Abstract Background: A peripheral retinal pigment epithelial tear and an
extensive exudative retinal detachment caused by choroidal leakage
from the denuded Bruch’s membrane are extremely rare. A peripheral reti-
nal pigment epithelial tear has not been reported in an eye with retino-
choroidal folds after blunt ocular trauma. Methods: Case report.
Results: The course of a large nasal peripheral retinal pigment epithelial
tear that occurred after blunt ocular trauma in a patient with retino-
choroidal folds was followed. The inferior retinal detachment caused by
leakage from the denuded Bruch’s membrane following the develop-
ment of the tear gradually worsened. Initial treatment with cryother-
apy was ineffective, but the retinal detachment eventually resolved after
the patient underwent sclerectomy and sclerostomy. Conclusion: A
large peripheral retinal pigment epithelial tear can occur in patients
with retinochoroidal folds following blunt ocular trauma, and extensive
retinal detachment can be induced. Sclerectomy and sclerostomy can be
beneficial in patients with an extensive exudative retinal detachment
caused by choroidal leakage from the denuded Bruch’s membrane.

Introduction
Retinal pigment epithelial (RPE) tears occur most com-
monly in the posterior pole as a complication of age-
related macular degeneration (AMD) [4, 9, 18]. On the
other hand, midperipheral and peripheral RPE tears are
rare and tend to be much larger [1, 5, 10, 11, 13, 21–23].
RPE tears outside the macula have occurred in patients
with a rhegmatogenous retinal detachment [23], chorio-
dal tumor [21], chorioretinal scar [23], RPE detachment
with central serous chorioretinopathy [22], acute retinal
necrosis [5], panuveitis [1], and after glaucoma surgery
with or without photocoagulation [11, 13]. However, to
the best of our knowledge, a peripheral RPE tear has not
been reported in an eye with retinochoroidal folds after
blunt ocular trauma. Although RPE tears sometimes in-
duce a localized retinal detachment, extensive serous or
exudative retinal detachment has not been observed, ex-
cept in a few cases [1, 10, 11, 20, 22, 23]. We observed
an unusual case with an extensive exudative retinal de-
tachment caused by leakage from a nasal denuded
Bruch’s membrane following development of a large pe-
ripheral RPE tear after blunt ocular trauma in a woman
with retinochoroidal folds.

Case report
A 36-year-old woman presented to the Department of Ophthal-
mology, Mie University Hospital, on 12 December 1994, with bi-
lateral optic disc swelling with retinochoroidal folds (Fig. 1). Her
corrected visual acuity was 20/20 with −1.5 diopters in the right
eye and 20/20 with −1.0 diopter in the left; the intraocular pressure
(IOP) was 17 mmHg in the right eye and 13 mmHg in the left. The
light reflexes, pupil sizes, corneas, anterior chambers, angles, lens-
es, and vitreous were normal bilaterally. Although Mariotte’s blind
spot was slightly enlarged in the left eye, the visual field of the right
eye was normal. The axial lengths were 23.63 mm and 22.82 mm in
the right and left eyes, respectively. A computed tomography (CT)
scan revealed no abnormal findings in the brain or the orbits. The
intracranial pressure was normal, and the number of lymphocytes
in the cerebrospinal fluid did not increase. No optic disk drusen
were observed, and no calcification was seen by B-mode ultraso-
nography and CT in either optic nerve head. Significant scleral thickening was not found by B-mode ultrasonography. There was no history of hypertension or diabetes mellitus. The patient was diagnosed as having pseudopapilledema with retinochoroidal folds. During the next 2.5 years' observation, the bilateral visual acuities and visual fields remained unchanged, and optic nerve atrophy, ocular inflammation, ocular tumor, choroidal neovascularization, and RPE detachment were not found.

The patient observed an ocular floater in the right temporal visual field on 5 June 1997, just after her husband accidentally hit her in the right eye with his hand. She consulted an ophthalmologist 2 days later because of superior visual field loss. The corrected visual acuity was 20/20; no lid edema, ecchymosis, enophthalmos, and angle recession were seen. The IOP was 15 mmHg bilaterally; 1+ cells and flare were seen in the right anterior chamber. The anterior chamber of the left eye and the bilateral light reflexes, pupil sizes, corneas, lenses, and vitreous were normal. An inferior retinal detachment developed in the fundus of the right eye, but no change was found compared with the fundus findings in the left eye from 1994. The patient was not pregnant and she had not taken systemic or topical steroids in the past.

Because the superior visual field loss gradually progressed inferiorly, she presented to the Department of Ophthalmology, Mie University Hospital, on 16 June 1997. The corrected visual acuity was 20/30 in the right eye and 20/20 in the left. The IOP was 15 mmHg and the anterior chamber returned to normal in the right eye. Fundus examination disclosed an extensive inferior retinal detachment in the right eye, and the subretinal fluids easily shifted upon ocular movement. The RPE with a 360-deg tear was detached from Bruch's membrane in the nasal periphery, and adhered to the retina. However, no retinal tears were found. Fluorescein angiography (Fig. 2) showed early intense hyperfluorescence of the denuded Bruch's membrane and hypofluorescence of the detached RPE. The inferior nonrhegmatogenous retinal detachment was caused by leakage from the denuded Bruch's membrane following the RPE tear, and the fluorescein dye moved rapidly to the subretinal space of the detached inferior retina. However, choroidal neovascularization was not observed. Ciliary body breaks, ora dialysis, and choroidal detachment were not seen in the right eye.

Because the retinal detachment gradually worsened (Fig. 3), cryopexy was performed around and on the RPE tear on 3 July 1997. However, the subretinal fluid with exudation gradually increased. A peripheral choroidal detachment developed, and the corrected visual acuity decreased to 20/200 in the right eye. The IOP was 15 mmHg bilaterally.

We performed sclerectomy and sclerostomy on 10 July 1997, according to the following procedure. After two rectangular 6×4-mm and half-thickness sclerectomies (2 mm anterior to the equator) had been performed in the temporal inferior and nasal inferior quadrants, a rectangular 2×2-mm sclerostomy was created in the center of each sclerectomy. Although the choroid was not perforated, fluid oozed from the sclerectomy. One day later, the subretinal fluid had decreased by half. The subretinal fluid with exudation gradually improved. The retinal detachment resolved 4 months after sclerectomy and sclerostomy (Fig. 4). Retinochoroidal degener-