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# Recurrence after Spontaneous Resolution of an Idiopathic Epiretinal Membrane

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## Key Words

Epiretinal membrane · Internal limiting membrane · Recurrence · Spontaneous resolution

## Abstract

We report a case of recurrent epiretinal membrane (ERM) after spontaneous resolution of an idiopathic ERM. A 65-year-old female demonstrated a spontaneous improvement in visual acuity from 0.1 to 1.2 in her left eye attributable to spontaneous resolution of idiopathic ERM due to posterior vitreous detachment. Thereafter, however, her visual acuity again decreased to 0.2 because of the recurrence of ERM. Her visual acuity improved to 0.8 after surgical removal. A microscopic examination of the excised specimen showed a characteristic undulating internal limiting membrane (ILM) and a continuous sheet of cells overlying the inner surface of the ILM. This case report illustrates that although spontaneous ERM resolution is rare, there is a possibility of recurrence even after spontaneous ERM resolution.

## Introduction

An idiopathic epiretinal membrane (ERM) usually occurs in elderly patients and is usually associated with posterior vitreous detachment (PVD). The spontaneous resolution of idiopathic ERM is a rare clinical phenomenon [1]. A vitrectomy with membrane peeling in symptomatic patients usually results in successful membrane removal with significant improvement of visual function [2]. However, idiopathic ERM might recur after surgical removal [3]. This report presents a case of recurrent ERM after spontaneous resolution of idiopathic ERM.

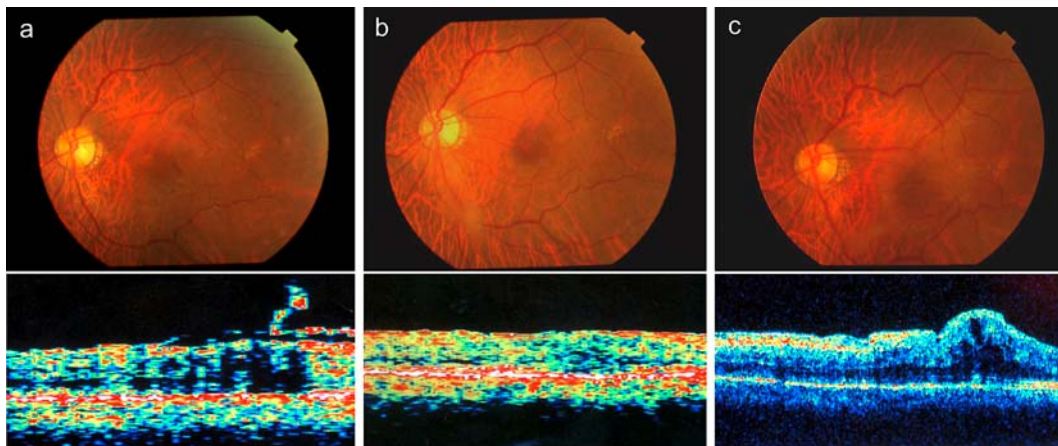
## Case Report

A 65-year-old female was referred to our hospital with idiopathic ERM of the left eye in July 2003. Her visual acuity was 1.2 in the unaffected right eye and 0.1 with marked distortion in the left eye. A fundus examination of the left eye revealed a distinct ERM, but PVD was not confirmed (fig. 1a). Optical coherence tomography (OCT) demonstrated a partially rolled-up ERM, diffuse retinal thickening, and the absence of foveal pit (fig. 1a). When she was admitted to our hospital for surgery 1 month later, her visual acuity had improved to 0.5. A fundus examination showed that PVD had occurred and ERM had spontaneously resolved with minimal retinal folds remaining (fig. 1b). OCT clearly showed reduced foveal thickness and a smooth retinal surface (fig. 1b). Her diagnosis was resolution of the idiopathic ERM, which had occurred subsequently to PVD [1], and we decided to continue observing the patient without surgery. Visual acuity improved to 1.2 in May 2005. However, she presented again for recurrence of ERM in January 2007. The visual acuity of her left eye decreased to 0.2. A fundus examination revealed a semi-transparent ERM with a size of about 2 disk diameters (fig. 1c). An OCT scan demonstrated macular thickening with areas of hyporeflective intraretinal cystic spaces and an undulating retinal surface (fig. 1c). After providing informed consent, the patient underwent a vitrectomy combined with cataract surgery. A microscopic examination of the excised specimen showed the characteristic undulating internal limiting membrane (ILM) and a continuous sheet of cells overlying the inner surface of the ILM (fig. 2). Nine months after surgery, her visual acuity improved to 0.8.

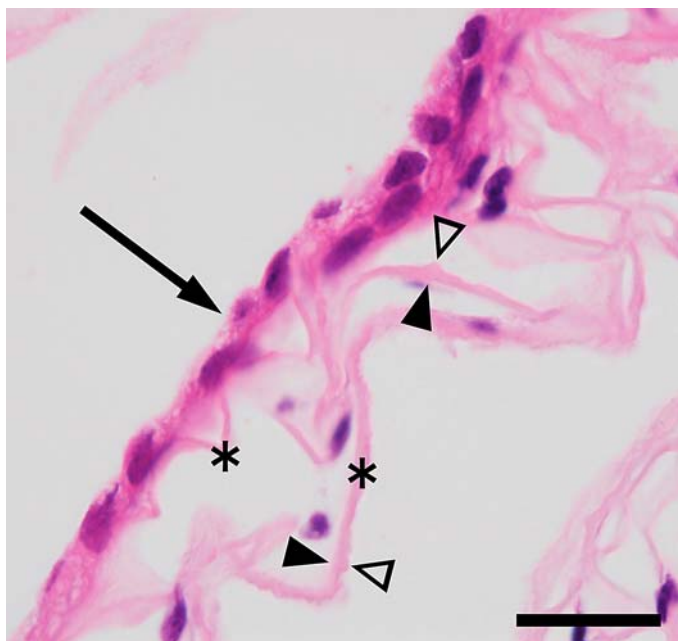
## Discussion

We report a case of recurrent ERM after spontaneous resolution of idiopathic ERM. The mechanism of recurrent ERM after spontaneous or surgical removal of idiopathic ERM is still poorly understood [3, 4]. One possible cause is that the retinal glial cells might migrate and proliferate on the inner retinal surface through the fine defects of the ILM that developed following spontaneous or surgical removal. Another hypothesis is that idiopathic ERM removal is incomplete and focal ERM remains attached to ILM. Such membrane remnants of idiopathic ERM left on the ILM might proliferate and form a new ERM [2]. It is reported that ILM removal during surgery for ERM is associated with a better final vision and a lower risk of recurrent ERM [2]. Recurrent ERM may be observed in places where ILM is still present.

Spontaneous separation of idiopathic ERM is rare in elderly patients. Conservative observation is advocated for young subjects with idiopathic ERM associated with mild visual disturbance, as spontaneous resolution of idiopathic ERM may occur [4]. But physicians should explain to patients the possibility of recurrence, even if idiopathic ERM separates spontaneously.



**Fig. 1.** Top: color photographs of the left eye at the initial examination (**a**), 1 month after the initial examination (**b**), and before surgery (**c**). Bottom: the corresponding vertical OCT scans. **a** The OCT scan demonstrates a partially rolled-up hyperreflective ERM. Diffuse retinal thickening with areas of hyporeflective cystic spaces is also seen. **b** The OCT scan demonstrates reduced foveal thickness and smooth retinal surface. **c** The color photograph shows a semi-transparent ERM. The OCT scan demonstrates macular thickening with areas of hyporeflective intraretinal cystic spaces and an undulating retinal surface.



**Fig. 2.** A hematoxylin-eosin-stained section of the excised specimen. The asterisks indicate the ILMs, closed arrowheads indicate the inner surface (vitreal side), and open arrowheads indicate the irregular outer surface (retinal side) of the ILMs. The surgical specimen consists of undulating ILMs and a continuous sheet of cells overlying the inner surface of the ILMs (arrow). Scale bar = 25  $\mu$ m.

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