

Cornea plana: a case report

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Abstract: We report a case of a 7-years old boy with Cornea plana who presented with heavy amblyopia due to high refractive error. Cornea plana is a genetically determined condition that can be accompanied by a range of complications and have virtually no possible treatment. The child underwent a treatment for the amblyopia with very good results, but still presents a challenge in terms of early detection of possible glaucoma.

Keywords: Cornea plana, amblyopia, refractive error, glaucoma

I. Introduction

The purpose of the study is to present a case of Cornea plana and to discuss the possible difficulties encountered during the diagnostic process and the treatment plan. Cornea plana is a rare genetically determined pathology of the eye, which can be accompanied by a lot of complications: high refractive errors, amblyopia, glaucoma, early onset of cataract, etc. [1,5]. The gene for Cornea plana was mapped at the long arm of chromosome 12 [2]. Managing the complications is very difficult and examining the patient can be very challenging, even with modern methods. The patient is a 7-years old healthy child, who was brought for a prophylactic eye check, with the sole complaint of not seeing clearly the blackboard at school.

II. Methods

The initial examination comprehended: AR, BCVA before and after cycloplegia, skiascopy, orthoptic status, slit lamp examination and ophthalmoscopy. An attempt to make a Javal examination and AR was made, but without any result. In spite of the challenging age of the patient and the rare corneal condition, an a-scan and pachimetry were successfully performed, and nearly confirmed with a topography (pentacam) and biograph examination made later. IOP measured with a non-contact tonometry gave inconsistent and therefore unreliable results, and Goldman tonometry was not successful due to bad compliance of the child.

III. Results

The initial status showed: Skiascopy: OD=12/13Dpt. OS=15/15Dpt. BCVA OD=20/60 with +7,00Dsph. OS<20/200 with +9,00Dsph.; Orthoptic status: normal: Worth 4 Dot: normal binocular response; Lang Stereotest I: negative; Digital biometric ruler: A-scan: AxL: OD=23,17 OS=22,6; CCT: OD=551mM OS=518mM; Biograph: AxL: OD=23,02(SD=0,006) OS=22,15 (SD=0,019); CCT OD=566mM(SD=3,7) OS=527mM(SD=4,3); OD: K1=31,20(SD=0,061) K2=32,33(SD=0,317) OS: K1=error K2=error. Pentacam: OD: K1=29,4D K2=30,8D; OS: K1=26,5D K2=28,9D. CCT: OD=504mM; OS=469mM. Pentacam also showed results suspicious for keratoconus for the right eye. Low depth and chamber volume, as expected. The heavy amblyopia was a primary concern and a treatment plan was made [3,4].

After optical correction, occlusion therapy and pleoptic treatment for eight months the BCVA is: OD=50/60 with +7,00Dsph and OS=20/60 with +9,00Dsph. Stereoscopic acuity (Lang Stereotest I) is 600 seconds of arc.

IV. Conclusion

This case shows a significant problem in correction of the high hypermetropia and in consequence in managing the heavy amblyopia. The only possibility for the moment is with conventional glasses. Correction with contact lenses or refractive surgery is impossible. Patients with cornea plana develop an early onset cataract and often glaucoma [5]. The struggle in measuring the IOP, comes not only from the young age and bad compliance of the patient, but because neither of the methods can be reliable for the moment. At present precise calculation of any type of any kind of IOL is almost impossible. The good results of the treatment of the amblyopia in this case should be underlined.

References

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