

CASE REPORT

Hereditary benign intraepithelial dyskeratosis: a new case?

Bruno Correia Jham, Ricardo Alves Mesquita, Maria Cássia Ferreira Aguiar, Maria Auxiliadora Vieira Carmo

Department of Oral Surgery and Pathology, School of Dentistry, Federal University of Minas Gerais, Minas Gerais, Brazil

Hereditary benign intraepithelial dyskeratosis (HBID) is a rare disorder first described in 1960. To date, all but one published case trace their ancestry back to an Indian tribe in North Carolina. Affected patients usually develop asymptomatic ocular and oral lesions. The latter may resemble other dermatologic conditions that affect the oral mucosa, such as white sponge nevus. This report describes a case of a Brazilian patient who showed clinical and histological features of HBID, which appears to be the first reported case in South America. Although genetic analysis could not be carried out, the family history suggests a genetic etiology.

J Oral Pathol Med (2007) 36: 55–7

Keywords: hereditary benign intraepithelial dyskeratosis; hereditary diseases; genodermatosis

Case description

A 32-year-old Brazilian black man was referred for evaluation of intra-oral bilateral white lesions, of unknown duration. Medical history revealed hypertension, type 1 diabetes, and chronic renal insufficiency. The patient was undergoing hemodialysis three times a week and was on a waiting list for pancreas and kidney transplants. Bilateral asymptomatic reddened gelatinous plaques and dilated vessels were observed on the conjunctiva of both eyes, resulting in a 'red eye' feature (Fig. 1). White rough bilateral asymptomatic diffuse multiple and folded plaques in the posterior buccal mucosa were observed intra-orally (Fig. 2). Cutaneous or other mucosal lesions were absent. With main diagnosis hypothesis of sponge white nevus, an incision biopsy was performed which revealed increased epithelial thickness, hyperplasia, and acanthosis. Numerous large vacuolated cells were observed throughout the

epithelium. Dyskeratotic cells could be seen in the supra-basal and superficial layers, with some appearing to be 'engulfed' by the surrounding cells, in a 'cell-within-cell' pattern (Fig. 3). The findings were compatible with hereditary benign intraepithelial dyskeratosis (HBID). The patient was informed of the non-malignant and hereditary character of the disease, and no further treatment was necessary. His brother had eye alterations compatible with HBID, but oral lesions were absent. His mother and sister had no oral or ocular alterations. His father had already passed away.

Comments

Hereditary benign intraepithelial dyskeratosis is a rare autosomal dominant hereditary genodermatosis first described in 1960 by Von Sallmann and Paton (1). The authors identified the new entity in family members of an isolated tri-racial population in North Carolina. Several additional cases were subsequently reported in the USA, and all but one traced their ancestry back to North Carolina (2). Also, cases of an English woman and a German family affected by the condition were reported, although not published (3). We describe a case that fulfills the criteria for the diagnosis of HBID, affecting a Brazilian patient. The case reported herein may be the first one described in South America.

Hereditary benign intraepithelial dyskeratosis affects oral and ocular mucosa with onset usually at birth or early childhood. Oral lesions are usually asymptomatic and may vary in extent. Most oral lesions go unrecognized until examined (4). This was also true for our patient, who had never noticed his oral lesions and was referred by his physician for evaluation. In addition, he had only one affected site – the buccal mucosa – and lesions were more pronounced on the right-hand side.

Ocular lesions in HBID begin early in life, being noted in nearly all affected persons by the age of 1 year. Eye lesions are typically bilateral and present themselves as bizarrely shaped translucent perilimbal bulbar conjunctiva tissue proliferation. Redness of the eye is the most striking sign of the disease, and lesions are frequently

Correspondence: Maria Auxiliadora Vieira do Carmo, Department of Oral Pathology, School of Dentistry, Universidade Federal de Minas Gerais, Av Antonio Carlos, 6627 Pampulha 31270-901, Belo Horizonte, Minas Gerais, Brazil. Tel: + 55 31 3499 2476, Fax: + 55 31 3499 2430, E-mail: dorinhac@odontofmg.br
Accepted for publication May 3, 2006

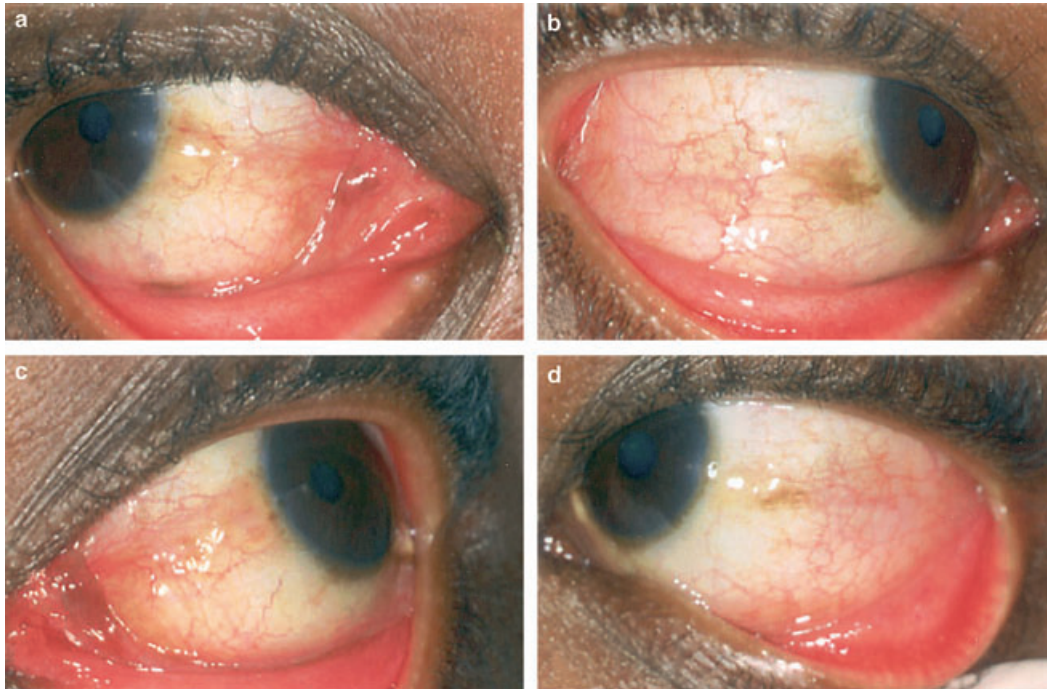


Figure 1 Ocular bilateral gelatinous conjunctival plaques with dilated blood vessels. Internal (a) and external (b) aspects of the right eye, and in internal (c) and external (d) aspects of the left eye.

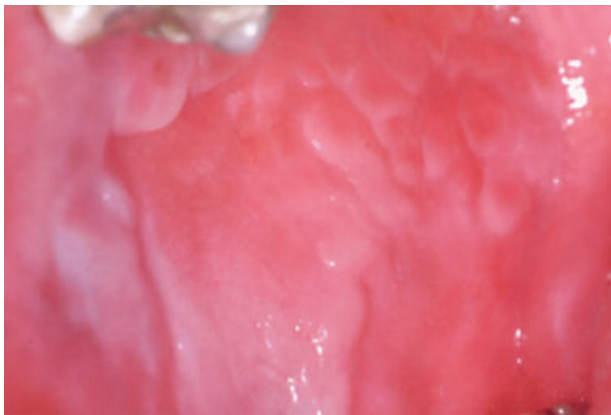


Figure 2 Intra-oralview demonstrating white diffuse rough plaques in the right buccal mucosa.

symptomatic (1, 5). Similarly, our patient reported having his eye lesions since he was a child, however, without associated symptoms.

Histopathological changes of the oral mucosa include increased epithelial thickness and numerous dyskeratotic cells and are very similar to the ocular changes. Dyskeratosis may be prominent in the superficial layers. Cells appearing to be engulfed by normal cells, the so-called 'cell-within-cell' pattern, can also be seen (4). All of these features were observed in our case. In addition, eosinophilic condensation in the perinuclear region, which is considered unique to white sponge nevus, was not found.

Attempts should be made to differentiate HBID from leukoedema, dyskeratosis follicularis, focal epithelial

hyperplasia, hereditary mucoepithelial dyskeratosis, leukoplakia, and white sponge nevus (4, 5). Although the oral features of HBID are remarkably similar to those of white sponge nevus, in the latter no eye lesions are observed. Furthermore, in white sponge nevus the external genitalia and rectum are also affected (5). Nevertheless, white sponge nevus was our first diagnosis option, as HBID had not been previously reported in South America.

Hereditary benign intraepithelial dyskeratosis is an entirely benign condition (4). Hence, no further treatment is required for oral lesions after establishment of diagnosis. Several modalities of treatment have been attempted for eye lesions, including topical medications and surgical procedures. However, the abnormal epithelium almost invariably recurs after excision (1). As our patient had no ocular symptoms, he was not referred to an ophthalmologist.

In 1968, Yanoff (6) evocated founder effect, according to which genes can be 'transferred' from one place to another, as people relocate. However, the concept of founder effect is population-based, and should not be applied to a single family as in the present case. Other possibilities such as mutation, vertical transmission, and influence of environmental factors should be considered (6). Recently, Allingham *et al.* (2) localized the HBID gene to chromosome 4 (4q35). Although in our case genetic analysis could not be carried out, the patient's brother did have at least some features of HBID. This cannot be ignored in light of the well-known variation in expression of most dominant autosomal disorders. Thus, in this case, the family history suggests a genetic etiology.

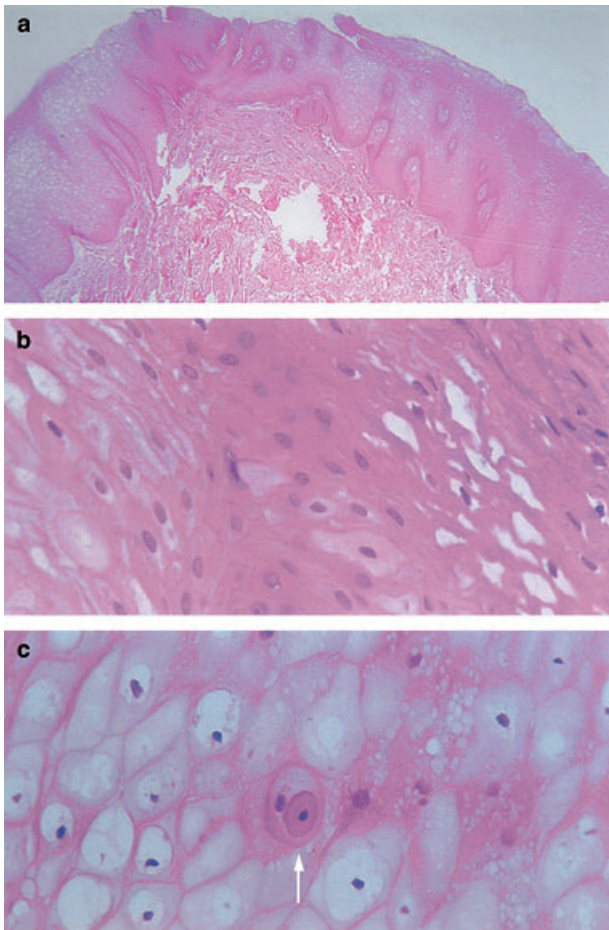


Figure 3 (A) Epithelial thickness, hyperplasia, acanthosis, and vacuolated cells (HE $\times 100$). (B) Dyskeratotic cells in the superficial layers (HE $\times 400$). (C) 'Engulfed' cell (arrow), in a 'cell-within-cell' pattern (HE $\times 400$).

References

1. Von Sallmann L, Paton D. Hereditary benign intraepithelial dyskeratosis. I. Ocular manifestations. *Arch Ophthalmol* 1960; **63**: 421–9.
2. Allingham RR, Seo B, Rampersaud E et al. A duplication in chromosome 4q35 is associated with hereditary benign intraepithelial dyskeratosis. *Am J Hum Genet* 2001; **68**: 491–4.
3. Sadeghi EM, Witkop CJ. Ultrastructural study of hereditary benign intraepithelial dyskeratosis. *Oral Surg Oral Med Oral Pathol* 1977; **44**: 567–77.
4. Witkop CJ Jr, Shankle CH, Graham JB et al. Hereditary benign intraepithelial dyskeratosis. II. Oral manifestations and hereditary transmission. *Arch Pathol* 1960; **70**: 696–711.
5. Haisley-Royster CA, Allingham RR, Klintworth GK, Prose NS. Hereditary benign intraepithelial dyskeratosis: report of two cases with prominent oral lesions. *J Am Acad Dermatol* 2001; **45**: 634–6.
6. Yanoff M. Hereditary benign intraepithelial dyskeratosis. *Arch Ophthalmol* 1968; **79**: 291–3.

Acknowledgments

The authors would like to thank CAPES, FAPEMIG, and CNPq for financial support. RA Mesquita and MCF Aguiar are fellow researchers of CNPq.