

Can deram be a cause of oral lichen planus?

Khalil I. Al-Hamdi, MD, PhD.

ABSTRACT

الأهداف: من أجل دراسة العلاقة بين الطفح الجلدي الحزازي الفموي (LP) وعادة مضغ الديرام.

الطريقة: أجريت دراسة سريرية مبنية على المراقبة اشتملت على 176 امرأة اعتدن على مضغ الديرام و200 امرأة لم تستعملن الديرام أبداً في حياتهن، وقد استشرن قسم الجلدية بمستشفى البصرة التعليمي والعيادة الخاصة - البصرة - العراق، خلال الفترة ما بين فبراير 2005م وحتى يوليو 2007م.

النتائج: أظهرت الدراسة أن نسبة حدوث الطفح الجلدي الحزازي الفموي (LP) تكثر بين النساء اللواتي يمضغن الديرام وعددهن 176 امرأة (23.3%)، بالمقارنة مع 200 امرأة لم يستعملن الديرام أبداً (1.5%)، خاصة بين أولئك اللواتي لديهن تكرار المضغ بنسبة (51.2%) واللواتي يمضغن منذ مدة طويلة بنسبة (65.8%). كانت الآفات الفموية الأكثرلا أعراضية (80.5%) وسيادة نمط التشبيك (87.9%). حفز تجنب مضغ الديرام تحسين كامل أو ملحوظ للآفات الفموية لدى (56.3%) من الحالات، حتى وبدون معالجة خلال ثلاثة أشهر من المتابعة. أظهر فحص الأمراض وجود ملامح مشابهة للطفح الجلدي الحزازي (LP) الكلاسيكي.

خاتمة: يجب أخذ مضغ الديرام بعين الاعتبار كسبب محتمل للإصابة بالطفح الجلدي الحزازي الفموي (LP) خاصة بين اللواتي يمضغن لفترة طويلة ومتكررة.

Objectives: To study the relationship between oral lichen planus (LP) and the habit of chewing deram.

Methods: A clinically based controlled observational study including a total of 176 women who used to chew deram and 200 women who never used deram, who consulted the Dermatology Department of Basrah Teaching Hospital, and a private clinic, Barsah, Iraq during the period from February 2005 to July 2007.

Results: The study showed that the incidence of oral LP is greater among 176 deram chewers (23.3%) in comparison with 200 women who never use deram (1.5%), particularly among those with frequent (51.2%) and prolonged (65.8%) chewing of deram. Oral lesions, were mostly asymptomatic (80.5%) and predominantly of reticulate pattern (87.9%). Avoidance of deram chewing induced marked or complete improvement of the oral lesions in 56.3% of cases even without treatment within a 3 month follow up period. Pathological examination showed features similar to classical LP.

Conclusion: Deram chewing should be considered as a possible cause of oral LP, particularly among frequent and prolonged chewers.

Saudi Med J 2008; Vol. 29 (7): 1028-1030

From the Department of Dermatology, Basrah Medical College Basrah, Iraq.

Received 11th December 2007. Accepted 2nd June 2008.

Address correspondence and reprint request to: Dr. Khalil I. Al-Hamdi, Assistant Professor, Consultant Dermatologist, Basrah Medical College, Basrah, Iraq. Tel. +964 7801405354. Fax. +964 40619375. E-mail: khalil_hamdi2003@yahoo.com

Lichen planus (LP) is a worldwide disease affecting approximately 1.2% of the population. Mucous membrane lesions are very common occurring in 30-70% of cases. Lichen planus may be confined to the oral cavity only, however, 15% of the patients with oral LP will also have skin lesions.¹ Women represent 75% of patients with oral LP. Oral lesions may be reticulate, leucoplakia like, erosive, and others. Buccal mucosa is involved in 90% of the cases followed by the gingiva and lips.² Deram, juglans, or walnut is a herbal remedy that is used widely by women in the southern part of Iraq and gulf countries for cosmetic purposes, where women chew deram to stains the lips and oral cavity with an attractive and beautiful red or dark brown color,³ in addition to making the teeth characteristically white. The frequency of chewing deram by women is variable. Chewing of deram causes, at first, a burning

sensation that decreases gradually as deram is thrown out of the mouth. Biochemically, juglans contains juglone, a naphthoquinone, which has irritant properties.⁴ Extract of black walnut was used to dye the hair, skin, and clothing.⁵⁻⁷ Ingestion of English walnut has been correlated with recurrent oral ulceration,⁸ particularly among patients with Behçet's disease. This study was designed to investigate the possible relationship between chewing deram and oral LP among Iraqi women.

Methods. A clinically based controlled observational study including a total of 176 women who used to chew deram, and 200 women who never used deram, who were consulting the Dermatology Department of Basrah Teaching Hospital and a private clinic, Barsah, Iraq during the period from February 2005 to July 2007. A detailed history was taken from both groups. Women of the first group were asked about the onset, duration, and the frequency of chewing deram, in addition to the onset and duration of oral lesions if any. Both groups were examined for any oral lesions, its type, and the sites of these lesions. Patients with cutaneous LP and those on drugs that possibly cause lichenoid eruption or a history of previous amalgam filling were excluded from the study. Biopsy was taken from 7 patients with oral lesions that were subjected for histopathological examination. The consent of all patients was taken prior to their inclusion in this study, and the permission of the ethical committee to conduct the study was also obtained. The difference between the 2 groups was tested by unpaired t test and χ^2 depending on the nature of variables. Data were analyzed on computerized program: Statistical Package for Social Science (SPSS version 11). Unpaired t-test and χ^2 were used and a difference was considered significant if the $p < 0.05$

Results. A total of 176 deram chewing women were enrolled in this study. Their age ranged between 17-56 years with a mean age of 32.7 years. Those women were age and gender cross-matched with 200 women who had never used deram. Women of the first group used to chew deram for a period ranging between a few months to 29 years. Examination of deram chewing women revealed that 41 out of 176 women were found to have oral LP like lesions (23.3%) in contrast to the control group where oral LP was detected only in 3 (1.5%) of them. The difference in incidence is statistically significant ($p < 0.0000001$). Deram chewers were 27 times more liable to have oral LP than those of the second group. The oral LP like lesions among the deram chewing women were asymptomatic in 33 (80.5%) of the cases, while others complained of mild-moderate burning sensation or pain particularly on eating. As it is shown in Table 1, most LP like lesions

Table 1 - Showing the types of oral lesions.

Types of oral lesions	n (%)
Reticulate	36 (87.9)
Leucoplakia	3 (7.3)
Atrophic	1 (2.4)
Ulcerative and reticulate	1 (2.4)
Total	41 (100)

Table 2 - Showing the sites of oral lesions.

Sites	n (%)
Buccal mucosa	39 (95.2)
Tongue	1 (2.4)
Near the uvula	1 (2.4)
Total	41 (100)

Table 3 - Showing the distribution of oral lesions according to the duration of deram chewing.

Period	n (%)
< 1 year	0 (0)
1-5	6 (14.6)
5-10	8 (19.5)
11-20	14 (34.1)
>20	13 (31.8)
Total	41 (100)

Table 4 - Showing the distribution of oral lesions according to the frequency of deram chewing.

Frequency	n (%)
Daily	21 (51.2)
Average 3 times/wk	13 (31.7)
Average 3 times/ a month	5 (12.2)
Occasionally	2 (4.9)
Total	41 (100)

were of a reticulate pattern, and the buccal mucosa was the most common site affected (Table 2). The duration of chewing deram was variable, however, most oral LP like lesions were seen among those who were used to chew deram for a period ranged between 11-20 years or more (Table 3). Table 4 showed that oral LP like lesions were greater among those who used to chew deram daily followed by those with an average chewing of deram of 3 times per week. The lesions were bilateral in 27 (65.8%) of the patients, but it was mostly asymmetrical.

Sixteen women with oral LP like lesions agreed to stop deram chewing. Follow up for 3 months revealed that 9 (56.3%) of those women showed marked or complete resolution of their lesions even without treatment, while in the remaining 7 (43.7%) women, only mild to moderate response was achieved by treatment as topical and intralesional steroid within the same period of follow up. Lastly, histopathological examination of the 7 biopsies taken from the oral lesions showed features simulating that of classical oral LP like focal hypergranuloses, liquefaction degeneration of basal cell layer, and prominent band like lymphocytic infiltrates.

Discussion. During daily clinical practice in the southern part of Iraq, one comes across an increasing number of women with oral LP like lesions that are mostly resistant to treatment, with evidence of chewing deram. The study showed that the mean age of women with oral LP like lesion was 32.7 years, which is younger than reported in the literature, where the incidence of LP among women is said to increase with increasing age, reaching a peak in the 60s.² The incidence of oral LP like lesions was higher among deram chewers than those who never used deram. The statistically highly significant difference ($p < 0.0000001$) in the incidence of these lesions among deram chewers, particularly among a relatively younger age group is probably attributed to the irritating effect of deram, which may also exert another direct effect on the mucous membrane inducing lichenoid changes similar to that found among tobacco chewers, where the incidence of lichenoid oral lesion was also high.¹ However, the incidence of oral LP like lesions was found to be increased with longer duration and more frequent chewing of deram. This result is acceptable as prolonged and frequent chewing of deram exposes the oral cavity more to the irritating effect of deram, inducing more lichenoid eruptions.

The study also showed that the oral lesions in most cases were asymptomatic, which is similar to that mentioned in literature where 77% of the oral lesions

was also asymptomatic.² Similarly, most lesions were of a reticulate pattern. The same finding was reported by other studies.^{1,2} Furthermore, it was found that avoidance of deram chewing for 3 months achieved a marked or complete resolution of the oral lesions in 56.3% of the cases, even without treatment. This indicates clearly that chewing of deram play a role in the pathogenesis of these oral lesions, which are usually resistant to treatment.^{1,2} The similarity of the histopathological features of the 7 biopsies taken from the oral lesions to typical oral LP highlighted clearly that chewing of deram induced a true oral LP rather than lichenoid eruptions or a mere association between the 2 conditions.

In conclusion, the increased incidence of LP like lesions among the deram chewers, affection of a relatively younger age group, and the similarity of clinical features to classical oral LP, proven by histopathological examination, indicates that deram chewing should be considered as a possible cause of oral LP.

References

1. Burns T, Stephen B, Neil C, Christopher G. Rook Text book of Dermatology. In: Burns T, Stephen B, Neil C, Christopher G. 7th edition Oxford: Blackwell Science; 2004. p. 422-428.
2. James WD, Berger TG, Elston D. Andrew's Diseases of the Skin. In: James WD, Berger TG, Elston D. Clinical Dermatology. 10th ed Philadelphia (PA): WB Sanders; 2005. p. 217-222.
3. Merzouki A, Ed-drefouri F, Molero Meso J. Contribution to the knowledge of Rifan traditional medicine. 11: Folk medicine in Ksar lakbir district [NW Morocco]. *Fitoerapia* 2000; 71: 278-307.
4. Auyone TK, Deboer B, Oberprillor JO. Effect of intradermal injection of juglone in guinea pig. *Arch Int Pharmacodyn* 1968; 135: 189.
5. Hocking GA. Dictionary of natural products. Medford, (NJ): Plexus Publishing Inc; 1997. p. 409.
6. D'Amelio F. Botanicals: A phytocosmetic Desk Reference. Boca Raton (FL): CRC Press; 1999. p. 209.
7. Rosengarten F. The book of edible nuts. New York (NY): Walker and Company; 1984. p. 239-262.
8. Lisse JR, Oberto-Medina M. Behcet's disease. New York (NY): emedicine from WebMD; 1996-2008; cited 2006. Available from: URL: <http://www.emedicine.com/med/topics218.htm>