MANAGEMENT OF KERATOCONUS

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INTRODUCTION

The incidence of keratoconus among Japanese people is roughly estimated at 1 in 10,000; since there are approximately 100 million people in Japan, this means there should be about 10,000 cases of keratoconus in Japan (Itoi et al., 1974). About one tenth of this number have visited our clinic as new patients in the past five years, thus making our place one of the largest keratoconus centers in the world. This paper reports on our experience in the management of keratoconus.

KERATOCONUS AMONG JAPANESE

Japanese keratoconus (Itoi and Futenma, 1975; Itoi, 1976) is somewhat different from Caucasian keratoconus. About two thirds of Japanese keratoconus patients are male, while most Caucasian patients are female (Duke-Elder, 1965). About half of Japanese keratoconus patients have what we call an anterior-type keratoconus, which is similar to the form found in Caucasians; the remaining half, however, have what is called a posterior-type keratoconus, as shown in Figure 1. 97% of the anterior-type keratoconus cases have both eyes affected, while only 39% of the posterior-type are bilateral. Posterior-type keratoconus breaks out later than anterior-type keratoconus; it often appears after the age of 20, sometimes even after the age of 35.

Fig. 1. Anterior-type Keratoconus (A) and Posterior-type Keratoconus (B).

The apex of the cone of posterior-type keratoconus is usually far from the pupillary area, as shown in Figure 2. It progresses faster and has a greater...
chance of Bowman's or Descemet's rupture than does the anterior type.

Besides anterior-type and posterior-type keratoconuses, there are atypical keratoconuses, as shown in Figure 3.

Fig. 2. Posterior-type keratoconus, the apex of the cone is far from the pupillary area.

Fig. 3. Keratoconus-like diseases: (1) (pellucid) marginal degeneration; (2) concentric double keratoconus; (3) double keratoconus; (4) posterior keratoconus with marginal degeneration; (5) keratoconus with thin cornea; (6) multiple keratoconus.

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When a keratoconus patient comes to our clinic, besides routine examinations, we perform photokeratometry, using the apparatus we have developed (Fig. 4). The photokeratometer can cover the whole cornea, from limbus to limbus, and from the photo taken by it, the corneal shape can be

Fig. 4. The new photokeratometer which can cover the whole cornea, from limbus to limbus.