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Oral lichen planus. An evolutive clinical and histological study of 45 patients followed up on for five years

J.M. SANCHIS-BIELSA[1], J.V. BAGÁN-SEBASTIÁN[1,2], E. JORDÁ-CUEVAS[3], M.A. MILIAN-MASANET[1], F.J. SILVESTRE-DONAT[1]

Departments of Oral Medicine[1] and Dermatology[3], Valencia University General and Clinic Hospitals[2], Valencia (Spain).

SUMMARY

A study is made of 45 patients clinically and histologically diagnosed of oral lichen planus, and followed up on for 5 years. The course of the disease was monitored after three months and one, two and five years. The patients were classified in terms of lesion evolution (healed, improved, stationary or worse). Two evolutive groups were established for statistical purposes: (a) favorable (healed or improved lesions) and unfavorable cases (stationary or worsened oral lesions); and (b) healed and non-healed cases. Statistical correlations were established between these evolutive groups and different clinical and histological parameters, in an attempt to identify parameters of predictive value in the course of the disease. No statistically significant results were obtained, with the exception of inflammatory infiltrate. Thus, the depth of this infiltrate was found to be greater in patients with an unfavorable evolution (p=0.02) than in those with a favorable course. Likewise, the inflammatory infiltrate was greater in non-healed than in healed cases.

KEY WORDS:

Lichen planus, oral, pathologie, evolution.

RÉSUMÉ

Dans ce travail, nous présentons une série de 45 patients, suivis pendant 5 ans, diagnostiqués cliniquement et histologiquement de lichen plan oral. Des contrôles évolutifs réalisés au bout de 3 mois, un an, deux ans et au bout de cinq ans ont classé les patients en fonction de l'évolution qu'ils présentaient en cas qui avaient guéri de leurs lésions, qui s'étaient améliorés, qui continuaient pareil et finalement ceux qui avaient empiré. Vis-à-vis des statistiques 2 groupes évolutifs se sont faits: 1) cas favorables (les guéris et ceux qui s'étaient améliorés), cas défavorables (ceux qui ne présentaient aucun changement ou ceux qui avaient empiré de leurs lésions intraorales) et 2) cas guéris, cas non-guéris. Diverses corrélations statistiques se sont établies entre ces groupes évolutifs et une série de variables cliniques et histologiques pour trouver un paramètre ayant une valeur de prédiction dans l'évolution de la maladie. Nous n'avons trouvé aucune donnée significativement statistique si l'on excepte une infiltration inflammatoire. Ainsi, nous démontrons une plus grande profondité moyenne de celle-ci dans les cas qui présentent une évolution défavorable (p=0,02) que dans les cas favorables. De la même façon, nous trouvons une plus grande infiltration dans les cas non-guéris que dans les guéris.

MOTS-CLÉS:

Lichen plan, bouche, pathologie, évolution.

INTRODUCTION

Lichen planus (LP) is a disease of unknown etiology that affects the skin, scalp and mucosa. The histology is characteristic, evolution is chronic, and malignant degeneration is possible. The disease affects 0.5-2% of the population (Silverman et al., 1985; Bouquot and Gorlin, 1986; Salem, 1989; Shklar, 1972; Axell et al., 1990; Borghell et al., 1990), and is more common in women (Sklavounou and Laskaris, 1983; Vincent et al., 1990; Bagán et al., 1992) and in the 50-60 age range (Lacy et al., 1983; Irvine et al., 1991). Although little is known of the etiology of LP, there is strong evidence for an underlying autoimmune mechanism (Black, 1972; Matthews et al., 1984; Ragaz and Ackerman, 1982; Giannotti et al., 1983; Toto and Nadimi, 1987; Schiodt et al., 1981). Among the etiopathogenic factors potentially involved in triggering or aggravating pre-existing LP, emphasis is placed on drugs (Dante et al., 1989; Walsh et al., 1990; Firth and Reade, 1990; West et al., 1990; Scully and El-Kom, 1985), psychosomatic factors (Shklar, 1972; Lowental and Pisanti, 1984; Hampf et al., 1987), diabetes (Powell et al., 1974; Halevy and Feuerman, 1979; Lundstrom, 1983) and a number of chronic livers diseases (Rebora and Rongioletti, 1984; Korjic et al., 1984; Del Olmo et al., 1989). Since the first description of LP by Wilson in 1869, many variants of the disease have been reported. In a classical study, Andreasen (1968) described reticular, papular, plaque-form, atrophic, bullous and erosive forms of L.P. This classification was adopted by other authors (Thorn et al., 1988) in an attempt to identify parameters capable of predicting the clinical behaviour of the disease. However, with the aim of simplifying the evolutive study of these patients, other authors (Silverman et al., 1985 y 1991) limited the clinical variants to three: reticular, atrophic and erosive. In accordance with the studies by Bagán et al. (1991), we have centered on two clinical groups: reticular and trophic-erosive.

The aim of the present study was to correlate different clinical and histopathological parameters with the course of LP, in an attempt to establish possible predictive or prognostic factors.

MATERIAL AND METHODS

Forty-five patients were studied in the Medical-Surgical Unit of the Valencia University Faculty of Medicine and Dentistry (Valencia, Spain). All patients were subjected to biopsy, whereby only those cases satisfying classical LP criteria were included: hydropic degeneration of the basal layer cells, subepithelial band infiltration, and presence of lymphoplasmocytic elements.

Patient age, sex, lesion location, symptoms (Grade 1: asymptomatic, Grade 2: nonspecific discomfort, Grade 3: pain), clinical type (Type 1: reticular, Type 2: atrophic-erosive) and lesion spread (Grade 1: single lesion, Grade 2: affecting 2-3 points, Grade 3: affecting more than 3 points in the oral cavity) were studied.

Treatment was structured as follows:

(a) Treatment 1: no treatment. This was applied to patients with small, asymptomatic lesions of limited spread.

(b) Treatment 2: local corticoids (0.1% triamcinolone in orabase). This was applied in patients with more extensive, symptomatic lesions with a degree of atrophy-erosion.

(c) Treatment 3: systemic corticoids for periods of no less than three months. This treatment was applied in patients with painful, extensive lesions with a predominance of ulcerated or erosive presentations.

When technically feasible, biopsies of the jugal mucosa were selected for morphometric study to determine a number of histological parameters: thickness of the horny layer, number of papillae, papilla length, epithelial thickness, and depth of the inflammatory infiltrate. We employed a VIDS III (AMS) semiautomatic image analyzer consisting of a Nikon Optiphot light microscope, a Kestrel 25 video camera, a Summagraphics magnetic tablet and a high-resolution monitor linked to an Olivetti M24 computer.

The patients were grouped according to the course of the disease: (a) Group 1: healed. The patient presents a lesion-free period of at last one year. (b) Group 2: improved. The lesions decrease in size, extension, symptomatology and aggressivity or tendency towards ulceration and erosion. (c) Group 3: stationary. The same or similar lesions persist, involving the same or different location (provided spread is not increased). (d) Group 4: worsened. The lesions increase in number, size or aggressivity.

To facilitate statistical analysis, we established two evolutive groups: (a) favorable (healed or improved lesions) and unfavorable cases (stationary or worsened oral lesions); and (b) healed and non-healed cases. The Chi-square test was performed to establish associations between the qualitative variables.

Significance was considered for $p<0.05$. Finally, the Student t-test was used to investigate differences between the means of two or more groups of quantitative parameters.

RESULTS

Forty-five LP patients (10 males and 35 females; mean age 53 ± 12.63 years) were followed up on for 5 years. Mean age of the patients with favorable and unfavorable evolution was 54.03 ± 13.16 and 52.92 ± 11.67 years, respectively (p=n.s.). There were no significant differences in terms of sex (21.88% and 23.08% males in the favorable and unfavorable evolution groups, respectively; p=n.s.).

Symptomatology was similar in both evolutive groups. In the group with a favorable course, 21.88% of patients were asymptomatic (Grade 1), while 53.12% suffered discomfort (Grade 2) and 25% had pain (Grade 3). In the group with an unfavorable evolution, these figures were 7.69%, 69.39% and 23.08%, respectively (p=n.s.). In relation to the clinical grouping, 18.75% of those patients with a favorable course of the disease were Type 1 (reticular), while the remaining 81.25% were Type 2 (atrophic-erosive). In the group with an unfavorable evolution, these figures were 7.62% and 92.31%, respectively (Chi-square=0.861, p=0.353).

Upon analyzing lesion location, we found that the jugal mucosa was the most frequently involved site in both evolutive groups (87.5% and 92.31%, respectively; p=n.s.). Tongue involvement was greater in those patients with an unfavorable evolution (61.54%) than in the favorable cases (53.12%). However, the gums were more frequently affected in the latter (31.25% versus 7.69%; p=n.s.). Based on the relationship between LP evolution and lesion spread, those patients with an unfavorable course were found to exhibit slightly greater spreads. Thus, among those cases with a favorable evolution, 21.88% exhibited Grade 1 spread, 65.62% were Grade 2, and 12.5% Grade 3. The distribution among those with an unfavorable course was 7.69%, 69.23% and 23.08%, respectively (p=n.s.).

As to treatment applied, the patients with a favorable course received no treatment in 9.38% of cases, while 40.62% and 50% were given local and systemic treatment, respectively. In turn, none of the patients with unfavorable evolution failed to receive medication, while 38.46% and 61.54% were given local and systemic treatment, respectively.

Finally, on establishing correlations between the course of the disease and different histological parameters, no significant differences were observed between the two evolution groups and horny layer thickness, the number and length of the papillae, and epithelial thickness. However, significant differences were encountered with respect to the depth of inflammatory infiltration: those patients with a favorable evolution presented a mean depth of 219.486 μm, versus 362.725 μm among those with an unfavorable course ($t=-2.45$, $p=0.02$).

Globally, the patients were divided into two further evolutive groups, i.e., those who healed (n=18) and those who did not (n=27). On repeating the correlation studies between LP evolution and the above mentioned parameters, the most relevant data were found to involve mean patient age: 58.33 ± 7.96 among the healed patients, versus 50.63 ± 14.27 for those who failed to heal ($t=-2.079$, $p=0.04$). As regards sex, symptomatology, clinical type and treatment, no significant results were obtained. Those patients who healed presented gingival lesions more frequently (38.89% of cases) than those who did not heal (14.81%) (Chi-square=3.38, p=0.06). Likewise, tongue involvement was greater among those who healed (66.96%) than in the non-healed group (44.44%) (p=n.s.).

As in the evolutive groups, those patients who failed to heal presented greater lesion spread than those who healed. Thus, Grade 1 spread was observed in 33.3% of the healed group, versus only 7.41% in the non-healed patients. In turn, only 11.11% of the healed group showed Grade 3 spread, versus 18.52% in the non-healed cases (Chi-square=5.02, p=0.08).

Finally, mean inflammatory depth among the healed patients was 236.984 μm, versus 259.772 μm in the non-healed cases. This supports the observed (albeit non-significant) tendency of poorer evolution as the depth of the inflammatory infiltrate increases.

DISCUSSION

A constant of studies on lichen planus has been the search for a clinical or histological pattern capable of defining the course of the disease. The chronic tendency of LP, its persistence over the years, its evolution in the form of outbreaks, and the fundamental importance of the etiopathogenic factors that may interfere with the clinical course of the disease have made it difficult to establish parameters capable of affording orientation in the management

of these patients. Spontaneous remission of LP varies between 3% and 17% (Thorn et al., 1988; Silverman et al., 1974, 1985 y 1991). However, there has been little mention of the clinical and histological characteristics that define those patients who heal. Moreover, the studies in the literature differ considerably as regards the duration of follow-up. A number of authors (Andreasen, 1968) have observed reticular presentations in up to 40% of those patients who show spontaneous resolution.

However, other workers (Thorn et al., 1988) claim that the reticular and plaque-form presentations are the most persistent. In the present study we observed a 40% remission or healing rate after 5 years, in close relation to the duration of follow-up. Thus, remission was 5% after three months, 7% after one year, and 13.4% after two years. Although most authors consider the ulcerated or erosive presentations to exhibit greater recurrence, we were unable to establish a statistically significant relationship between initial clinical presentation and the remission or cure rate. We agree with Thorn et al. (1988), who claimed that LP evolution is independent of patient sex, medication or initial clinical presentation.

As regards mean patient age, it was found to be greater among those who healed than among those who did not (p=n.s.). In terms of lesion location, the tongue was found to be more frequently involved in those cases exhibiting an unfavorable evolution. This observation could be explained by the special characteristics of the tongue, i.e., its mobility, and vulnerability to friction and to traumatisms caused by the teeth. The lesions are perpetuated as a result, especially when located on the lateral surfaces and base of the tongue. A non-significant relationship was likewise observed between the gingival lesions and LP evolution. Thus, these lesions were more commonly associated with a favorable evolution — probably because treatment in these cases is easier and clinical presentation tends to be of the atrophic variety. We observed no relationship between patient symptomatology and evolution for the better or worse. Likewise, the data regarding lesion spread and treatment protocol were not particularly relevant.

Statistically significant results were obtained as regards the depth of the inflammatory infiltrate. Thus, those patients with a poorer evolution showed the greatest presence of inflammatory cells. This agrees with the autoimmune theory of the disease in reaffirming that the greater the infiltrate, the more important the immune autodestructive process. Thus, the greater or lesser presence of inflammatory infiltrate conditions the course of the disease. In this sense, Bagán et al. (1991) demonstrated that the depth of the inflammatory infiltrate is not related to the clinical presentation of the disease; rather, qualitative variations in the inflammatory presence appear to condition the appearance at one time or another of ulcerated or erosive lesions.

In the present study we have established a number of correlations between different clinical and histological parameters, and the evolution of LP. It may be concluded that the only variable of prognostic value is the depth of the inflammatory infiltrate, as the healing tendency was found to be significantly greater the lesser the inflammatory presence.

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Correspondence address:
J.M. Sanchis Bielsa
Facultad de Medicina y Odontología
Gascó Oliag 1
Valencia 46010 (España).