DOI 10.5935/0034-7280.20180046

Unusual ocular manifestation in a patient with incontinentia pigmenti

Manifestação ocular incomum em paciente com incontinência pigmentar

Carolina Campos Reis[1], Ramon Públio Martins[2], Sandro da Silva Gramacho[3], Hermelino de Oliveira Neto[2]

ABSTRACT

Incontinentia pigmenti, also known as Bloch-Sulzberger syndrome, is a rare dominant X-linked inheritance disease whose clinical manifestations include typical dermatological lesions combined with neurological, ophthalmic and dental involvement. Ocular involvment is common and diverse and retinal changes are the most frequent and associated with serious visual loss. We reported a case of a child with severe visual loss due to glaucoma, with no significant retinal changes.

Keywords: *Incontinentia pigmenti/diagnosis; Incontinentia pigmenti/genetics; Glaucoma; Retina; Case reports*

RESUMO

Incontinência pigmentar, também conhecida como síndrome de Bloch-Sulzberger, é uma doença rara de herança dominante ligada ao X cujas manifestações clínicas incluem lesões dermatológicas típicas combinadas com acometimento neurológico, oftalmológico e dentário. Alterações oculares são comuns e variadas, sendo o acometimento da retina o mais frequente e associado a perda visual severa. Foi relatado um caso de uma criança com perda visual grave decorrente de glaucoma, sem alteração retiniana significativa.

Descritores: Incontinência pigmentar/diagnóstico; Incontinência pigmentar/genética; Glaucoma; Retina; Relatos de casos

[1] Residency Program in Ophtalmology, Hospital dos Olhos de Feira de Santana, Feira de Santana, BA, Brazil.
[2] Department of Retina and Vitreous, Hospital dos Olhos de Feira de Santana, Feira de Santana, BA, Brazil.
[3] Department of Glaucoma, Hospital dos Olhos de Feira de Santana, Feira de Santana, BA, Brazil.

Institution where the study was carried out: Hospital dos Olhos de Feira de Santana, Feira de Santana, BA, Brazil.

The authors declare no conflicts of interests.

Received for publication 09/11/2017 - Accepted for publication 13/12/2017.

Introduction

Incontinentia pigmenti is a rare disorder whose dominant X-linked inheritance justifies the high prevalence in women, tending to lethality in male fetuses. Also known as Bloch-Sulzberger syndrome, the disease affects structures of ectodermal origin, such as skin, teeth, hair, central nervous system and eyes.[1,2]

The diagnosis can be made with a genetic test to detect the NEMO mutation (essential modulator NF-kB), but mainly it is based on clinical criteria, among which ocular alterations are included (Tables 1 and 2).[3,4] Ocular involvement is present in at least 21% of patients, [5] and may reach 77%.[1] The main site of ocular alteration in pigment incontinence is the retina, usually involving alterations in the pigment epithelium (RPE) and proliferative retinopathy, including neovascularization, haemorrhages and peripheral ischemia, with less involvement of the posterior pole.[2,6] Other ocular findings have been described in patients with the disease, including cataract, optic atrophy, phitisis bulbi, strabismus, corneal alterations, among others, and the onset of glaucoma in these patients is uncommon.[1,2,7]

Table 1
Diagnostic criteria of pigment incontinence in the absence of family history (Landy and Donnai, 1993)[4]

Major criteria
-Typical neonatal vesicular rash (erythema, vesicles, eosinophilia)
-Typical hyperpigmentation (mainly in the torso, Blaschko lines, which disappear in adolescence)
-Linear atrophic lesions associated with alopecia
Minor criteria
-Dental anomalies
-Alopecia
-Nail abnormalities, wooly hair
-Retinal disorders

Table 2
Diagnostic criteria of pigment incontinence in patients with family history (Landy and Donnai, 1993)[4]

Criteria
- Suggestive history or evidence of typical rash
- Cutaneous manifestations of IP: hyperpigmentation, cicatricial lesions, atrophic lesions and atrophic linear lesions associated with alopecia, alopecia at the apex of the scalp
- Dental anomalies
- Wooly hair
- Successive abortions of male fetuses
- Retinal disorders

It is a report of a patient with pigment incontinence diagnosed by clinical criteria with juvenile glaucoma and without typical retinal involvement.

Case Report

Patient TVS, female, seven years old, diagnosed with incontinentia pigmenti according to clinical criteria due to the presence of typical hyperpigmentation in the skin, alopecia, woolly hair, dental and nail abnormalities (Figure 1), with no family history, but with increased intraocular pressure (IOP) in the left eye detected in a routine ophthalmological appointment, with glaucomatous damage being then identified in the corresponding optic nerve.

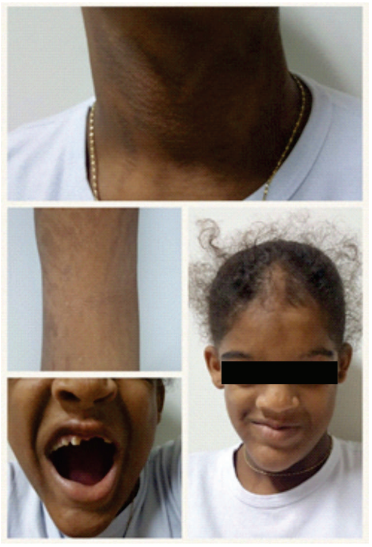

Figure 1: Color picture showing typical hyperpigmentation in the cervical region and forearm, besides dental anomalies and woolly hair

She started using dorzolamide hydrochloride 2.0% eyedrops and timolol maleate 0.5%, keeping this hypotensive treatment unchanged for 3 years due to reaching the target IOP. At the age of 10, she underwent progressive worsening of visual acuity in the left eye, seeking new ophthalmologic follow-up.

At the examination, she presented visual acuity with correction (Snellen table) of 20/100 in the right eye (RE) and finger count at 30 cm in the left eye (LE), horizontal nystagmus, palpebral ptosis and IOP of 16 mmHg in the RE and 28 mmHg in the LE, measured with Goldmann's tonometer. Bimatoprost eyedrops was added to the previous topic hypotensive scheme.

The patient evolved with maintenance of elevated IOP in the LE (14mmHg in the RE and 40mmHg in the LE), and oral acetazolamide was prescribed according to the child's weight. The examination of the anterior segment had no alterations, and fundoscopy of the eye evidenced an excavation of 0.5 in the RE and total in the LE, besides atrophy of the retinal pigment epithelium (Figure 2). An indirect gonioscopy examination revealed an anterior chamber angle open 360 degree of both eyes.

The patient underwent trabeculectomy surgery using 0.02% mitomycin in the LE, evolving postoperatively with good blood

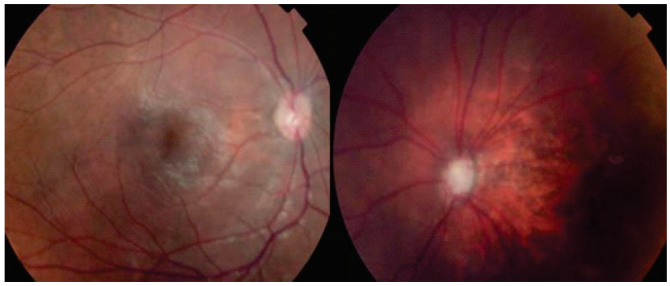

Figure 2: Simple retinography with visualization of diffuse RPE atrophy in the LE

pressure control (8 mmHg), analgesia adequately managed with non-hormonal anti-inflammatory drugs orally, anterior chamber formed , in addition to a raised and vascularized filtering bubble and a patent sclerotomy seen at the gonioscopy.

Discussion

Despite being a rare disease, pigment incontinence has been more studied in the last decade and, consequently, with a more complete characterization of the ocular involvement. Since it was first described in 1906, numerous cases of ocular anomalies were detected.[8]

In a study by Carney et al.[2] of all the IP cases studied between 1906 and 1975, 286 ocular anomalies were found in 160 patients with the disease, being this the largest study of the period relating IP with ophthalmological alterations. Between 1976 and 2010, 1931 patients were described in the literature, and ocular alterations were found in 60% of these.[7] In this meta-analysis and taking into account the two periods described above, a total of 972 ocular alterations were described, with retinal alterations being the most frequent, as well as the main threats to vision.

Ocular manifestations in PI are described in 2 groups of patients: those with mild manifestations and those with severe manifestations, including retinal detachment, ruptures, high myopia, macular fibrosis and cataract.[1]

In this case reported, the patient showed only rarefaction of the retinal pigment epithelium, in addition to the glaucomatous alterations found on the optic disc. The left eye showed important low vision. However, due not to retinal or vitreous alterations, but to nerve damage due to poor intraocular pressure control.

The asymmetry of the ocular findings described in the present case is consistent with the findings in the literature, with the right eye sight being preserved so far. The average age of the first ocular exam in these patients is 8 years,[9] and even the case of the present patient, who underwent an early ophthalmologic examination, there was a rapid progression of the glaucomatous lesion despite ophthalmologic follow-up. Even with only one case, the benefit of a more rigorous ophthalmologic follow-up for IP patients is thus seen.

There is no report in literature of patients with PI developing juvenile glaucoma and evolving with significant visual loss, even in the use of maximum pharmacological therapy. The meticulous evaluation of the optic disc is necessary in order to identify the glaucomatous lesion that can often be confused with papilla atrophy, a finding already widely described in the literature.

References

1. Holmström G, Thorén K. Ocular manifestations of incontinentia pigmenti. Acta Ophthalmol Scand. 2000;78(3):348-53.
2. Carney RG. Incontinentia pigmenti. A world statistical analysis. Arch Dermatol. 1976; 112(4):535-42.
3. Scheuerle A, Ursini MV. Incontinentia pigmenti. In: Pagon RA, Bird TD, Dolan CR, Stephens K, Seattle WA, editors. Gene reviews. Seattle (WA): University of Washington; 1999..
4. Landy SJ, Donnai D. Incontinentia pigmenti (Bloch-Sulzberger syndrome). J Med Genet. 1993; 30(1):53–9.
5. Portaleone D, Taroni F, Micheli S, Moioli M, Pedrazzini A, Cognizzoli P, et al. Proposal for a protocol for the staging of incontinentia pigmenti in pediatric age. Minerva Pediatr. 2007; 59 (3):255-65.
6. Goldberg MF, Custis PH. Retinal and other manifestations of incontinentia pigmenti (Bloch-Sulzberger syndrome). Ophthalmology. 1993;100(11):1645-54.
7. MinićS, ObradovićM, KovacevićI, Trpinac D. Ocular anomalies in incontinentia pigmenti: literature review and meta-analysis. Srp Arh Celok Lek. 2010;138(7-8):408-13.
8. Garrod AE. Peculiar pigmentation of the skin of an infant. Trans Clin Soc London. 1906; 39:216.
9. O'Doherty M, Mc Creery K, Green AJ, Tuwir I, Brosnahan D. Incontinentia pigmenti ophthalmological observation of a series of cases and review of the literature. Br J Ophthalmol. 2011;95(1):11-6.

Corresponding author:
Carolina Campos Reis
Avenida Sampaio, 543, Centro, Feira de Santana, BA, Brazil
Zip Code 44001-575
E-mail: carolcamposr@yahoo.com.br

ERRATA

In the article "Unusual ocular manifestation in patients with pigment incontinence", with DOI: 10.5935 / 0034-7280.20180046, published in the Revista Brasileira de Oftalmologia, vol. 77, n. 4, p. 211-213, on page 212, substitution of figure 1 occurred because it was published without the stripe that preserves the patient's privacy.