

No significant benefit from the use of double-gloving or perforation indication system

Double gloving and a glove perforation indication system during the dental treatment of HIV-positive patients: are they necessary C M E Avery, P Gallagher and W Birnbaum *Br Dent J* 1999; 186: 27–29

Aim

To compare the incidence of glove perforation when double- or single gloved during routine treatment of HIV-positive patients. A glove perforation indication system was also assessed.

Design

Prospective, randomised and open study of glove perforation.

Methods

138 consecutive HIV-positive patients underwent routine dental treatment by senior dental staff and dental hygienists in a teaching hospital. Staff wore either single gloves (Regent Biogel D or standard surgical gloves) or double gloves (Regent 'Reveal' perforation indication system or standard surgical gloves). A subjective assessment of glove comfort, sensitivity and ease of donning was made using a visual analogue scale.

Results

The incidence of glove perforation/procedure was low, 2.9%. There were no skin penetrating injuries, visible exposure to body fluids or unnoticed perforations. Double gloving was subjectively

less comfortable and sensitive than single gloving ($P < 0.0001$). The glove perforation indication system did not increase the detection of intra-operative perforations.

Conclusions

There is unlikely to be any significant benefit from the use of a double gloving technique or perforation indication system during the routine dental treatment of HIV-positive patients.

In brief

- The incidence of glove perforation during routine dental treatment of HIV positive patients was low. There were no penetrating injuries or visible skin contamination.
- The decision whether to double glove is influenced by several factors.
- There is little evidence to support double gloving or the use of a glove perforation system during the dental treatment of HIV positive patients.

Comment

The appropriate wearing of protective gloves is a key aspect of cross-infection control in clinical practice, lessening the risk of physical injury and infection transmission. Avery and co-workers report that there is no advantage to wearing more than one pair of protective gloves in reducing the frequency of physical injury, hence occupational transmission of infection. Furthermore, double-gloving significantly increases the discomfort of wearing protective gloves. Like all aspects of cross-infection control, protective gloves do not provide absolute protection. There are many factors that may influence potential benefits of glove wearing including the abilities (and temperament!) of the health care staff, the nature and timing of the clinical procedure, the level of clinical assistance, and the type and quality of the protective glove.¹ The wearing of protective gloves can give rise to allergic disease in clinical staff and patients,²⁻⁶ that may only be partially reduced by careful clinical evaluation.⁷ The latex and powder of the gloves can also adversely affect dental restorative procedures (for example interfering in the use of impression materials and/or reducing the shear bond strength of porcelain laminate).⁸⁻¹¹

The frequency of appropriate usage of protective gloves is the most significant factor to influence their benefit in minimising physical injury and infection acquisition. Studies still indicate that clinicians and attendant

staff do not always wear appropriate gloves, nor change them between patients.¹²⁻¹⁴ At the present time it would seem best that rather than health care staff being concerned about the number, or precise type of protective gloves that should be worn for specific clinical procedures, they should maintain a simple policy of wearing one pair of high quality gloves for each patient, and change them when there is any macroscopic evidence of deterioration. There must of course be appropriate financial remuneration to ensure such a policy is maintained.

It is now almost 18 years since the first clinical description of HIV disease, and 40 years since the potential risk of hepatitis B being spread within a dental setting was identified. As we approach the millenium it surely cannot be beyond our powers to adhere to a simple procedure of cross-infection control, and for manufacturers to develop protective gloves that give rise to few adverse effects.

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