

## Heck's Disease

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### Abstract

Heck's disease or focal epithelial hyperplasia is a benign contagious disease caused by human papillomavirus types 13 or 32. It occurs with low frequency in the Iranian population. This condition is characterized by the occurrence of multiple, small papules or nodules in the oral cavity, especially on the labial and buccal mucosa and tongue. In some populations, up to 39% of children are affected. Conservative surgical excision of lesions may be performed for diagnostic or aesthetic purposes. The risk of recurrence after this therapy is minimal, and there seems to be no malignant transformation potential.

**Keywords:** heck's disease, hyperplasia, papillomavirus, papules

### 1. Introduction

Heck's disease or focal epithelial hyperplasia (FEH) is a relatively rare condition that is seen predominantly in children. It is more common in Native Americans and certain other ethnic groups than in those of western European origin [1-6]. The condition is noted to produce multiple, relatively small, raised plaques or papules on the mucosal surface of lips, buccal mucosa, tongue, and other sites. Lesions may be the color of surrounding mucosa or whiter. The lesions are asymptomatic and can be found by routine examination. 5-9 The frequency of this disease is variable with a wide range from 0.002 to 35% depending on the population studied and geographic region [4, 10]. The condition seems to remit spontaneously in most cases [6, 11]. Biopsy reveals epithelial hyperplasia acanthoses, bullous extension of rete ridges and focal or diffuse ballooning degeneration of spinous layer. Virus like particles have been observed in lesional keratinocytes, and viral antigens have been detected by immunohistochemistry [5, 6].

The etiologic agent of Heck's disease was first characterized in 1983 and was designated as HPV 13, which has a relation with HPV6 and HPV11. Later, another type of HPV was isolated from this disease and referred to as HPV 32. 13-15 No treatment is required, but lesions may be conservatively excised or treated with laser or cryotherapy if necessary [15-17].

### 2. Discussion

Focal epithelial hyperplasia is a rare virus induced and localized proliferation of oral squamous epithelial that was first described in Native Americans and Inuit's (Eskimos).

Currently, it is known to exist in many populations and ethnic groups and is apparently produced by HPV type 13 and possibly type 32 [5, 20, 21]. In many studies it has been shown that malnutrition, poor hygiene, and social conditions have also been associated with this disease. FEH has a wide range of frequency from one geographic region to another (from 0.002 to 35%) [4].

A literature survey by the authors show that there are only two studies of Heck's disease by Iranian investigators [22, 23]. In the study by Moussavi, two cases of FEH were reported. The patients were both white females. Multiple nodular

lesions were seen on the upper and lower labial and buccal mucosa. No further treatment was undertaken for the lesions. 22 FEH was also reported by Namazi in 2007. [23]

This disease occasionally affects young and middle-aged adults. Multiple papillary lesions similar to focal epithelial hyperplasia arise with increased frequency in AIDS patients [5, 8].

Sites of involvement in the oral cavity include the labial, buccal, and lingual mucosa. Gingival and tonsillar lesions have also been reported. Clinically, this disease appears as multiple soft, nontender, flattened or rounded papules, which are usually clustered and the same color as normal mucosa, although they may be scattered and pale. Rarely, occasional lesions show a slight papillary surface change. Individual lesions are small (3 to 10 mm), discrete and well demarcated, but they frequently may be clustered so closely together that the entire area takes on a cobblestone or fissured appearance [5-9].

The histological hallmark of focal epithelial hyperplasia is an abrupt with considerable acanthosis of the oral epithelium. Others occasionally demonstrate an altered nucleus that resembles a mitotic figure (mitosoid cell). Virus-like particles have been noted ultrastructurally within both the cytoplasm and the nuclei of cells, in the prickle cell layer. The presence of HPV has been demonstrated with both DNA in situ hybridization and immunohistochemical analysis [5-7].

The diagnosing Heck's disease is very important because many differential diagnosis such as: inflammatory fibrous hyperplasia, inflammatory papillary hyperplasia, verruciforme xanthoma, verrucous carcinoma, Cowden's disease, condyloma acuminatum, and Goltz-Gorlin syndrome are needed [8].

The first three lesions mentioned above are reactive lesions and an irritating agent can be identified in most cases. Verrucous carcinoma may occur in different age groups, along with epidemiological features which are typically found in oral carcinomas. Cowden's disease, which is characteristic of an older age group, causes fibroepithelial polyps. These polyps are less mobile and more consistent and have different intra-oral topographies. A differential diagnosis with condyloma acuminatum is needed and important because the

clinical appearance of isolated lesions in both diseases are similar, as they are both caused by HPV. FEH lesions tend to be flatter and more numerous. In addition, the location of FEH lesions which are mostly limited to the lip, tongue and buccal mucosa is very specific<sup>[15]</sup>.

PCR is a useful tool to identify the viral etiology of FEH lesions because it is a rapid and sensitive method.<sup>7</sup> Heck's disease tends to regress spontaneously although it can persist for many years, with cases having been described in the elderly<sup>[10, 11]</sup>. Surgical treatment is necessary only in the case of lip involvement by aesthetic problems or lesions that are constantly traumatized by biting<sup>[15, 16]</sup>.

Many methods of treatment have been proposed for FEH: scalpel surgery, cryotherapy, laser ablation, electrocoagulation, and topical treatments with retinoic acids or interferon<sup>[15, 17]</sup>.

Between different therapeutic procedures that have been reported, CO laser surgery seems to be one of the best. Advantages of this method are its haemostatic effect, healing without scarring, lesser risks of bleeding and infection and patient compliance.

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