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Focal epithelial hyperplasia (Heck's disease): report of a case in a girl of Brazilian Indian descent

W. D. MARTINS, A. A. S. DE LIMA & S. VIEIRA
Faculty of Dentistry, Pontifical Catholic University of Paraná (PUCPR), Curitiba, Brazil

Summary. *Background.* This report describes the case of a patient with focal epithelial hyperplasia (FEH), a rare but distinctive entity of viral aetiology with characteristic clinical and histopathological features.
Case report. The condition is usually seen in children and adolescents of American Indian and Eskimo background. Surgical removal of papillomatous lesions is the treatment of choice, either for aesthetic reasons, or when the lesions interfere with function or are readily traumatized. Recurrence and the site of new lesions are unpredictable, and continued review of the patient is often necessary. The patient described here has been followed for 24 months without recurrences or changes in the aspect of the remaining lesions.
Conclusion. This case highlights a possible genetic predilection for FEH, since the patient is a descent of a Brazilian Xavante Indian.

Introduction

The first reports of intraoral epithelial eruptions were made in 1894, and described lesions in Eskimos from Greenland [1]. These lesions were similar to those subsequently described for focal epithelial hyperplasia (FEH). In the Latin American literature, a review has revealed four publications before 1965 [2–5].

Intraoral papillomatous lesions in Caramanta Indians and in a Katios Indian, both from Colombia, have been described [2,3]. The same condition was noted in Guatemala [4]. The disease and its clinical variations on the buccal mucosa, lips and other oral mucosas were described in more detail by Soneira and Fonseca [5]. Microscopic studies have demonstrated the presence of binucleated cells and marked cytolysis, and a viral origin was suspected. These authors should be recognized as the first to fully describe this disease. The frequently used eponym Heck's disease was derived from Dr John Heck, who identified a patient with this condition in New Mexico in 1961 [6].

The aim of this study was to detail the features of FEH in a Brazilian child of Xavante Indian descent.

Case report

A 14-year-old white girl who was otherwise healthy was referred to the Oral Medicine Clinic of the Pontifical Catholic University of Paraná, Curitiba, Brazil, for investigation of multiple oral mucosal lesions. Examination revealed four elevated, sessile, smooth-surfaced nodules situated in the mandibular left buccal gingiva, canine and bicuspid region (Fig. 1). The lesions were firm on palpation, covered by healthy, normal-appearing mucosa, and neither ulcerated nor inflamed. They ranged in size from 1 to 3 mm in diameter. The lesions had been present

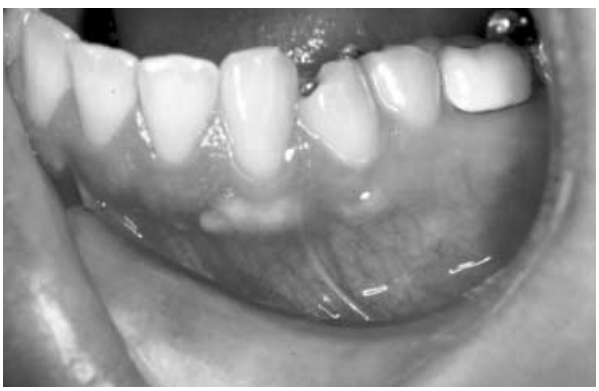

Fig. 1. Sessile, smooth-surfaced nodules involving the buccal left mandibular gingiva, canine and bicuspid region.

Correspondence: W. D. Martins, Av. República do Libano, 462-82520-500, Curitiba – PR – Brazil. E-mail: w.denis@pucpr.br

for several years and had been largely asymptomatic. They had never interfered with mastication nor were they of aesthetic concern for the patient. The patient became aware of the presence of the lesions by self-examination of her mouth, motivated by campaigns of oral cancer prevention.

The family history revealed that, through her paternal grandfather, she was descent of a Brazilian Xavante Indian. Her paternal grandmother was Caucasian. Her father and her 20-year-old sister were examined, but presented no similar oral lesions (Fig. 2).

Based on her history, a clinical diagnosis of FEH was proposed. To check this further, one of the largest lesions was excised and submitted for microscopic examination.

Part of the specimen was processed for histological examination. The other half of the specimen was frozen and stored for polymerase chain reaction (PCR) analysis. Microscopically, the lesions demonstrated epithelial hyperplasia with acantosis and hydropic degeneration. Some mitosoidal cells were found. The rete ridges were frequently joined (the so-called 'Bronze Age battle-axe' or 'clubs' appearance). The oral surface was parakeratinized. This histological picture was consistent with the clinical diagnosis of FEH (Figs 3 and 4). The PCR was positive for human papilloma virus (HPV) 13 [16].

The biopsy site healed without complications and there have been no recurrences over a period of 24 months.

Discussion

Focal epithelial hyperplasia has only been described in people of Mongoloid descent. The condition has been described independently in two publications in the American literature [6,7]. One group [6] presented findings from 15 Navajo Indians from New Mexico, two unidentified Indians from the Southern USA, one Eskimo and one Xavante Indian from Brazil. Another group [7] presented cases in seven Brazilian Xavante Indians, two Latinos from El Salvador and two Maya Indians from Guatemala.

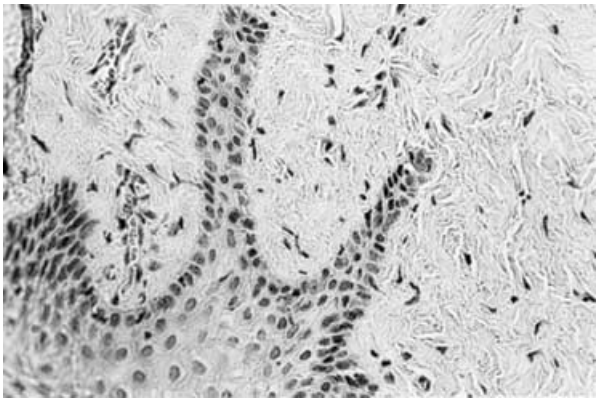

Fig. 2. Micrograph showing the presence of the rete ridges ('Bronze Age battle-axe' or 'clubs' appearance). Some mitosoidal cells are distinguishable (H&E, × 400).

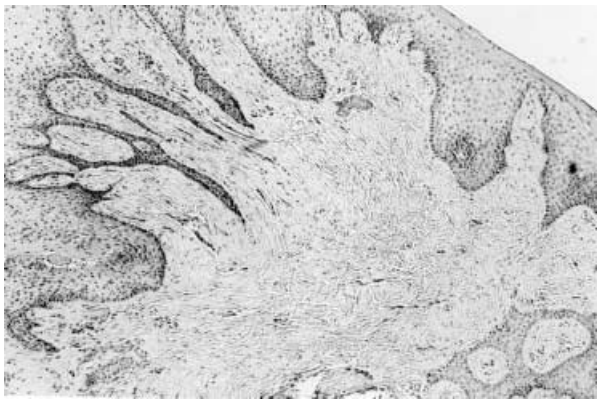

Fig. 3. Epithelial hyperplasia with acantosis and hydropic degeneration. The rete ridges are joined. The oral surface is parakeratinized (H&E, × 100).

Thus, the majority of cases published since 1965 have described this entity in various ethnic groups in Eskimos and North, South and Central American Indians. The presence of HPV 13 or HPV 32 has been demonstrated by immunohistochemical studies, and more recently, by *in situ* hybridization [8]. Identical HPV types in siblings and first-degree relatives of affected patients were found [9].

A large, more comprehensive study of 110 patients with FEH over a period of 3 years in Guatemala has also been presented [10]. In this study, a 2·2:1 female:male ratio, and a predominance of children and adolescents (average age = 11 years) were found. Ninety-seven per cent of presentations occurred in subjects in the first and second decades of life. Most of the lesions were located primarily on movable, nonkeratinized mucosa with the exception of the soft palate. The lesions were present in multiple intraoral locations; three patients had lesions at only one site, with multiple papulonodular eruptions at that site. The tongue and lower lips were affected in one and two subjects, respectively. The lesions were papulonodular in type in 95·5% of the patients.

Outside of the Americas, a case of FEH in a Japanese individual has been described. A microscopic study of this case revealed nuclear inclusions,

suggesting viral infection [11]. Although people of other races may be affected, there are relatively few reports of Caucasians with FEH. A large study was conducted in Sweden [12] and a total of 17 cases (0·11% of the population) were found, with no obvious geographical or familial distribution. A series of 17 cases in Norwegian Caucasians has also been described [13]. At least one other isolated case has also been reported [14].

Because of the strong racial bias, a genetic predisposing factor was offered as a possible aetiological factor of the disease by the first authors who described this condition in the American literature [6,7], a conclusion that has been supported by other authors [8,9,17,18].

This case report would certainly seem to support the genetic predilection for FEH, since the patient is a descent of a Brazilian Xavante Indian (Fig. 2).

Another comparison might be drawn between this case and a further isolated report of FEH in an African patient of Khoi-San descent [15], more closely related to American Indians than to African blacks.

Certainly, it appears that FEH is largely confined to certain geographical regions and to certain ethnic populations (American Indians) within those locations.

However, few familial cases have been reported to support the contention of a clear genetic origin [6]. The few studies and sporadic reports of Caucasians with FEH have revealed no geographical or familial distribution in either the Swedish and Norwegian series [12,13], or in the isolated cases [14,19].

Treatment and prognosis

The epithelial lesions seen in FEH may regress spontaneously or may increase in size. Surgical removal is the treatment of choice when this is indicated for aesthetic reasons, or where the lesions may interfere with function or are readily traumatized. Recurrence and the site where new lesions are likely to emerge are unpredictable, but there is a consensus in the literature that continued review of the patients is often necessary. The patient described here has been followed for a limited period of 24 months without any recurrence or change in the aspect of the remaining nodules.

It is intended that the patient will be reviewed annually. There are no currently plans for further therapy since the lesions are not of aesthetic concern to the patient. There is a consensus in the literature that lesions in FEH do not always require treatment and there is no suggestion of any malignant potential in FEH lesions.

The present case demonstrates that FEH may arise in children, even those of the second generation. This behaviour alerts clinicians to be aware of the possible diagnosis since FEH may arise in cases whose families have migrated from the sites where there is a high prevalence of this disease.

What this case report adds

• This case report adds to the dental literature a new case of a rare disease and highlights a possible genetic predilection for focal epithelial hyperplasia, since the patient is a caucasian girl of Indian descent.

Why this paper is important for paediatric dentists

• This paper brings to the attention of paediatric dentists an uncommon condition commonly observed in Indians descents. However, as familial cases have been reported (including the present case), FEH may arise in children whose parents have migrated from sites where there is a high prevalence of this disease, which would be considered in the differential diagnosis.

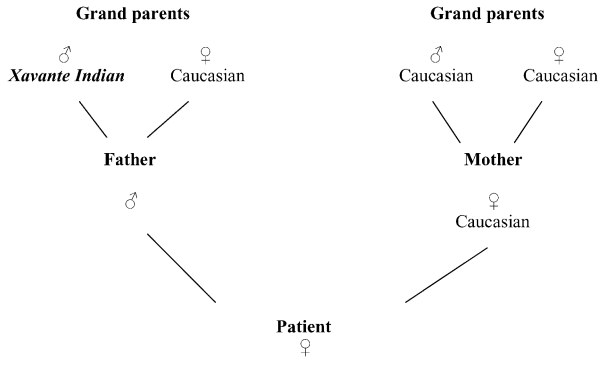

Fig. 4. Subject's familial history.

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