

OPHTHALMOLOGIC ABNORMALITIES IN MENTALLY RETARDED

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ABSTRACT

Purpose: To determine the prevalence and types of ophthalmologic abnormalities in mentally retarded subjects.

Methods: Seventy - three institutionalized mentally retarded subjects (41 boys and 32 girls) aged 5 to 19 years (mean: 11,5 years) were examined ophthalmologically during a three month period (from May to July 1999).

The eye examination consisted of visual acuity testing (illiterate Snellen E-chart or acuity card procedures), pupillary reflex and motility evaluation, cover test for phoria and tropia, examination of adnexa and anterior segment (magnifying glass or slit-lamp biomicroscopy if indicated and possible), retinoscopy and direct ophthalmoscopy. All subjects were evaluated pediatrically, neurologically, psychologically and otorhinolaryngologically if indicated.

Results: Ophthalmologic abnormalities were found in 60,2% of the subjects. Eyelid abnormalities accounted for 21,7 %, fundus abnormalities for 21,6%, refractive errors for 15% and ocular motility disorders for 13,6%. Taken separately, optic atrophy (16,4%) was the most frequent disorder, followed by refractive errors (15%), hypertelorism (12,3%), epicanthus (10,9%) and nystagmus (8,2%). Strabismus and mongoloid obliquity of lids were seen in 5, 4% each other while ptosis was disclosed in 4,2% of cases. Visual acuity tested in 60 subjects revealed that 25 (41, 6%) had visual impairment. Of all subjects 10,9% required corrective glasses while 9,6%

needed corrective surgery for strabismus and ptosis.

Conclusion: This study shows a high prevalence of ophthalmologic abnormalities in mentally retarded subjects. This is in agreement with the results of several other previous studies. It's therefore essential to screen mentally disabled subjects ophthalmologically.

RÉSUMÉ

But: Déterminer la prévalence et les types d'anomalies ophtalmologiques chez les retardés mentaux.

Méthode: Pendant une période de trois mois (Mai-Juillet 1999), soixante - treize écoliers retardés mentaux (41 garçons et 32 filles), âgés de 5 à 19 ans (moyenne 11,5 ans), ont été examinés sur le plan ophtalmologique. L'examen comprenait la mesure de l'acuité visuelle par le E de Snellen ou les cartes d'acuité, l'étude des réflexes photomoteurs et de la motilité oculaire, le cover - test à la recherche d'une phorie ou d'une tropie, l'examen des annexes et du segment antérieur à l'aide d'une loupe grossissante ou d'une lampe à fente, la rétinoscopie ainsi que l'ophtalmoscopie directe. Tous les sujets avaient été évalués sur le plan pédiatrique, neurologique, psychologique et oto-rhino-laryngologique si nécessaire.

Résultats: Des anomalies ophtalmologiques ont été découvertes dans 60,2% des cas. Les anomalies palpébrales comptaient pour 21,7%, les anomalies du fond d'œil pour 21,6%, les erreurs de réfraction pour 15% et les anomalies de la motilité oculaire pour 13,6%. Pris séparément, l'atrophie optique (16,4%) était l'anomalie la plus fréquente, suivie des erreurs de réfraction (15%), l'hypertélorisme (12,3%), l'épicanthus (10,9%) et le nystagmus (8,2%). Le strabisme et l'obliquité mongoloïde des fentes palpébrales ont été notés chacun dans 5,4% des cas, alors que le ptosis était découvert dans 4,2% des cas. L'acuité visuelle testée chez 60 sujets a révélé que 41,6% avaient une déficience visuelle. De tous les sujets 10,9% nécessitaient le port de verres correc-

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teurs alors que dans 9,6% des cas une chirurgie était indiquée pour correction de strabisme et de ptosis.

Conclusion: Cette étude a révélé une prévalence élevée d'anomalies ophtalmologiques chez les sujets atteints d'arriération mentale. Ceci est en accord avec les résultats de la plupart des études antérieures. Il est donc essentiel de faire un screening ophtalmologique chez ces sujets.

KEY WORDS

Ophthalmologic abnormalities, mentally retarded.

MOTS CLÉS

Anomalies ophtalmologiques, retardés mentaux.

INTRODUCTION

The mentally retarded represent a large group of individuals who really require eye and vision care (10, 11, 15), but seldom receive it (9, 10). Several authors have stated that people with mental retardation are more often afflicted by visual and ocular disorders than the normal population (2, 11-13, 15). Nearly all the literature devoted to ophthalmology in mentally retarded persons is from developed countries. In the Democratic Republic of Congo no report on this topic is available. The present study was carried out to determine the prevalence and types of ophthalmologic abnormalities in 73 institutionalized mentally retarded subjects.

PATIENTS, MATERIAL AND METHODS

Over a three month period from May to July 1999, we performed an ophthalmic examination on all 73 mentally retarded pupils of the Bon Départ Child Center (BDCC). BDCC, founded in 1986, is a private institution and one of the six schools which provide education to mentally retarded infants in Kinshasa. This institution is managed by a generalist physician specialized in logopedia (M.C.Y.) seconded by two psychologists (M.E.J. and T.M.R.).

The examination included visual acuity (VA) testing using an illiterate Snellen E-chart or the acuity card procedures, inspection of the adnexa, examination of the anterior segment with a magnifying glass or slit-lamp biomicroscopy whenever indicated and possible, cover test for phoria and tropia, retinoscopy and direct ophthalmoscopy. Visual deficiency (blindness and visual impairment) was defined according to the WHO's criteria (18).

The etiology of the mental retardation was found in the records of the institution. Indeed, before admission at the BDCC each subject must be examined by a pediatrician, a neuropsychiatrist and an otorhinolaryngologist if indicated. All were however evaluated psychologically. There were 41 (56,2%) boys and 32 (43,8%) girls. Their age ranged from 5 to 19 years (mean: 11,5 years) and they covered the full range of mental retardation.

RESULTS

Table I shows the causes of mental retardation found in this population. Meningo-encephalitis (38,3%) was by far the most frequent cause. Other common causes comprised foetal suffering (13,7%), essential epilepsy (12,3%), Down's syndrome (5,3%) and congenital hydrocephalus as well as nuclear jaundice disclosed in 4,2% of cases each. In 13,7% of cases the mental disabling cause could not be determined.

Ophthalmologic abnormalities (table II) were disclosed in 44 (60,2%) subjects. Abnormalities of the eyelids accounted for 21,7%, fundus abnormalities for 21,6%, refractive errors for 15% and ocular motility disorders for 13,6%. When considering disorders separately, optic atrophy

(16,4%) was the most frequent disorder followed by refractive errors (15%), hypertelorism (12,3%), epicanthus (10,9%) and nystagmus (8,2%). Strabismus and mongoloid obliquity of lids were seen in 5,4% each other while ptosis and corneal leucomas were encountered in 4,2% and 2,7% respectively.

Because 13 subjects did not co-operate sufficiently for visual testing, VA was tested in only 60 subjects. Of these, 25 (41,6%) had visual deficiency among which 4 could be registered as blind and 21 as visually impaired. Optic atrophy (36%) was the leading cause of visual deficiency followed by refractive errors (28%), cortical amblyopia (24%), abnormalities of the anterior segment (8%) and fundus pathology (4%). Visual deficiency was found more frequently in subjects with severe and profound mental retardation than in those with mild mental retardation.

The repartition of ophthalmologic disorders according to the different causes of mental retardation showed that especially optic atrophy, strabismus and ptosis were more prevalent in subjects who suffered from meningo-encephalitis and that hypertelorism and epicanthus were mostly seen in Down's syndrome. Angioid streaks were seen in a subject whose mental disability was due to a cerebrovascular accident as complication of homozygous sickle cell disease. Of all subjects 10,9% required corrective glasses while 9,6% needed corrective surgery for strabismus (5,4%) and ptosis (4,2%).

Table I. Causes of mental retardation in the 73 subjects

Causes	N	%
Meningo-encephalitis	28	38,3
Foetal suffering	10	13,7
Essential epilepsy	9	12,3
Down's syndrome	4	5,3
Congenital hydrocephalus	3	4,2
Nuclear jaundice	3	4,2
Heredity	1	2,7
Myopathy	1	1,3
Usher's syndrome	1	1,3
Congenital hypercalcemia	1	1,3
Cerebrovascular accident	1	1,3
Undetermined	10	13,7
Total	73	100

Table II. Ophthalmologic abnormalities

Types of abnormalities	N	%
Optic atrophy	12	16,4
Refraction errors		
- myopia:	7	15
- hypermetropia :	4	
Hypertelorism	9	12,3
Epicanthus	8	10,9
Nystagmus	6	8,2
Strabismus	4	5,4
Mongoloid obliquity of lids	4	5,4
Ptosis	3	4,2
Corneal leucomas	2	2,7
Chorioretinitis	1	1,3
Retinitis pigmentosa	1	1,3
Angioid streaks	1	1,3
Tortuosity of retinal vessels	1	1,3
Lagophthalmos	1	1,3
Microcornea	1	1,3

DISCUSSION

This study showed that 60,2% of mentally disabled subjects had one or more ophthalmologic abnormalities. This is in agreement with several other previous studies which indicated the high frequency of ocular disorders in this group of persons (1, 8, 9, 11, 15-17). All the abnormalities found in the present study have been previously described. A review of the literature shows that their frequency varies from one study to another. In contrast of other series which found a high rate of cataract in mentally disabled subjects (1, 3, 8, 9-11, 14, 15), no case was encountered in our sample. However, in our daily practice we have already seen cases of cataract in mentally handicapped persons, especially in cases of Down's syndrome.

Visual deficiency in mentally handicapped subjects has been much and well documented (1-15). According to those previously reported, we also found a high proportion of visual deficiency. In addition, the most frequent causes of visual deficiency in our series were comparable to those early reported. The high prevalence of cortical dysfunction and optic nerve atrophy in severe and profound mentally disabled subjects may explain the fact that this group was more visually-disabled.

Optic nerve atrophy and ocular motility disorders were frequently seen in subjects with mental retardation secondary to meningo-encephalitis. Indeed, meningo-encephalitis induces organic brain changes which lead to these abnormalities.

The two cases of corneal leucomas were due to self-induced trauma because of the inability of mentally retarded subjects to pay attention to dangerous objects and plays. Hypertelorism, epicanthus and mongoloid obliquity of lids are related to Down's syndrome rather than retardation.

CONCLUSION

Ophthalmologic abnormalities are really frequent in mentally retarded subjects. Early ophthalmologic screening is recommended in these subjects.

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