Optic nerve pit with serous macular detachment resulting in rhegmatogenous retinal detachment

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The pit of the optic nerve is a rare congenital abnormality which is accompanied by macular detachment at a rate of 30% to 45%. Long standing macular detachment associated with the pit of the optic nerve leads to the formation of cystic degeneration,\(^1\) lamellar macular holes,\(^3\) and retinal pigment epithelium atrophy.\(^4\)

Suggested treatments of serous macular detachment include: bed rest plus ocular patching; chorioretinal adhesions at the temporal border of the optic disc by means of photocoagulation;\(^2\) laser coagulation combined with intraocular gas tamponade with or without vitrectomy.\(^5\) The results of treatment so far have been inconsistent.

To the best of our knowledge we present the first case of a patient with an optic nerve pit and serous macular elevation who developed a full thickness macular hole and rhegmatogenous detachment.

Case report
In March 1986 we examined a 51-year-old white man with a 6 month history of reduced vision in the right eye. His visual acuity was 0/2 in the right eye and 1/0 in the left eye.

The right eye showed a temporal optic nerve pit associated with a sensory macular detachment. The macula appeared cystic. The pit was covered with vitreous strands. The patient was reluctant to submit to the recommended laser intervention which consisted in the application of two or three rows of confluent laser burns (200 \(\mu\)m spot size) at the temporal margin of the optic disc. One year after the first examination the patient developed a lamellar macular hole. On 7 October 1987 he noted a sudden loss of vision of the right eye. On examination the fundus revealed a round full thickness macular hole accompanied by a rhegmatogenous retinal detachment, which started from the macula, covered the temporal and mainly the inferior part of the retina, and extended to the periphery 5–8 o'clock axis (Fig 1). The vitreous had a posterior detachment with some tiny residual vitreous strands at the papillomacular bundle.

Fluorescein angiography revealed, at the upper part of the papillomacular bundle, a pigment epithelial window defect. Thorough examination revealed no other tear or hole apart from that of the macula. We operated on the patient using a silastic sponge explant at the posterior pole, without any other kind of treatment (laser, diathermy, or cryotherapy). According to the procedure a silastic sponge of 7·5 mm was fixed at the posterior pole of the eyeball corresponding to the macula along the meridian of the 12–6 o'clock axis. The fixation of the upper end of the sponge corresponded to the posterior edge of the insertion of the superior oblique muscle. The lower end was fixed temporally from the belly of the inferior rectus muscle.\(^6\) The retina flattened 48 hours after treatment and has remained completely flat until now (Fig 2). The right positioning of the silastic sponge in the macular area is clearly shown by B ultrasonography (Fig 3). VA at present measures 0·2.

Comment
The incomplete macular hole in cases of serous macular detachment associated with the optic nerve pit may very rarely result in a full thickness detachment.
macular hole leading to a rhegmatogenous retinal detachment, as happened in our case. This was probably due to a defect of the outer retinal layer and to the vitreous traction which was exerted in the macular area by the residual vitreous strands. The retina reattachment was achieved with the application of the macular buckling technique without the use of any kind of energy. This technique, in addition to pneumatic retinopexy, vitrectomy plus fluid/air exchange, and vitrectomy plus silicone oil tamponade, constitutes the techniques currently recommended for the management of retinal detachment caused by macular holes.

The fact that no serious macular detachment occurred within the 4½ years after the intervention should be attributed to the maintenance of the macular scleral buckle and to its extension right up to temporal margins of the optic nerve, thus preventing the fluid flow from the optic pit to the submacular space (Fig 3).

This procedure should be an alternative solution for the management of secondary macular elevation caused by the pit of the optic disc.

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