Guest Editorial

But the horse has left the stable

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I am writing in response to Dr John Hardie's recent guest editorial, "Are current infection control practices justified?" (*Quintessence International* 1993;24: 683–686).

Dr Hardie's words and sentiments resonate familiarly in my mind, because in the nearly 8 years I served as Director of Scientific Affairs at the American Dental Association, I heard from hundreds (perhaps thousands) of dentists about the "irrationality" of the developing concerns about the need for stringent infection control in the dental office. They claimed there was no objective evidence that dental procedures are associated with the transmission of infectious disease, that (to use Dr Hardie's own words) "not one case of dental equipment–mediated cross infection has been confirmed in the literature, ... there are no controlled studies to demonstrate that the wearing of gloves will prevent the spread of either HIV or HBV during dental treatment," and that the pathogenicity of oral microbes is very low.

Some, but not all, of this is true. Let's first look at hepatitis B virus (HBV). By 1975 it was known that the incidence of HBV in dentists was three times that of the general population, and five times greater in oral surgeons. Between the mid-1970s and 1987, there were nine outbreaks of HBV that were directly traced to HBV-infected dentists, and two of these patients died. Dr Hardie states that "HBV is readily prevented by immunization." This statement is true if there is an effective response to the vaccine, but it is widely known that the success of the vaccine is affected by age, genetic factors, site of injection, and size of dose. Most recipients are not tested after vaccination, and therefore are not likely to know whether they have achieved immunity against HBV.

Hepatitis C virus, which Dr Hardie does not mention, has been implicated by some infectious disease experts as a potential problem for dentists who, it is claimed, have a higher incidence of markers for hepatitis C virus than is found in the general population.[1] Other researchers contest this finding (Siew C, personal communication).[2] Hepatitis C virus, like HBV, is transmitted by blood, sexual contact, and household contact.

The Centers for Disease Control (CDC), in 1987, classified saliva in dentistry as usually contaminated by blood and, therefore, implicated saliva in dentistry as a vector for transmission of all blood-borne viruses. This meant that saliva in dentistry was one of the body fluids for which CDC recommended universal precaution. The Occupational Safety and Health Administration (OSHA) adopted CDC's definition of saliva in dentistry and classified it as a potentially infectious material. Furthermore, transmission of HBV through saliva presumably not contaminated by blood has been documented.

Against this background of documentation for the transmission of the hepatitis viruses through saliva, several other defining events occurred in the 1980s and 1990s. A dentist, working in the inner city of New York and using gloves only sporadically, probably acquired human immunodeficiency virus (HIV) infection occupationally. Currently, six dental workers, including a dentist, are under investigation for possible occupational acquisition of their HIV infections. The most outstanding and perplexing event was the case in which a Florida dentist transmitted HIV infection to six patients, in a manner as yet unknown. The two prime theories for these transmissions are that the patients were infected either through direct contact with the dentist's blood or through indirect contact via a dental instrument. These theories provide potent reasons for wearing gloves during dental procedures and for rigorous sterilization of dental instruments, whether they be critical, semicritical, or noncritical.

In a recent article, Mandel[3] cites a variety of infectious hazards in the dental office, including herpes simplex virus, cytomegalovirus, respiratory infections (in-

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cluding tuberculosis), syphilis, and legionellosis. To be sure, transmission of these agents to dental workers is rare, and certainly ordinary masks offer scant protection against tuberculosis, but the possibilities of infection in the dental office are real and the even modest advantages offered by standard infection control would seem prudent and sensible.

Under the apparently onerous pressure of OSHA, CDC, and emerging infection control guidelines, dentists have espoused the requirement for scientific rigor with singular fervor. They demand to know where is the evidence, where are the controlled studies, where are the documented cases. I submit there is also something to be said for intuition. Some things seem intuitively right, even though there may be no double-blind, cross-over, rigorously controlled study to validate them. It was intuitively right that physicians, delivering their patients of babies, abandon their frock coats and unwashed hands to prevent the highly common postpartum development of puerperal fever. It is intuitively right that when the dentist places an instrument or her own hands into a patient's mouth that they be scrupulously clean and sterilized, if possible. It is intuitively right that, prior to an injection of a drug, the site be swabbed with alcohol or iodine, even though no published data exist to show that, in the absence of the disinfection of the skin, there are horrible consequences. To demand incontrovertible evidence that a handpiece has caused someone's death or serious infection before willingly agreeing to sterilize that handpiece is to fall into the moral obtuseness of the cigarette industry, which, 30-some years after the first report of the Surgeon General on the relationship between smoking and cancer, claims that no solid evidence for a cause-and-effect relationship has ever been published.

The American Dental Association's Division of Scientific Affairs, well before the Florida case of provider-to-patient HIV transmission, believed strongly that it must review its infection control guidelines in the light of the growing epidemic of infectious disease and the increasing patient concern about the safety of the dental office. The Acer case and the subsequent papers by Lewis and colleagues (given blinding publicity by the media) about the "dangers" lurking in the dental handpiece raised the level of anxiety exponentially. The ADA was not alone in its concerns, for at the same time, other agencies were doing the same thing. Ultimately, after the most extensive and careful consultation with experts, researchers, handpiece manufacturers, and disinfectant manufacturers, the ADA, the Food and Drug Administration, the Fédération Dentaire Internationale, and then the CDC came out with revised infection control guidelines that were based on solid intuition, some scientific research, extensive knowledge about and experience with HBV, the facts of the Acer case, and the understanding that new infectious agents could appear as suddenly and mysteriously as HIV. These infection control guidelines have been adopted or endorsed by virtually every health agency, dental school, and hospital dental service in the country.

No, Dr Hardie, there is no single research paper, no single "smoking gun" that proves that the handpiece is a vector for transmission of the deadly disease, or that failure to wear gloves will have fatal consequences; but, yes, current infection control practices are justified. They provide assurance that the dental profession is willing to go to some modest lengths to ensure the health of patients and to assuage their fears.

There are still dentists, like Dr Hardie, who protest the inconvenience of infection control, as currently recommended by virtually every health agency, association, or educational institution in the world. But it's too late. The stable door is open, the horse has left, and the patient now comes to the dental office with some very specific and well-informed expectations of how that office and its professionals will be managed. But every dentist is free to choose how he or she will practice (unless he or she is an employee and falls under OSHA's standard). And so, Dr Hardie, you too are free to choose, as are, in fact, your patients.

References

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