



HEALTH RESEARCH IN AFRICA

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Case Report

Juvenile Glaucoma Associated with Hyperopia in Garoua: A Case Report

Glaucome Juvénile Associé à une Hypermétropie à Garoua. À Propos d'un Cas

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RÉSUMÉ

Le glaucome juvénile est généralement associé à une myopie. Nous rapportons le cas d'une adolescente présentant un glaucome associé à une hypermétropie. Il s'agissait d'une fille de 13 ans, amené en consultation pour une baisse d'acuité visuelle et des douleurs oculaires bilatérales évoluant depuis un an. L'examen ophtalmologique révélait une AVL (s/c) à 7/10^{ème} à droite et 8/10^{ème} à gauche, améliorable à 10/10^{ème} avec du +0,50 aux deux yeux, une hypertonie bilatérale, une excavation pathologique avec un c/d à 0,7 ODG. Le champ visuel montrait un glaucome évolué à droite et débutant à gauche. Le diagnostic de glaucome juvénile associé à une hypermétropie a été posé. La patiente a été mise sous anti-glaucomeux topique avec prescription de verres convergents. Nous soulignons la nécessité de mesurer la pression intraoculaire à tout âge dès qu'elle est réalisable et de faire un fond d'œil systématique pour le dépistage de glaucome.

ABSTRACT

Juvenile glaucoma is generally associated with myopia. We report a case in a hyperopic adolescent girl. A 13-year-old girl consulted for reduced visual acuity and ocular pain evolving for a year. The ophthalmological examination revealed an LVA (w/c) of 7/10 on the right eye and 8/10 on the left eye, improvable to 10/10 with +0.50, hypertonia in both eyes, a papilla with a pathological excavation c/d =0.7 at ODG. The automated visual field showed advanced glaucoma on the right eye and beginning on the left eye. The diagnosis of juvenile glaucoma associated with hypermetropia was made. The patient was put on topical anti-glaucoma and optical glasses was also made. We underline the need to measure the IOP at any age as soon as it is feasible and to do fundus examination systematically for the detection of glaucoma.

INTRODUCTION

Juvenile glaucoma is a clinical form of primary open-angle glaucoma in young subjects (1). It accounts for about 1.5% of glaucoma cases with a higher frequency in myopic and melanodermic people (2). Hypermetropia and astigmatism are the refractive disorders most frequently found in African literature. Fundus examination as part of glaucoma screening in young patients with ametropia is not systematic in ophthalmology consultations. The aim of this study is to report a case of asymmetric bilateral juvenile glaucoma associated with hypermetropia.

CASE PRESENTATION

This was a 13-year-old adolescent girl, melanoderma, in good health, brought to the ophthalmology department by her older brother for a decrease in visual acuity and progressive bilateral eye pain for a year. The patient had no contributory personal or family history. The clinical ophthalmological examination on admission revealed: an LVA (w/c) of 7/10 P2 in the right eye which could be improved to 10/10 with a converging lens of + 0.50 after performing automatic refractometry (+0.81 (-0.39)111°)) and an LVA (w/s) of 8/10 P2 in the left eye which can be improved to 10/10 with + 0.50 after automatic refractometry (+0.58(-0.57)88°). Anterior segment



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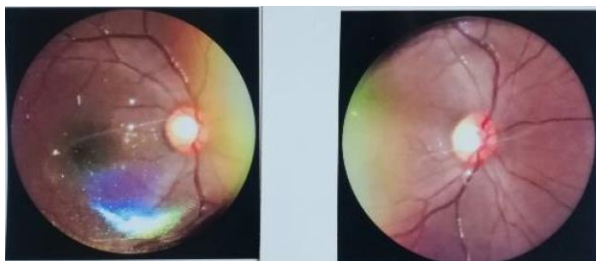


examination was normal. The intraocular pressure (IOP) measured with the pulsed air tonometer was 26 mm hg on the right and 22 mm hg on the left. Gonioscopy could not be performed because the patient was uncooperative. The fundus showed in both eyes a sharp-edged colored papilla with a wide excavation, vertical c/d = 0.7, diffuse and significant thinning of the neuro-retinal ring and nasal rejection of the vessels, the ISNT rule not respected and normal macula.

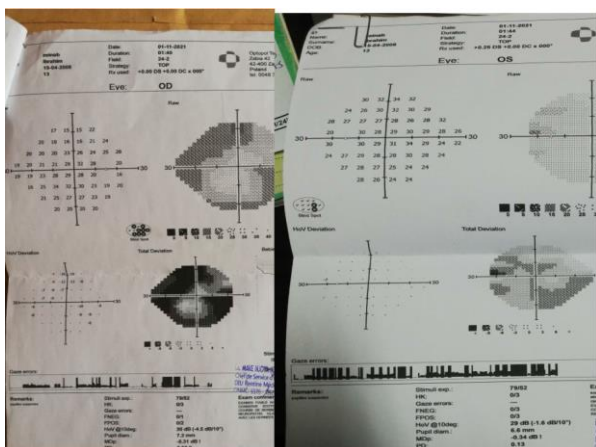
Regarding the paraclinical examinations, the automated visual field showed advanced chronic glaucoma on the right and chronic glaucoma beginning on the left. The assessment had not been completed by papillary OCT with analysis of the ganglion cells due to a lack of financial means.

The diagnosis of juvenile glaucoma associated with minimal hypermetropia was made. The patient was put on a topical antiglaucoma drug based on a carbonic anhydrase inhibitor in this case Brinzolamide one drop three times a day in both eyes without stopping until the next appointment. A prescription for optical glasses was made. A monthly follow-up was rigorously instituted after counselling was done. The IOP was lowered to 15 mm hg in both eyes one month later. Corneal pachymetry showed a thin cornea in both eyes (492 µm at the right eye and 497 µm at the left eye). The new adjusted IOP was 20.3 mm hg in the right eye and 19.8 mm hg in the left eye.

We prescribed him to continue the current treatment while considering switching to dual therapy and having surgery as soon as possible. The appointment was made in a month.



Rétino-photographie ODG



CVA automatisé d'HUMPREY ODG

DISCUSSION

Juvenile glaucoma is no longer considered a rare entity. Several African authors found variable frequencies. This is the case of : Bella and al. (3) in Cameroon and Tchabi and al. (4) in Benin 5.8% and 16% respectively. These variable rates in Africa testify to the high frequency of this pathology contrary to what was previously reported in the literature.

The age of our patient was 13 years old. This result corroborates the literature data. But, Bakayoko and al. (5) found an average age greater than 25 years. Juvenile glaucoma is a chronic open-angle glaucoma occurring after the age of 3 years and before 40 years (4).

Our patient had no contributing family history. On the other hand, some authors, notably Makita and al. (6) in Congo in 2016, found direct inheritance. Bakayoko and al. (5) in 2013 in Mali, found that 14.5% of patients had familial ATCD of glaucoma in their study. Juvenile glaucoma therefore presents a marked hereditary character with an autosomal dominant transmission.

Visual acuity in our observation was greater than 5/10 in both eyes. This result is identical to that of Bakayoko and al. (5) who found that 70% of patients had visual acuity greater than 3/10th. On the other hand, Makita and al (6) in Congo, found visual acuity limited to light perception in 6.9% of cases. This showing the severity of this type of glaucoma. The results

obtained in our study can be linked to the fact that our patient was not yet at a very advanced visual stage of the pathology.

Hyperopia was the refractive error associated with juvenile glaucoma in our patient. However, the literature is unanimous on the fact that POAG remains associated with myopia and most often axial and GAFA with hyperopia (7, 8, 9,10). Our result could be explained by the fact that hypermetropia and astigmatism are the refractive disorders most found in the literature (9,10). Concerning the IOP, our patient had an elevated IOP. Same observation made by Makita and al. (6) with an average value of 3 times greater than 20mmhg. IOP remains the most important diagnostic factor associated with papillary examination. The difficulty of taking IOP in young people therefore raises a problem of diagnosis and early management of glaucoma. Especially since it is often very high, greater than 30mmhg (1.8) in this type of glaucoma. The c/d ratio was 0.7 associated with marked campimetric alterations at OD. This result is similar to those of Makita and al. (6), with a total c/d ratio in about 10% of cases and 90% of eyes having an altered CVA. All this testifies to a particularly aggressive and rapid evolution of the disease.

In our observation, the treatment was exclusively medical. Monotherapy was the most used. The carbonic anhydrase inhibitor was prescribed first. It has proven effective with a drop in IOP of more than 20% after one month. Makita and al. (6), and Gbe and al. (11) also opted for medical treatment with satisfactory results (20 to 325% reduction in IOP in their patients). However, several authors (12, 13,14) consider that hypotonic medical treatments have only a limited place in the management of this type of glaucoma, which is often associated with very high IOP

values. For them, the treatment of juvenile glaucoma is above all surgical. The chronic nature and severity of this pathology makes it more appropriate to recommend surgical treatment, more specifically trabeculectomy or sclerectomy with the addition of anti-metabolics to better control IOP. Domngang and al (15) in Cameroon in 2020 in a study, found that the majority of eye care staff (83%) believed that it was necessary to do early detection of glaucoma but the practice remained insufficient. Efforts should be made to raise awareness in the health community regarding glaucoma. Promoting early detection by staff would be an asset in the fight against glaucoma.

CONCLUSION

Juvenile glaucoma seems to be a fairly frequent pathology occurring in a family context, especially in black myopes. Screening must be early to avoid the advanced stage of the disease, which can adversely affect the functional prognosis of the patient's eye. Medical treatment is effective, but for long-term control of intraocular pressure and preservation of visual functions, it is essential to resort to surgical treatment.

DECLARATION

We have no conflict of interest. This work was the subject of an oral communication at the SCO congress in 2022.

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