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Long-term Effect of Scleral Encircling on Axial Elongation

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## Abstract

**Purpose:** To determine the long-term effect of scleral encircling on the progression of myopia

**Design:** Retrospective, clinical cohort study

**Methods: SETTING:** Single-center academic hospital (Severance Hospital).

**STUDY POPULATION:** The study included seventy-six eyes of 38 patients (mean age  $37.21 \pm 15.76$ ) who have undergone retinal detachment surgery with scleral encircling

**OBSERVATIONAL PROCEDURES:** Axial length was measured preoperatively, at 6 months after surgery, and at the most recent visit. They were followed-up for at least 12 months.

**MAIN OUTCOME MEASURE:** We compared the changes of axial length per month between operated eyes and contralateral eyes(control group).

**Results:** Operated group showed more rapid changes in axial length from 6 months after surgery to the time of the last follow-up than that in control group ( $0.020 \pm 0.033$  mm/month vs.  $0.002 \pm 0.002$  mm/month,  $P = .002$ ; mean follow-up,  $26.05 \pm 11.39$  months). Similar trends were observed during the entire follow-up period ( $0.065 \pm 0.062$  mm/month vs.  $0.008 \pm 0.020$  mm/month,  $P < .001$ ). Subgroup analysis showed that both myopic and highly myopic group showed no significant difference of changing rate of axial length during the first 6 postoperative months ( $P = .267$ ), from 6 months after surgery to the final assessment point ( $P = .144$ ) or over the entire observation period ( $P = .507$ ).

**Conclusions:** Encircling the sclera may accelerate progression of myopia by significantly increasing axial length. The degree of myopia itself does not contribute to a significant difference in the increased axial length.

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