

## A case report: Optic disc pit with serous macular detachment

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### Abstract

Optic disc pits are congenital excavations of the optic nerve head, develops as a result of incomplete closure of the embryonic fissure. CASE PRESENTATION: A 19 year old male patient presented with complaints of diminution of vision in right eye since 2 months. Visual acuity was 6/36p in right eye and 6/6 in left eye. On right eye fundus examination-an oval shaped excavation 1/5<sup>th</sup> size of disc diameter is present on the optic nerve head, edema present extending from the temporal margin of optic disc involving the entire macula. Left eye fundus normal. CONCLUSION: Whenever Central Serous Retinopathy case is examined, a careful examination of the optic disc is to be done to look for optic disc pit & its associated serous retinal detachment as the management is entirely different in both the conditions. As this condition will lead to poor visual outcome it not only indicates that the macular detachments require treatment, but that treatment should not be delayed.

**Keywords:** Coloboma, Optic disc, Disc Pit, Retinal detachment, Macular edema.

### 1. Introduction

Optic disc pit (ODP) is a rare, congenital excavation of the optic nerve head also known as atypic coloboma is attributed to incomplete closure of the fetal fissure. ODP usually occurs during the first trimester of embryogenesis [1]. Prevalence of the condition is estimated at between 0.02% [2] and 0.19% [3] with men and women affected equally [4]. 10-15% of optic disc pits are bilateral, and most are located in the temporal region of the optic disc, usually with temporal peripapillary atrophy [4,5].

Although ODP is a rare condition of the optic disc, most of the patients with ODP develop serous macular detachments [1]. Approximately one-half to two-thirds of optic disc pits are associated with maculopathy; classically, serous retinal detachment [4, 6, 7].

Visual acuity usually remains unaffected unless the patient develops a serous retinal detachment of the macula.

We present a case of optic disc pit associated with serous macular detachment which is a rare abnormality.

### Case Report

A 19 yr old male patient presented to the out-patient department of Ophthalmology at R L Jalappa Hospital & Research Center which is attached to Sri Devaraj Urs Medical College, Tamaka, Kolar with complaints of diminution of vision in right eye since 2 months. His Best Corrected Visual acuity was 6/36p, N 18 in right eye (RE) and 6/6, N6 in left eye (LE). On slit lamp examination, both eyes showed normal anterior segment. Fundus examination using Indirect ophthalmoscopy and slit lamp biomicroscopy with 90 D lens showed an oval shaped excavation 1/5<sup>th</sup> size of disc diameter is present on the optic nerve head, in the inferotemporal quadrant, edema present extending from the temporal margin of optic disc involving the entire macula in RE (Fig 1). LE fundus was normal (Fig 2).

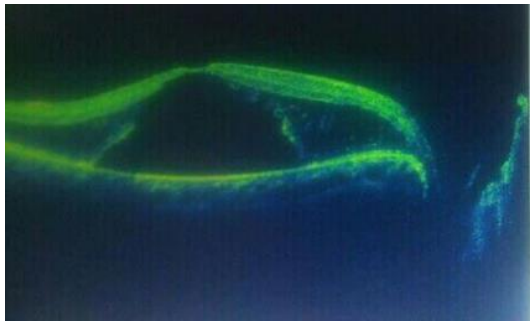


Fig 1: RE – Fundus

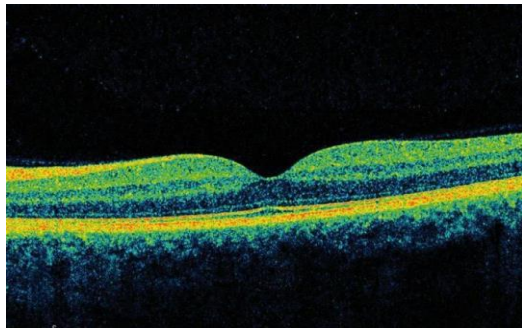


Fig 2: LE – Fundus

Optical coherence tomography showed serous macular detachment in right eye (Fig 3) and normal retina in left eye (Fig 4).



**Fig 3:RE: Serous Macular Detachment**



**Fig 4: LE- Normal retina**

He received focal laser photocoagulation to the right eye with green laser in the peripapillary region. Laser was applied to the peripapillary retina like a barrage with a spot size of 100 microns and a power of 200 MW.

#### 4. Discussion

Optic disc pit is a rare congenital anomaly, usually associated with macular serous retinal detachment<sup>[8]</sup>. The source of the subretinal fluid is controversial. It is postulated that the possible sources of intraretinal/subretinal fluid might be vitreous cavity<sup>[9]</sup>, cerebrospinal fluid from the subarachnoid space<sup>[10]</sup>, and leaky blood vessels at the base of the optic disc pit<sup>[11]</sup>. How this fluid tracks into the retina is unknown. But most likely the fluid initially forms a schisis and subsequently enters the subretinal space and creates a less extensive detachment of the outer retina<sup>[2]</sup>. The poor visual outcome of conservative management has prompted use of a more aggressive approach<sup>[12]</sup>. There is no consensus of the treatment of maculopathy secondary to optic pits. The treatment options range from barrage laser photocoagulation to vitrectomy, with or without adjunctive procedures such as internal limiting membrane (ILM) peel, gas tamponade, and laser photocoagulation.

The best corrected visual acuity on presentation in our was 6/36, N12 whereas Sobol *et al*<sup>[13]</sup> in analyzing 15 patients with optic disc pit, found that most eyes presented with visual acuities of about 6/12 to 6/18. Theodossiadus<sup>[14]</sup> opined that patients with optic disc pits present later in the course and their macular detachments when their visual acuities are worse than 20/70 and similar observation was made in our case. Hassenstein A and Richard G<sup>[15]</sup> analyzed 8 patients with optic pit maculopathy by optical coherence tomography. They demonstrated retinal detachment with a typical convex schisis of the outer retinal layer and also neuro sensory detachment with and without intraretinal cystoid formation in their cases. OCT of our patient on

presentation had similar picture with intraretinal schisis. Recent long term studies confirm the earlier impression that untreated macular detachments caused by optic disc pit have an overall poor prognosis. Hence we treated our patient by laser photocoagulation. Several series have favourably compared the outcome of photocoagulated eyes with untreated eyes in the resolution of the serous macular detachment and in final visual outcome<sup>[16]</sup>. More recent attempts to combine photocoagulation therapy with posterior vitrectomy and gas fluid exchange have shown more encouraging long-term visual outcomes.

#### 5. Conclusion

Optic disc pit with associated serous macular detachment is a rare but sight-threatening disorder. However, improved visualization techniques and evolving surgical interventions have improved outcomes. Further studies are needed to explore the significance and impact of structural features in optic disc pit maculopathy on the choice of treatment and visual prognosis. It should also be remembered that maculopathy may develop in the eyes at different times. The patients should be informed about the vision loss and followed closely.

#### 5. References

1. Krivoy D, Gentile R, Liebmann JM, *et al*. Imaging congenital optic disc pits and associated maculopathy using optical coherence tomography. *Arch Ophthalmol* 1996; 114:165-170.
2. Wang Y, Xu L, Jonas JB. Prevalence of congenital optic disc pits in adult Chinese: The Beijing Eye Study. *Eur J Ophthalmol*. 2006; 16:863-864.
3. Healey PR, Mitchell P. The prevalence of optic disc pits and their relationship to glaucoma. *J Glaucoma*. 2008; 17:11-14.
4. Brown GC, Shields JA, Goldberg RE. Congenital pits of the optic nerve head.II. Clinical studies in humans. *Ophthalmology*. 1980; 87:51-65.
5. García-Arumí J, Guraya BC, Espax AB, Castillo VM, Ramsay LS, Motta RM. Optical coherence tomography in optic pit maculopathy managed with vitrectomy-laser-gas. *Graefes Arch Clin Exp Ophthalmol*. 2004; 242:819-826.
6. Kranenburg EW. Crater-like holes in the optic disc and central serous retinopathy. *Arch Ophthalmol*. 1960; 64:912-924.
7. Sobol WM, Blodi CF, Folk JC, Weingeist TA. Long-term visual outcome in patients with optic nerve pit and serous retinal detachment of the macula. *Ophthalmology*. 1990; 97:1539-1542.
8. H Lincoff, R Lopez, I Kreissig, L Yannuzzi, M Cox, T Burton, "Retinoschisis associated with optic nerve pits," *Archives of Ophthalmology*. 1998; 106(1):61-67, 1988.
9. K Laud, S Visaetsilpanonta LA Yannuzzi, RF Spaide, "Autofluorescence imaging of optic pit maculopathy," *Retina*, 2007; 27(1):116-119.
10. F Kuhn, F Kover, I Szabo, V Mester, "Intracranial migration of silicone oil from an eye with optic pit," *Graefes Archive for Clinical and Experimental Ophthalmology*. 2006; 244(10):1360-1362.
11. JDM Gass, "Serous detachment of the macula. Secondary to congenital pit of the optic nervehead," *American Journal of Ophthalmology*. 1969; 67(6):821-

- 841.
12. JH Tzu, HW Flynn Jr, AM Berrocal, WE Smiddy, TG Murray, YL Fisher, "Clinical manifestations of optic pit maculopathy as demonstrated by spectral domain optical coherence tomography," *Clinical Ophthalmology*. 2013; 7(1):167–172.
  13. Sobol WM, Boldi CF, Folk JC, weingeit TA. Long term visual outcome in patients with optic nerve pit and serous retinal detachment of the macula, *Ophthalmology*. 1990; 97:1539-1542.
  14. Theodosiadis GP: Visual acuity in patients with optic nerve pit. *Ophthalmology*. 1991; 98:563.
  15. Hassenstein A. Richard G: Optical coherence tomography in optic pit & associated maculopathy, *Ophthalmology*. 2004; 101:170-176.
  16. Cox MS, Witherspoon, CD Mories, RE & Flynn HW: Evolving techniques in the treatment of macular detachment caused by optic nerve pits, *Ophthalmology*. 1988; 95:889-896.