Editorial: Infection with contact lens wear

In this issue R. L. Cooper and I. J. Constable report several instances of corneal infection related to prolonged wearing of soft contact lenses. More than one type of lens material was used, and the wearing periods varied but were all within the pattern now known as constant wear or extended wear. This period can be logically taken to mean anything more than 24 hours, but in practice is often much longer. For each patient the lens material and the number of days before the lens has to be removed are often not related. This report is not isolated. Ruben (1976) reported an incidence of corneal infection in contact lens wear as determined by hospital outpatient reports and concluded it was higher for soft-lens wearers. The same author also reported in a well-controlled series of daily-wear patients with low refractive error using heat disinfection that no infection occurred over a year of observation.

There is no mechanism at present for reporting eye infection due to contact lens wear, and therefore accurate assessment of the problem is impossible. Nevertheless, corneal infection in a contact lens wearer who for all intents and purposes has normal eyes is a serious matter. Permanent severe loss of sight from contact lens wear should not occur, though one must expect a higher incidence in patients with abnormal eyes who require contact lenses or prosthetics, some of whom may be prone to recurrent eye infection. The latter group are under the supervision of the medical practitioner, and the side-effects of treatment are often anticipated and controlled when they occur.

The pertinent question to be asked by the practitioner who is responsible for the care of the general public wishing to wear contact lenses is: Can infection of the cornea be completely avoided?

The regimens for the control of pathogens likely to infect the contact lens, its solutions, and container have been described in several papers, both for hard and soft lenses. The BSI, Australian Standards, FDA, and, more recently, the Working Party on Contact Lens Preparations Draft Report for the UK Department of Health have either published or have in draft form proposals for the licensing and control of preparations used in conjunction with contact lenses and likely to be the source of infection. But it is evident that irrespective of the quality, efficiency, and safety of preparations that the wearer of contact lenses uses there remains the problem of his failure to comply with instructions and the manufacturer's or practitioner's ignorance of the elements of hygiene. This has resulted in some non-medical practitioners thinking that cold sterile saline by itself will disinfect a lens or keep a lens and case sterile.

But apart from the introduction of pathogens on to the eye from faulty technique in handling and disinfecting a lens there remains the variable factor that at one instant the corneal and other superficial eye tissue may be within normal limits, and at the next a foreign body or imperfect lens may inflict trauma or anoxia which may result in cell oedema and necrosis and predispose an eye to infection. The public will be protected more in the future from materials and lenses and solutions likely to have a toxic effect on their eyes. The practitioner should advise the individual intending to wear lenses for long unsupervised periods of the conditions likely to enhance infection and toxic reactions of the eye, and that a problem does exist. The manufacturer who advises lenses for specific purposes, such as permanent wear, must ensure that the lenses and preparations used with the lenses provide a safe system as tested by laboratory and clinical trials by reputable teams of workers. Provided manufacturers, practitioners, and patients take all precautions, there is little risk of eye infection from the sensible use of contact lenses. But where a contact lens has a proved risk of infection, whether because of its material, fitting, method of disinfection and cleaning, or period of wear, the authorities and the patient must be so advised. It is accepted practice that a surgical or medical treatment has to be explained to the patient as to the benefits, complications, and failure rate before a patient agrees to treatment. Likewise a patient must be informed about the risks of constantly wearing contact lenses before beginning.

Reference