CLINICO-PATHOLOGICAL STUDY OF LEUKOPLAKIA IN BABYLON

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Abstract

Leukoplakia is white patches of the oral mucosa that cannot be removed by scraping. During the period 1992 to 2002 inclusive, 204 cases of leukoplakia were studied at Department of Pathology, Medical College, Babylon University.

Many causes for leucoplakia have been found and as these might have distinctive features they have been classified accordingly. However, in about half the leucoplakias a cause could not be found. These causes included: frictional keratosis, smoker's keratosis; microbial infection, chronic hyperplastic candidiasis, tertiary syphilis, hereditary leucokeratosis and idiopathic.

The microscopical features of leucoplakia showed a spectrum of changes; at the benign end is epithelial keratosis alone, followed by hyperplasia and then epithelial atypia at the premalignant end.

Clinically the white patches varied from a soft, slightly thickened mucosa involving a small or very large mucosal surface, to hard, irregular white plaques with intervening normal, erosive, or ulcerated sites. Any part of the oral mucosa or gum might be involved but the cheeks and tongue were most often affected. Smoker's keratosis showed a characteristic distribution of the soft and adjacent hard palate, as keratinized papules with central red dots. Members of the family might have similar lesions.

All leucoplakias should be biopsied, except smoker's keratosis of the palate, as even small white patches have at times proved to be early carcinomas. It is furthermore, essential to find out the degree, if any, of epithelial atypia as this affects the prognosis of leucoplakia. Smoker's keratosis was reversible in many instances, if the patient gave up smoking. Candidal leucoplakia should be treated with topical antifungal drugs. Leucoplakia showing evidence of epithelial atypia should be excised.

Keywords: Leukoplakia, Clinico-pathological, Babylon.

Introduction

Leukoplakia is a clinical term.[1,2] It has been defined by Pindborg et al [3] as a white patch or plaque, not less than 5 mm in diameter, that cannot be removed by rubbing and cannot be classified as any other diagnosable disease. The prevalence of leucoplakia is not known, but it seems that during the past two decades it has become less frequent. Leucoplakia may persist for life, without any discomfort or change. It seems that epithelial atypia is more commonly associated with speckled leucoplakia and the latter as well as syphilitic leucoplakia have a worse prognosis. In contrast, smoker's keratosis and frictional keratosis have a very good prognosis if the offending cause is removed. Congenital or hereditary leucokeratosis were thought to be free of malignant changes, though recently a few cases with carcinomatous transformation have been reported.

References

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The purpose of this study was to determine the relative frequency and clinico – pathological features and management of leucoplakias lesions in Babylon province during the period 1992-2002 and to provide data for comparison with other studies.

Patients and Methods

During spanning from 1992 to 2002 inclusive, 204 cases of leucoplakia were studied and treated in Hilla teaching hospitals. The slides, which were stained by standard Hematoxylin and Eosin, were examined histologically and classified accordingly. Special stains were used in some cases. The files of the cases were studied for age and sex distribution of patients and the anatomical sites of the lesions. Causes of leucoplakia were analyzed. History of physical and chemical agents, microbial infection, smoking were thoroughly investigated.

Results

During the ten years period under review, 204 cases of leucoplakia were analyzed. The patients ranged in age from (10-71) years with a mean age of 47 years, with a male to female ratio of 1.5:1 . Many causes of leucoplakia were identified and as these might have distinctive features they were classified accordingly. It should be noted, however, that in about half the leucoplakias a cause cannot be found. Causes included:

(1)physical and chemical agents: frictional keratosis, smoker's keratosis (32%). (2)microbial infection: chronic hyperplastic candidiasis, tertiary syphilis(16%).(3)congenital and hereditary leucokeratosis (4%). (4)idiopathic (a cause cannot be found) (48%).

The microscopical features of leucoplakia lesions showed a spectrum of changes(Fig 1,2); at the benign end is epithelial keratosis alone, followed by hyperplasia and then epithelial atypia at the premalignant end. The lamina propria showed in parallel an increase in mononuclear cells, especially plasma cells. Carcinoma in situ was the least common histological finding.

CLINICAL FEATURES: The white patches varied from a soft, slightly thickened mucosa, involving a small or very large mucosal surface, to hard, irregular white plaques with intervening normal, erosive, or ulcerated sites. The latter is often referred to as speckled leucoplakia and must be recognized clinically because of its greater propensity to carcinomatous transformation(Fig.3). Any part of the oral mucosa or gum might be involved but the cheeks and tongue were most often affected.

Frictional keratosis was usually found along the occlusal line of buccal mucosa and presents as a linear white patch of even consistency. Smoker's keratosis (Fig.4) shows a characteristic distribution of the soft and adjacent hard palate, as keratinized papules with central red dots. The distribution was due to involvement of the palatal mucous glands and the red dots are the openings of the ducts. It is usually caused by pipe smoking, but cigarette smoking might also lead to keratosis of a diffuse type, affecting most commonly the cheeks.

Congenital and hereditary leucokeratosis was distinguished by the presence of diffuse, soft, white plaques, often with a folded surface. The lesions tended to be symmetrical; they affected the floor of the mouth. Members of the family had similar lesions.

All leucoplakias were biopsied, except smoker's keratosis of the palate, as even small white patches have at times proved to be early carcinomas .It was, furthermore, essential to find out the degree, if any, of epithelial atypia as this affects the prognosis

of leucoplakia. Direct examination of scrapings for the presence of hyphae of can cultures for candida and serological tests for the diagnosis of candidiasis syphilitic leucoplakia were done.

TREATMENT :Smoker's keratosis was reversible in many instances, when patients gave up smoking. Frictional keratosis were cleared by removing the cause of irritation. Candidal leucoplakia was treated with topical antifungal though this rarely results in permanent clearance of the lesion. Syphilis was ma by a course of penicillin and stringent follow-up, so as to detect early carcinomatous transformation. Leucoplakia showing evidence of epithelial atypi excised. However, in many cases the lesion ▯ ecurred, even after repeated exci There was no satisfactory treatment of leucoplakia and the most important point long-term follow-up, so as to detect in time the development of an inci carcinoma.

COURSE AND PROGNOSIS: In many patient, leucoplakia might persist for without any discomfort or change. However, about 5 per cent of all leucopl undergone malignant changes and this figure increases to about 22 per cent leucoplakias showing histological evidence of epithelial atypia. It seemed epithelial atypia was more commonly associated with speckled leucoplakia and latter as well as syphilitic leucoplakia had a worse prognosis. In contrast, smok keratosis and frictional keratosis had a very good prognosis when the offending was removed. Congenital or hereditary leucokeratosis were free of malignant chan

Discussion

Leucoplakia represent an important disease with clinical manifestation prevalence of leucoplakia is not known, but it seems that during the past two dec it has become less frequent. It is more appropriate to diagnose this lesi microscopically as keratosis and to grade the dysplastic changes (if any) as moderate, or severe[4-7], using criteria equivalent to those employed for other squamo epithelia, .The implicit assumption is that the greater these changes, the higher premalignant potential. Other authors have proposed to designate these lesions as *intraepithelial neoplasia (OIN),* grades I to III, by analogy with the terminology has been used for years for the uterine cervix.[5] Sometimes these dysplastic changes are accompanied by a "lichenoid" histology (i.e., hyperkeratosis, prominent granular layer, irregular basal layer, saw-toothed rete pegs, and band-like inflammatory infiltrate). This change, which has been referred to as *lichenoid dysplasia,* should not be confused with true lichen planus of the oral cavity[8-10] The dysplastic changes can extend to the ducts of minor salivary glands[11]. Standardization of these changes is difficult, and a certain degree of subjectivity exists in this evaluation. The hope that a sharper and more consistent separation will become feasible with special techniques has yet to be realized[12].

DNA ploidy studies have shown that about one third of "leukoplakic" lesions are aneuploid, but that the relationship of this parameter with the grade of dysplasia is poor.[13] NOR distribution counts in dysplasia have an intermediate value between those of normal mucosa and invasive carcinoma, but there is a great deal of overlap[14]. Over expression of p53 oncoprotein has been found in only a small minority of the dysplasias[15,16,17,18].

In the normal or hyperplastic squamous mucosa, expression of cytokeratin 19, epidermal growth factor (EGF), and proliferating cell nuclear antigen (PCNA) are all limited to the basal cell layer, whereas in dysplasia they are often expressed also in

suprabasal cells; of these, PCNA seems the most consistent and therefore the most potentially useful for the identification and grading of this disorder[15,16,19].

The most common location of leukoplakia in our study is the buccal gingival gutter.this is in agreement with other study[20]. Waldron and Shafer[21] found that the highest incidence of epithelial alterations, ranging from dysplasia to carcinoma in situ, was seen in leukoplakia of the floor of the mouth, particularly in men. This correlates well with the location of squamous cell carcinoma of the oral cavity.

In the present study , Over 50% of the leukoplakia have superimposed infection by *Candida albicans*. Pindborg et al[3]. divide leukoplakia into two types: speckled and homogeneous. Over 60% of the former have superimposed infection by *Candida albicans*.[22]

In the present study, followed 204 patients with oral leukoplakia for 1 to 10 years; only 5% developed squamous cell carcinoma. Pindborg et al.[3] followed 248 patients with oral leukoplakia for similar peroid; 4% developed squamous cell carcinoma. Most of the leukoplakias in this group were of the speckled type. In Einhorn and Wersäll's series[23] of 782 patients with a mean follow-up of 11.7 years, the incidence of carcinoma was 2.4% after 10 years and 4% after 20 years. Most other series quote figures ranging from less than 1% to 6%,[24,25] the outstanding exception being a series of 257 cases from San Francisco followed for an average period of 7.2 years in which the incidence of squamous cell carcinoma was 17.5%.[25] It should also be pointed out that some squamous cell carcinomas of the mouth present without any atypia of the adjacent mucosa[5].

Conclusion

The prevalence of leucoplakia is not known, but it seems that during the past two decades it has become less frequent. In about half the leucoplakias a cause cannot be found. The microscopical features of leucoplakia show a spectrum of changes; at the benign end is epithelial keratosis alone, and then epithelial atypia in the premalignant lesion at other end. However, carcinoma in situ is the least common histological finding. Leucoplakia of Smoker's keratosis is reversible in many instances, if the patient gives up smoking. Leucoplakia may persist for life, without any discomfort or change. However, about 5 per cent of all leucoplakias undergo malignant changes There was no satisfactory treatment of leucoplakia and the most important point was long-term follow-up, so as to detect in time the development of an incipient carcinoma

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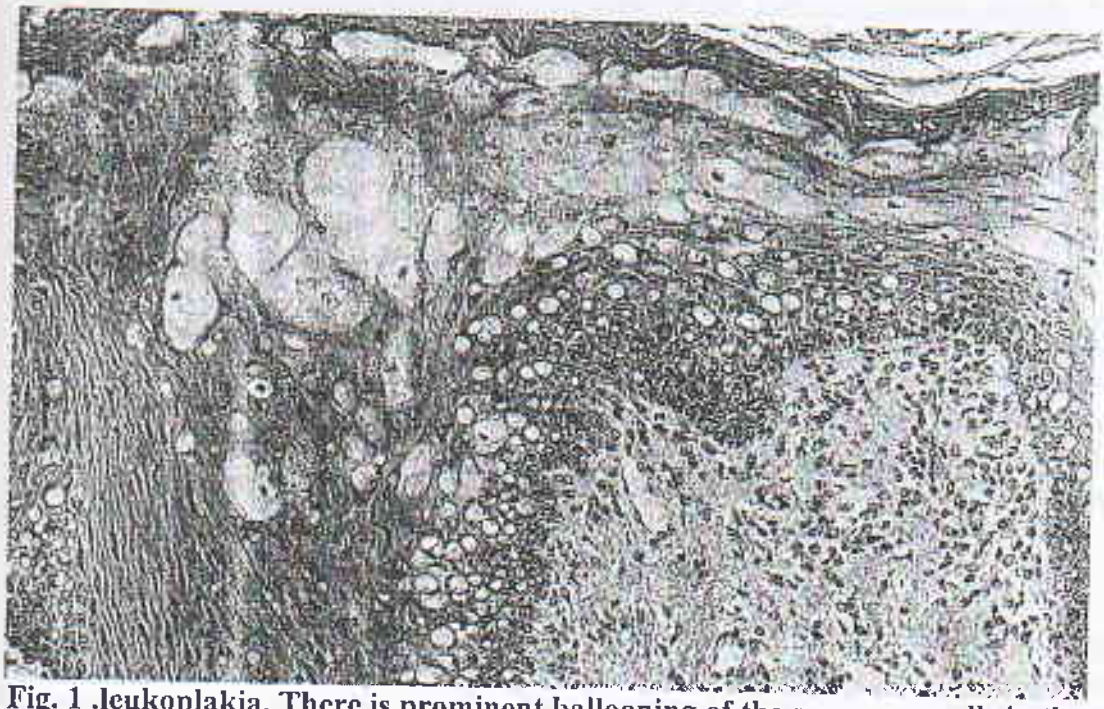

Fig. 1 .leukoplakia. There is prominent ballooning of the squamous cells in the upper half of the epithelium, associated with mild inflammation in the underlying stroma

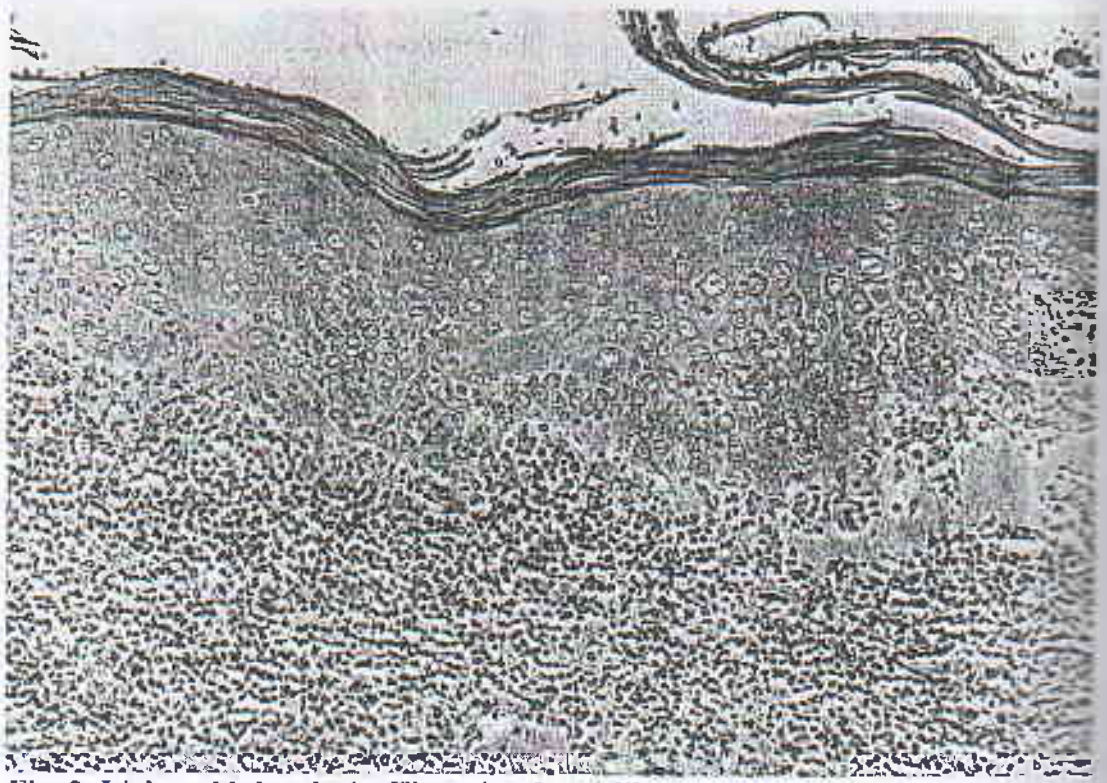

Fig. 2. Lichenoid dysplasia. There is a band-like lymphocytic infiltrate beneath the squamous epithelium, with some infiltration of lymphocytes in the lower third. This lesion is commonly underdiagnosed.

Fig. 3 .Smoker's keratosis of the palate.

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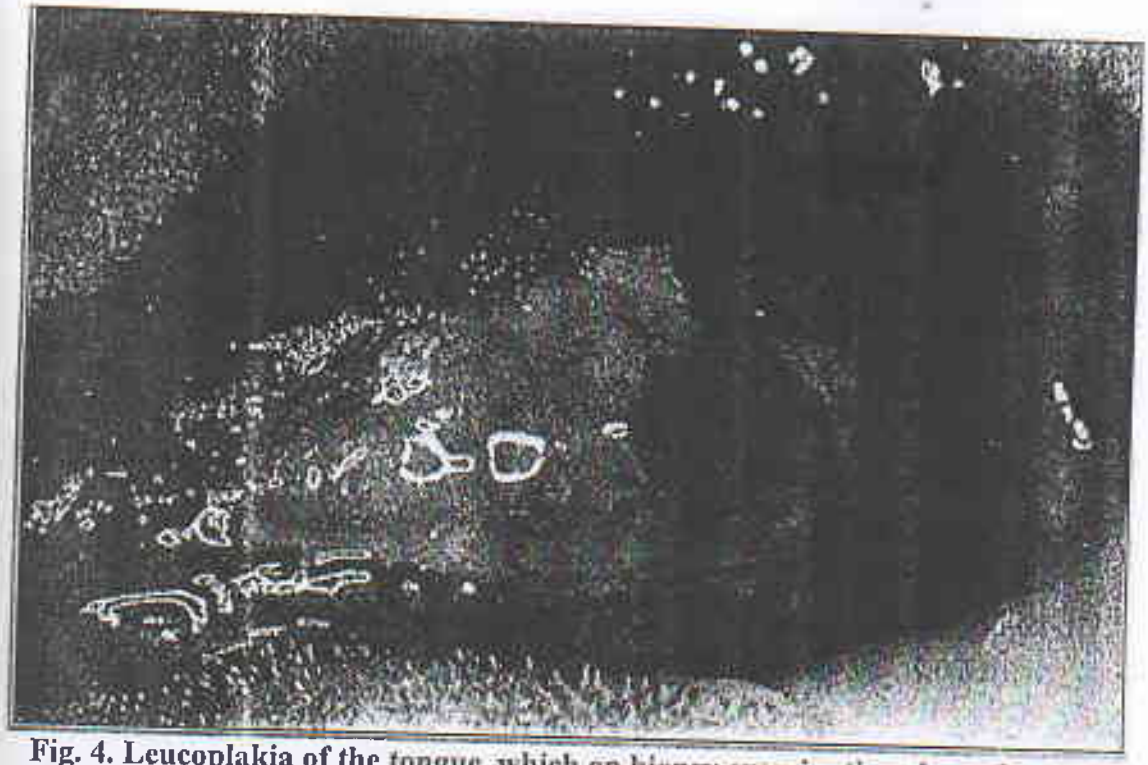

Fig. 4. Leucoplakia of the tongue, which on biopsy examination showed a well differentiated squamous-cell carcinoma.

داء الابيضاض الفموي (الطلوان)، دراسة سريرية مرضية

الخلاصة

داء الابيضاض الفموي(الطلوان) هي عبارة عن بقع بيضاء على الغشاء الطلائي للفم والتي لا يمكن إزالتها عند حكها. خلال الفترة ١٩٩٢-٢٠٠٢ تم دراسة ٢٠٤ حالة لداء الابيضاض الفموي في فرع الإمراض – كلية الطب جامعة بابل. وجدت أسباب عديدة لهذا المرض، ولكن في نصف هذه الحالات لم نتمكن من معرفة السبب. الأسباب التي تم معرفتها شملت: تقران احتكاكي، تقران التدخين،الالتهابات المايكروبايولوجيه. الالتهابات الفطرية مع فرط التنسج، السفلس الثلاثي، التقران الابيضاضي الأولي والموروث.

الصفات المجهريه لداء الابيضاض تمتاز بظهور مجموعة من التغيرات تبدأ بالتقران للنسيج الطلائي يتبعه تفرط نسجي وتغيرات غير طبيعية للنسيج في النهاية ما قبل الخبيثة.سريريا البقع البيضاء تتدرج من نسيج طلائي رقيق متخن قليلا الى بقع صلبة غير منتضمة تتخللها اجزاء طبيعية أو متقرحة. أي جزء من غشاء الفم أو اللثة ممكن إن تصاب ولكن أغشية الخد واللسان أكثر الاماكن إصابتا.

القران التدخيني يظهر توزيع متميز في الحنك العظمي والحفاف على شكل بقع متقرنة مع نقاط حمراء في المركز. يجب اخذ خزع نسجية من جميع الإصابات بداء الابيضاض الفموي عدا القران التدخيني للحنك بسبب إن حتى البقع الصغيرة في بعض الأحيان تبرهن أنها سرطنة مبكرة. كما يجب معرفة درجة أي تغيرات غير طبيعية للغشاء الطلائي وذلك لتأثيره على مستقبل المرض. القران التدخيني يكون عادتا رجعي في مرات عديدة. القران الفطري يجب معالجته بالمضادات ضد الفطريات. داء الابيضاض الفموي الذي يظهر تغيرات بالغشاء الطلائي يجب استئصاله.