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Case Report

Screening saves sight: An unusual case of type-1 neurofibromatosis

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ABSTRACT

Neurofibromatosis (NF), described by von Recklinghausen in 1882, consists of at least two distinct disorders: NF1 (von Recklinghausen's or peripheral neurofibromatosis) and NF2, formerly known as 'central neurofibromatosis." The prevalence of NF is approximately 1 in 4,000, and of NF2, 1 in 50,000. Neurofibromatosis type 1 is a multisystemic neurocutaneous disorder with an autosomal dominant hereditary pattern. Ocular manifestations include plexiform neurofibroma of eyelid, Lisch nodules in iris, optic nerve glioma, glaucoma, sphenoid wing dysplasia. Retinal and choroidal involvement are encountered less frequently. Unusual ocular findings include multiple choroidal nevi, combined hamartoma, choroidal Schwannoma, choroidal melanoma and vaso proliferative retinal tumors.
Here we report a case of an 18 year old girl diagnosed with neurofibromatosis type 1 who on routine ocular examination was found to have high myopia in both eyes and on fundus examination had a macula 'on' inferior retinal detachment with retinal hole in right eye. Inferior retinal detachment is rarely reported in neurofibromatosis type 1. This case emphasizes the importance of conducting ocular examination even in asymptomatic patients with neurofibromatosis, so that early detection and treatment can prevent vision loss secondary to retinal detachment.

1. Introduction

Neurofibromatosis, an oculo- neurocutaneous syndrome is characterized by multi system involvement. Neurofibromatosis type 1(NF 1) affects about 1 in 4000 individuals with autosomal dominant mode of inheritance.[1–4] Ocular manifestations of NF1 include Lisch nodules on the iris, optic nerve gliomas, myopia, eyelid or orbit plexiform neurofibroma, glaucoma, choroidal granuloma and rarely, retinal hamartomas. Here we report a case of neurofibromatosis who had developed an asymptomatic inferior retinal detachment which is a rare ocular presentation.

2. Case Report

We describe the case of a 18-year-old girl diagnosed with neurofibromatosis type 1 who was referred to the Ophthalmology Out patient department for routine ocular examination. It was noted that she had a large plexiform neurofibromatosis of right upper lid for which she had undergone reduction surgeries thrice in Plastic Surgery. The last surgery was done three years prior. She gave history of frequently changing her glasses. There was no history of ocular trauma. The patient had no ocular symptoms, and her best corrected visual acuity (BCVA) was 6/18 in right eye and 6/12 in left eye. The autorefractor (AR) reading under cycloplegia was -7.50 DS in the right eye and -7.00DS/-2.00DC in the left eye. Slit-lamp examination revealed multiple characteristic Lisch nodules on the iris

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of both eyes. Dilated fundus examination showed inferior retinal detachment, not involving the fovea, with 2-3 retinal holes seen, left eye had white without pressure. The patient underwent RE scleral buckling, with 276 buckle with peripheral cryotherapy. Scleral buckling is preferred in these young patients as it reduces the risk of complications of PPV like cataract formation.

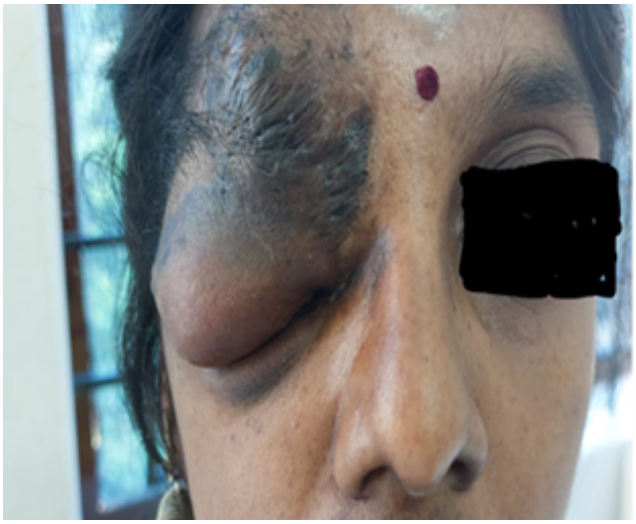

Fig. 1:

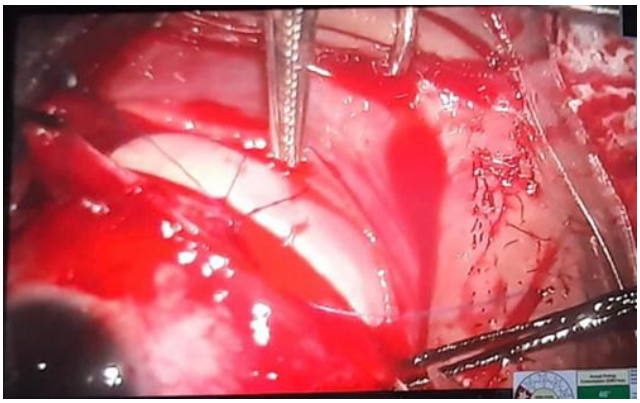

Fig. 2:

3. Discussion

Neurofibromatosis type 1, also known as Von Recklinghausen's disease, can present a great variety of ophthalmic manifestations although retinal and choroid lesions are less frequent. Unusual ocular findings include multiple choroid nevi, combined hamartoma, etc. Rarely, retinal astrocytic hamartomas may extend to the peripheral retina and cause devastating complications such as neovascular glaucoma and retinal detachment.[5]

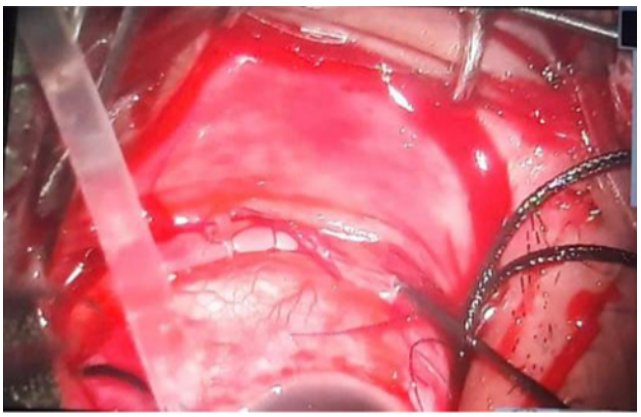

Fig. 3:

Rodrigo et al described an interesting case of a 13-year-old child diagnosed with neurofibromatosis type 1 who with a 'macula on' rhegmatogenous retinal detachment associated with dialysis of the ora serrata in the left eye. There was no history of trauma, possibly the mechanism of retinal detachment in that case was by alteration in fibroblasts of the cortex of the vitreous base.[6] This leads to avulsion and in turn maybe related to dialysis of the ora serrata.[7]

Hong-Uyen Hua et al reported a case unusual presentation of NF-1in pediatric patient with neovascular glaucoma, inflammation and total retinal detachment in whom a multispecialty examination under anaesthesia led to the diagnosis. Additionally, NF-1 patients should have diligent monitoring with fluorescein angiographic assessing the possibility of peripheral ischemia and/or neovascularization for the prevention of retinal detachments.[8]

Oudbib et al described a 15-year-old patient who presented with diminution of vision. There was no history of trauma. Dilated fundus examination revealed a superior retinal detachment due to disinsertion of ora serrata. The exact mehanism of this disinsertion was unknown.[9]

In our case the patient presented with a large plexiform neurofibroma on right upper lid. She did not have any other ocular complaints. On routine fundus examination, we detected an inferior retinal detachment. In this patient the retinal detachment was not only because of neurofibromatosis as she also had high myopia , another risk factor for retinal detachment. However in myopia the RD is usually present superiorly, but in this case we noted inferior RD.

4. Conclusion

Neurofibromatosis affects the eyes and is potentially blinding. Routine screening of asymptomatic patients may lead to the early detection of sight threatening conditions like retinal detachment.

Our case emphasizes that importance of performing routine dilated fundus examination in all NF-1 cases. Some potentially sight threatening conditions such as retinal detachment can be detected early and prompt treatment prevented visual loss in our patient.

5. Conflict of Interest

Author has no conflict of interest to declare.

6. Source of Funding

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