

Prognosis of Upper Eyelid Epiblepharon Repair in Down Syndrome

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• **OBJECTIVE:** To evaluate the recurrence rate after upper eyelid epiblepharon repair in patients with Down syndrome.

• **DESIGN:** Retrospective, observational study.

• **METHODS:** Total of 578 Korean children (21 with Down syndrome patients, 557 with non-Down syndrome patients), who had undergone epiblepharon repair and were followed up for more than 2 months, were included in this study. The recurrence rate was compared between two groups at 2, 6 months after surgery. Recurrence was defined as the re-appearance of cilia touching to cornea. The recurrence rate was also analyzed according to whether patients had undergone concomitant z-medial epicanthoplasty or not.

• **RESULTS:** Lower eyelid epiblepharon repair was performed on 22 eyelids of Down syndrome patients, and 1072 eyelids of non-Down syndrome patients. At 3 months after surgery, the recurrence rate was not significantly different between two groups ($P = 1.00$). Upper eyelid epiblepharon was repaired on 40 eyelids of Down syndrome patients, and 204 eyelids in non-Down syndrome patients. At 2 and 6 months after surgery, the recurrence rate was significantly higher in Down syndrome patients (27.5% and 29.4%) than non-Down syndrome patients (3.4% and 4.6%) ($P = 0.000$, $P = 0.004$, respectively). The recurrence rate of upper eyelid epiblepharon repair was not affected in both groups whether Z-epicanthoplasty was combined or not ($P = 1.00$ in both groups).

• **CONCLUSIONS:** In Down syndrome patients, the recurrence rate after upper eyelid epiblepharon repair was higher than non-Down syndrome patients. The effect of combined Z-medial epicanthoplasty was limited in both groups. (Am J Ophthalmol 2010;150:476–480. © 2010 by Elsevier Inc. All rights reserved.)

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EPIBLEPHARON IS RATHER COMMON CONDITION AMONG Asian children^{1,2}; in this condition, a fold of skin and the underlying orbicularis muscle press the lashes against the eyeball. In general, the lower eyelids are commonly involved as compared to the upper eyelids.^{1,2} Recurrence rates after surgical correction are considerably low,^{2–5} and recent techniques of correction include cilia rotating tarsal fixation suture⁶ and Z-medial epicanthoplasty.⁷ However, the incidence and clinical manifestations of epiblepharon that occurs in Down syndrome patients remarkably differ from those of epiblepharon that occurs in non-Down syndrome Asian children.⁸ The incidence of epiblepharon is much higher in Down syndrome patients than in non-Down syndrome patients, and characteristically, the upper eyelids are predominantly involved in the case of Down syndrome patients. Moreover, natural remission of the upper and lower eyelid epiblepharon rarely occurs in the case of Down syndrome patients; this is in contrast to that observed in the case of non-Down syndrome patients.⁸ Therefore, almost all Down syndrome patients with epiblepharon need surgical correction. To our best knowledge, surgical success rate of epiblepharon repair in the case of Down syndrome patients has not been reported. In this study, we evaluated and compared the surgical results of epiblepharon repair in the case of Asian Down syndrome patients and in that of non-Down syndrome patients.

METHODS

THIS STUDY WAS A RETROSPECTIVE OBSERVATIONAL study. The following patients were included: those who had undergone upper eyelid epiblepharon repair performed by 2 of the authors (H.K.C. & N.J.K.) at Seoul National University Hospital, Seoul Metropolitan Government Seoul National University Boramae Medical Center, Seoul National University Bundang Hospital, between June 2003 and July 2008. Epiblepharon was diagnosed when cilia touched cornea with horizontal fold of redundant skin and the underlying pretarsal orbicularis oculi muscle² without inward rotation of eyelid margin. Surgical indications were severe corneal erosion, i.e., horizontal erosion, in more than one-third of the cornea or irritative symptoms such as foreign body sensation, ocular pain, or tearing that the parents thought were remarkable even after the