2598-2602

- 1
2
3 2.Mischke C, Verbeek JH, Saarto A et al. Gloves, extra gloves or special types of gloves for
4 preventing percutaneous exposure injuries in healthcare personnel. *Cochrane Database Syst Rev*
5 2014;3:CD009573
6
- 7
8 3.Mingoli A, Sapienza P, Sgarzini G, et al. Influence of blunt needles on surgical glove perforation
9 and safety for the surgeon. *Am J Surg.* 1996;172:512-7.
10
- 11 4. Dauleh MI, Irving AD, Townell NH. Needle prick injury to the surgeon: do we need sharp
12 needles? *J R Coll Surg Edinb.* 1994;39:310-1.
13
- 14 5. Hussain SA, Latif AB, Choudhary AA. Risk to surgeons: a survey of accidental injuries during
15 operations. *Br J Surg.* 1988;75:314-6.
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