TABLE 29-15 Insertion and Removal of Soft Lenses

Insertion
- Wash the hands with noncosmetic soap and rinse thoroughly; dry the hands with a lint-free towel.
- Remove the lens for the right eye from its storage container.
- (Optional) Rinse the lens with saline solution to dilute any preservatives left from disinfection.
- Place the lens on the top of a finger and examine it to be sure it is not inside out. This can be done by using the “taco test.” Gently fold the lens at the apex (not the edges) between the thumb and forefinger. The edges should look like a taco shell with the edges pointed inward. If the edges roll out, the lens is inverted and must be reversed.
- Examine the lens for cleanliness. If necessary, clean it and rinse again.
- Insert the lens on the right eye using the same procedure as for hard and RGP lenses (see Table 29-8).
- Repeat the process for the left eye.

Removal
- Before removing the lenses, wash hands with a noncosmetic soap; rinse the hands thoroughly and dry them with a lint-free towel.
- Using the right middle finger, pull down the lower lid of the right eye. Touch the right index finger to the lens and slide the lens off the cornea as shown in drawing A.
- Using the index finger and thumb, grasp the lens and remove it (see drawing B).
- Repeat the procedure for the left eye.

The proper care and cleaning of the contact lens storage case is as important as lens care itself. A storage case should be able to hold at least 2.5 mL of the storage solution. This minimizes the chance that the soaking solution will be overwhelmed by an inoculum of bacteria. The lens case should be cleaned thoroughly on a routine basis and replaced at least every 3 months. Routine cleaning entails air drying the case between periods of use and scrubbing it weekly. Air drying should be done daily as this discourages biofilm formation. Some manufacturers recommend cleaning the case twice weekly using a few drops of lens cleaner and hot water. If the case can withstand routine boiling (such as those cases made of polycarbonate or noryl plastic), it can be boiled in a pot of water for 10 minutes weekly. Examine the case for cracks and replace it periodically. Lens cases can be contaminated with a biofilm that will attract pathogens and increase the risk of infection.

Assessment of Contact Lens–related Problems: A Case-based Approach

Although contact lenses are usually safe, lens wearers can experience a variety of problems. During the patient interview, the practitioner should first determine what type of eye problems exist and how long the patient has been experiencing them. Asking the patient whether a history of eye problems exists and what medications are currently being taken will give a general sense of the etiology and urgency of the current eye problem. The answers will also help the practitioner determine whether the problem is related to noncompliance with care regimens or to drug-lens interactions.

Determining which type of contact lenses a patient is wearing and for how long is crucial in assessing problems related to improper lens care or deteriorated lenses. Each type of lens has unique physical characteristics that in turn dictate which methods and products for cleaning and disinfecting lenses are appropriate. Patients should be asked to describe how they care for their lenses, which lens care products they use, and whether they have recently changed products. Many lens care–related problems are minor and can be easily solved by a knowledgeable practitioner.

The individual sections on types of contact lenses discuss problems related to lens care. The following sections discuss other types of lens-related problems and their symptoms, as well as problems that require medical referral.

Precautions for Contact Lenses

Contact lenses generally can match or exceed the vision obtained with spectacles. However, depending on the type of lens, vision may become worse in certain situations. Some patients wearing lenses with high water content may experience hazy vision around the edges of objects. In some cases, patients wearing hard lenses experience nighttime ghosting, which occurs when the patient’s pupil dilates enough to see the edges of the lens. This can sometimes be corrected with larger-diameter lenses. Other patients complain of spiderweb vision, usually at night; this can be due to crazing (i.e., the development of fine cracks) and is usually experienced with RGP lenses.

Potential Transmission of Viral Infections

The human immunodeficiency virus (HIV) has been isolated from the tears of infected individuals as well as from the contact lenses worn by infected individuals. This seemingly becomes an issue in the case of trial contact lenses, which may be reused by different patients in the lens-fitter’s office. Use of disposable contact lenses is advisable in this situation. Generally, trial lenses are not dispensed to a patient except as loaner lenses (i.e., to a patient waiting for new replacement lenses). Even in this scenario, after the lenses have been used in any patient, they are disinfected with heat or chemicals before being dispensed to another patient. Studies have shown that heat and the routinely available hydrogen peroxide products are effective in inactivating HIV.

Adverse Effects of Drugs

Many undesired effects have been reported when a patient who wears contact lenses ingests, applies, or encounters certain drugs (Table 29-16). The practitioner must understand these drug-induced problems to counsel patients effectively.