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HECKS DISEASE: A SERIES OF NIGERIAN CASES
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ABSTRACT

Heck's disease is a rare viral disease of the oral mucosa. It occurs mostly in children of diverse ethnic groups and in various geographical locations. In Nigeria, only 4 cases of Heck's disease have been previously reported. We report additional 8 cases to add to knowledge on this entity. Five of the cases reported in this study are siblings from the same family. The male to female ratio was 1.7:1, the mean age at presentation was 5.8 years, the most significantly affected site was the lower labial mucosa and females had higher predilection for total mucosae involvement.

INTRODUCTION

Heck's disease (HD) also known as Focal Epithelial Hyperplasia (FEH), Multifocal Epithelial Hyperplasia (MEH) or Multifocal Papillomavirus Epithelial Hyperplasia (MPEH) is a rare benign yet contagious lesion of the oral mucosa. It is seen as solitary or multiple painless, soft, whitish or pinkish, cobbled or smooth surfaced papule or nodule measuring about 1-10mm in diameter [1,2]. It is often a clinical incidental finding but may be noticed by the patient due to the poor aesthetic or functional problems it poses. HD was originally reported in children of American Indian ancestry, but this disease is now seen in other populations and ethnic groups.[3] Some cases have been reported in African countries such as South Africa, Kenya and Nigeria.

HD is considered as a Human Papilloma Virus (HPV) afffectation.[4] The HPV is a non-encapsulated DNA virus with a site-specific predilection for both keratinized and non-keratinized epithelial and mucosal surfaces.[4] HPV subtypes 13 and or 32 have been found in 90% of cases of HD with the subtype 13 isolated in the young and old and subtype 32 only isolated in the old.[4] This disease can affect any oral mucosa but has a predilection for the lower lip, buccal mucosa and tongue respectively.[2]

Risk factors for HD include Human Leucocyte Antigen (HLA) type DR4

(DRB1*0404) allele, immune suppression such as in HIV infection, malnutrition, poverty, crowded living and poor hygiene.[3,4] Children in the 1st and 2nd decades of life are more commonly affected than adults.[3] Regarding gender predilection there is controversy, while some authors found no gender predilection[1,6] others report a female preponderance.[5]

CASE SERIES

We report eight cases of Heck's disease seen at the Dental Center of the University College Hospital, Ibadan, Nigeria. Three were females and five were males. Five persons out of the eight cases are siblings. The age ranged from 2 to 10 years and the mean age was 5.8 years (+/- 2.4349), median was 5.5 years. The duration of lesion ranged from 3 months to 24 months and the mean duration of lesions was 9.4 months (+/- 7.2078), median was 8 months. Figure 1 shows the frequency of affected sites.

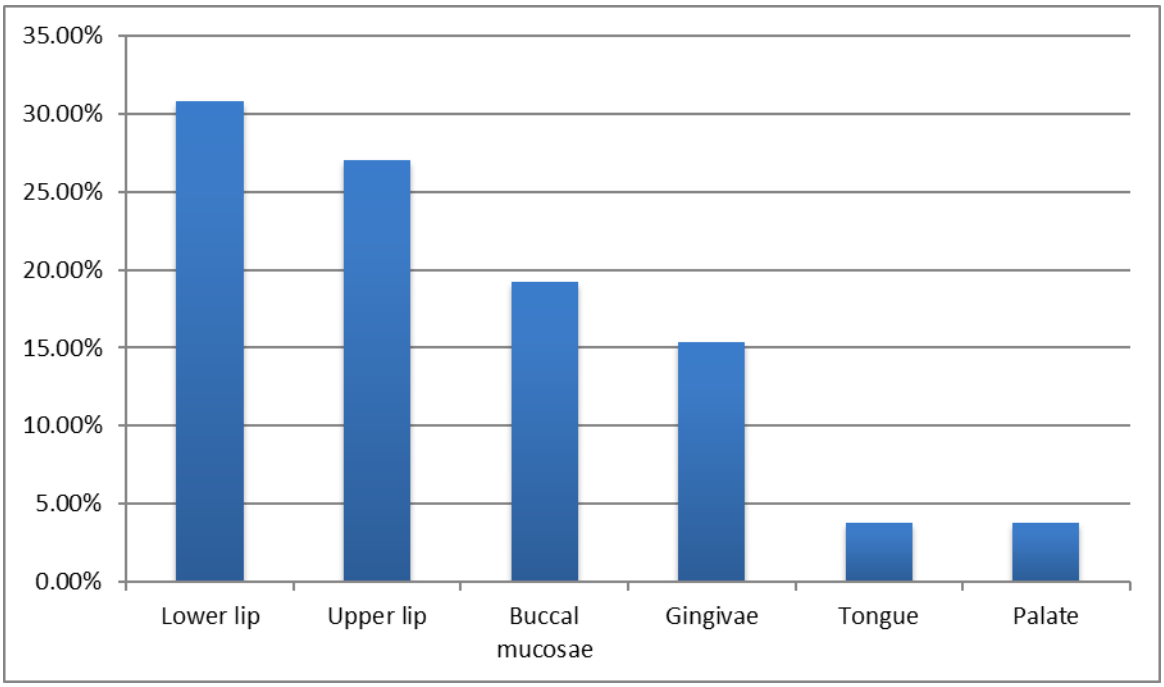

Figure 1: Shows site distribution of the lesions.

THE CASES

Cases 1-5

A 10-year old Nigerian girl was referred to the Paediatric Dentistry Clinic of the University College Hospital, Ibadan, Nigeria on account of multiple oral mucosal lesions of 2 years duration. The lesion started on the lower lip and gradually spread to other oral mucosae. The lesions were asymptomatic, and not associated with pro-dromal symptoms or illness at period of onset. The lesions did not affect oral functions but were aesthetically displeasing. A positive family history informed invitation of four siblings who had similar intraoral lesions but both parents had no lesion.

Clinical examination revealed that all five siblings had multiple sessile, flat topped, smooth, hypochromic and papullonodular lesions on varying mucosae (Table 1). A

clinical diagnosis of HD was made for the five siblings and treated topically with 5% Imiquimod once in three days at night for 3months. Recall examining for efficacy of treatment has been difficult, but patient's father claims significant improvement.

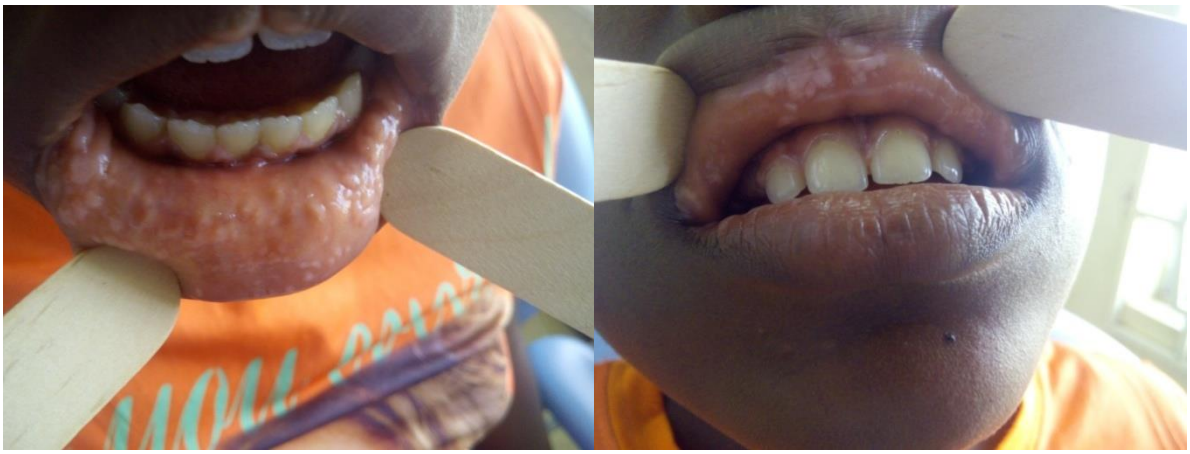

Figure 2: Showing multiple sessile flat topped, smooth, hypochromic and papullonodularlesions on the upper and lower lip mucosae of which of the siblings or cases?

Case 6

A 6-year old boy with 5 months history of oral white lesions involving the buccal, labial mucosae and attached gingivae. The lesion was painless but had been increasing in size. An excisional biopsy confirmed HD. The patient presented about one month after the excisional biopsy and clinical examination showed that the remaining lesion have resolved.

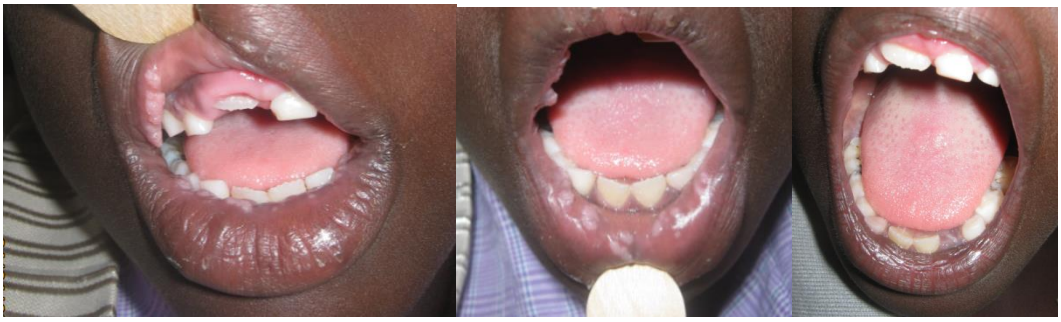

Figure 3: Multiple mucosal swellings seen in Case 6 and spontaneous resolution of the lesions a month afterwards.

Case 7

A 5-year old boy with 8 months history of lower lip swelling. The lesion was painless, not increasing in size or distribution and was not associated with febrile illness. Intra-oral examination revealed painless, pinkish, discrete, solid elevations on the mucosae of upper and lower lips with few on the buccal mucosa. A definitive diagnosis of HD was made following a histological biopsy

Case 8

A 5-year old girl presented with numerous warty-like lesions on the lips, buccal mucosae, soft and hard palate of 12months duration (Figure 4). A clinical diagnosis of HD was made and treated topically with 5% lmiquinoid once in three days at night for 3 months.

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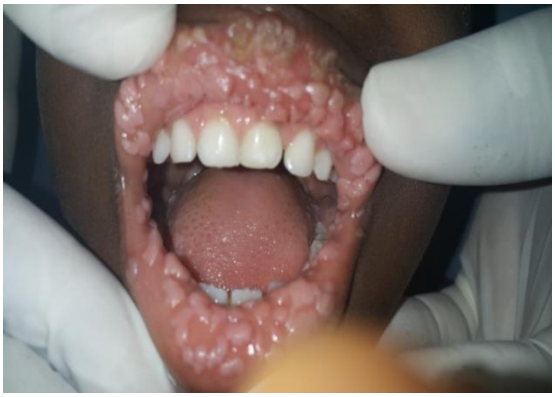

Figure 4: showing wart-like growths on the upper and lower lips.

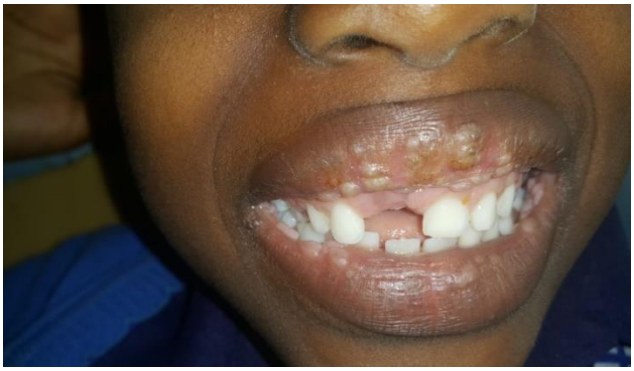

Figure 5: Showing a moderate reduction of the lesion 3months after commencement of Imiquimod.

Table 1
Clinical summary of all the cases with Heck's disease

Cases	Age (Years)	Gender	Duration of evolution (months)	Site of lesion	Size of lesion (millimeters)
1	10	Female	24	Upper lips Lower lips Gingivae Buccal mucosa	5-8
2	8	Male	12	Upper lips Lower lips Gingivae Buccal mucosa	1-5
3	6	Female	4	Upper lips Lower lips Gingivae Tongue	2-6
4	4	Male	3	lower lips	1-5
5	2	Male	10	Upper lips Lower lips	1-3
6	6	Male	5	Upper lips Lower lips Buccal mucosa	1-3
7	5	Male	8	Upper lips Lower lips Buccal mucosa	1-4
8	5	Female	12	Upper lips Lower lips Buccal mucosa Gingivae	2-5

DISCUSSION

In Africa, cases of Heck's disease have been reported in countries like South Africa, Sudan, Kenya, Ghana and Nigeria. In South Africa, over a hundred cases have been reported in descendants of the Khoi-San. In East Africa, three were reported in Kenya while in West Africa, ten cases have been described; six in Ghana and four in Nigeria.[7,8,9] In West and East Africa reports, nine cases were females and four males.

In Nigeria, the previous 4 cases reported in literature were exclusively in females whereas out of the eight cases seen in this present study, five were males and three females. The ages of the children from previous West African reports ranged from 4-12 years while those in this study ranged from 2-10 years showing a younger age of infection. The diameter of the lesions seen in this study was

similar to those reported in literature. The site of affectation of the lesions in this study however did not follow the pattern described in previous reports. In this study, the buccal and labial mucosae were affected in all cases with the lower lip affectation being the most pronounced. The gingivae were affected in only 3 cases and tongue in 2 cases. Females were noted to have more topographical soft tissue affectation with lesions affecting almost all oral soft tissue areas and causing a significant aesthetic disturbance thus requiring immediate management.

Management of HD is typically conservative in children because of the possibility of regression as observed with Case 6. But when management is to be instituted it should be relatively simple, cheap, effective, non-invasive, of low relative risk and associated with little or no side effects. The management of Heck's disease can be medical, surgical or a combination of the two. This involves the use of destructive or ablative therapy such as cryotherapy, topical application of trichloroacetic acid, electrosurgery, laser vaporisation and photodynamic therapy with topical aminolevulinic acid, antiproliferative therapy such as topical application of podophyllin resin,5-fluorouracil and Intereferon β and γ, immunomodulatory therapy such as topical application of imiquimod (Aldara) and interferon α (Fiblaferon). However, many of these management modalities are expensive, invasive, associated with significant side effects, relative risk and recurrence. Therefore, there arose the need for some therapy to overcome these problems. One of such is the use of Imiquimod cream which has been reported to successful in the treatment of lesions associated with heck's disease.[10]

Imiquimod is an immunomodulator or immune response modifier that is indicated in the treatment of conditions such as warts, actinic keratosis and superficial basal cell carcinoma. This imidazoquinolinamine derivative has no in-vitro antiviral activity but acts by utilising its toll-like receptor agonist activity to induce both the innate and acquired immune response. This receptor agonist activity causes chronic inflammatory cells such as macrophages to produce inflammatory substances known as cytokines. Cytokines which include interferon α, IL-1,2,6,8,10,12 and TNF-α then stimulate the natural killer cells to kill virally infected cells thus causing the regression and normalisation of keratinocyte proliferation.[10]

In this present study, two out of the three female cases had significant aesthetic disturbance and were managed with 5% imiquimod cream once in three days at night. A significant improvement was noticed but due to the cost of the medication compliance was difficult.

CONCLUSION

In this study we had more males than females but noted that oral topographical affectation was more pronounced in females and the lower lip was the most affected site in both gender. Although a few cases responded positively to topical Imiquimod, overall treatment was protracted and difficult mainly due to financial constraint and lack of compliance with prescribed protocols.

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