Clinical observation of recurrent aphthous stomatitis in Sulaimania

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ABSTRACT

Background: Recurrent aphthous stomatitis is the most common recurring oral ulcerative condition in many parts of the world, characterized by painful oral ulcerations recurring with varying frequency the aim of this Study: To: record the distribution of aphthous ulcers in Sulaimani, find the clinical features and effect of local factors and medical disorder on occurrence of aphthous ulceration.

Patients and Methods: This prospective study was performed on 80 patients and seen in period from January 2008 to August 2008. Complete medical history and full history of present illness was obtained, physical examination and laboratory investigations were carried out to assess patients condition.

Results: In this study 80 patients were examined, 53 of them 66.25 % were females, 27 patients 33.75 % were males. 56 patients (70 %) had minor aphthous ulceration, 22 patients (27.5 %) had major aphthous ulceration, and 2 patients (2.5 %) had herpetiform ulceration. In our sample the most common etiological factor of RAU was stress and anxiety which constitute (45 %) followed by hematological deficiency and hormonal causes in which each of them constitute (16.25 %), Behcet's disease (12.5 %), gastrointestinal diseases (10 %).

Conclusions: From this study the researcher concludes that: Recurrent aphthous ulcer is more common in females than males. Minor aphthous ulceration is more common than major aphthous ulceration and herpetiform ulcer is a very rare form of aphthous ulceration and is also seen in older age group. Minor aphthous ulcers occur only in non-keratinized mucosa the most common site is lower lip, but major and herpetiform ulcers occur anywhere in oral cavity including keratinized and non-keratinized mucosa.

Key words: RAU, clinical presentation.

INTRODUCTION

Recurrent aphthous stomatitis is an ulcerative condition that affects the oral mucosa without evidence of an underlying medical disorder, or may be associated with other systemic diseases (1,2). Recurrent aphthous ulceration is characterized by the appearance of round, shallow ulceration surrounded by inflammation. (3,4).

Emotional and physical stress have been implicated in the pathogenesis, certain foods, including coffee, potatoes, cheese, nuts, and gluten-containing foods have also been implicated. (5). Deficiencies in iron, folate, and vitamin B12 have been noted in relation to these ulcers. (1,6).

Recurrent aphthous stomatitis has been noted in patients with systemic diseases such as inflammatory bowel disease, Crohn's disease, HIV. (1,7). Behcet's disease is another systemic disease in which recurrent aphthous ulcers are the most frequent manifestation ulcers are found in 95-100 % of the patients. (8,9).

The condition ranges in severity from minor recurrent aphthous stomatitis; it is characterized by self-limited ulcerations, to a very debilitating form, and is called major recurrent aphthous stomatitis. A third and much less common form of the condition is herpetiform aphthous ulceration. (1)

The present study was designed to: 1-Record the distribution of recurrent aphthous ulceration in Sulaimani.2-Find out the clinical presentation and etiology of aphthous ulceration.

PATIENTS AND METHODS

This prospective study was performed on 80 patients and lasted for eight months period from January to August 2008. The patients were collected from Oral medicine Department (College of Dentistry/University of Sulaimani), Dermatology Department of Consultant Clinic, Maxillofacial Department of Teaching Hospital, Dermatology Department of Ali kamal Health Center, and Piramerd Dental Community.

Patients' age ranged between (10-60) years, (53 females and 27 males).A complete medical history including serious injuries or illness, history of previous hospitalization, pregnancies, allergy to food or drugs, present medication, also patients were asked about alcohol, smoking, history of systemic diseases was obtained from each patient to ensure that if the ulcers were a manifestation of other systemic disorder, or it is the only complaint of the patient.

Full history of present illness including time of onset of ulceration, recurrence, factors related to recurrence, presence or absence of similar ulcer in the body, relieving and precipitating factors was also obtained.

The diagnosis was supported by the clinical findings, duration of lesions, symptoms and

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presence or absence of systemic diseases and also presence or absence of similar lesions in other parts of the body. Laboratory investigations were carried out included Hematological examinations: CBC, Hb g/dl, PCV %, W.B.C (differential count), Serum iron level and total iron binding capacity (T.I.B.C). Pathergy Test was done for those patients that had ulcers with frequent recurrence and increased severity, to confirm or exclude Behcet's disease, or possibility of developing this syndrome. This test was included subcutaneous pricking in the forearm, and waiting until 24 hours, after 24 hours patients with behcet's syndrome mostly develop pustules.

**RESULTS**

Table 1 shows that the majority of patients (26.25 %) were in 31-40 years, only 9 patients (11.25 %) were below 20 years. Tables 2 and 3 show that majority of patients had minor aphthous ulceration which constituted 70 % and minority of patients had herpetiform ulceration which constituted 2.5 %., minor aphthous ulceration were found in all age groups, while major aphthous ulcer and herpetiform ulceration were not seen in 10-20 years age group.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Minor ulcer</th>
<th>Major ulcer</th>
<th>Herpetiform</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>41</td>
<td>12</td>
<td>53</td>
<td>(66.25 %)</td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>10</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>22</td>
<td>2</td>
<td>80</td>
</tr>
</tbody>
</table>

The majority of the minor aphthous ulcers 24.8 % were seen in the lower lip (figure 1), followed by the tip of tongue and lateral side of tongue (23.52 %, 21.13 %) respectively as shown in figure (2), followed by buccal mucosa and upper lip 11.8 %, 10.5 % respectively figure (3). Minority of them (3.5%) were located in mucobuccal fold areas. In the 80 patients examined in this study, 22 patients 27.5 % had major aphthous ulceration. In all of them the total number of major ulcers was 34 ulcers. Every site of the oral cavity might be involved, including non-keratinized and keratinized mucosa of dorsum of tongue and palate (Figure 4), but the lower lip 26.5 % seemed to represent the most common site of involvement (figure 5), followed by lateral side and dorsal surface of tongue (23.5 %, 20.6 %) respectively (figure 6).

Minority of major aphthous ulcers were seen in the tip of tongue, upper lip, and floor of mouth in which each of them constitute 2.9%. Figure 7 shows major aphthous ulcer on the upper lip.

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Minor ulcer</th>
<th>Major ulcer</th>
<th>Herpetiform</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10-20)</td>
<td>9</td>
<td>8</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>(21-30)</td>
<td>7</td>
<td>8</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>(31-40)</td>
<td>16</td>
<td>5</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>(41-50)</td>
<td>14</td>
<td>3</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>(51-60)</td>
<td>10</td>
<td>6</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>22</td>
<td>2</td>
<td>80</td>
</tr>
</tbody>
</table>
Figure 1: 32 years old male, with 4 minor aphthous ulcers in the lower lip

Figure 2: 27 years old female, had minor aphthous ulcer on lateral side of tongue

Figure 3: 17-years old male with minor aphthous ulcer on the upper lip

Figure 4: 42-years old female with major aphthous ulcer on the palate

Figure 5: 25-years old female with major aphthous ulcer on the lower lip

Figure 6: 32 years old female, had major aphthous ulcer on lateral side of tongue

Figure 7: 25 years old female with major aphthous ulcer on the upper lip

Figure 8: 56-years old male had herpetiform ulcer on the dorsal surface of tongue.

In all 80 patients that were examined, only 2 patients had herpetiform ulceration, the total number of herpetiform ulcers were 4 ulcers. The herpetiform ulcers were only found in males, and distribution of herpetiform ulcers were seen in involved sites equally. Herpetiform ulcers might be found anywhere in the oral cavity including keratinized and non-keratinized mucosa figure (8).

Possible etiological factors of RAUs according to age and gender:
According to etiology, 36 patients 45 % had RAU due to stress and otherwise healthy systemically, 13 patients 16.25 % had RAU due to hematological deficiency (iron deficiency anemia), 13 cases of female patients 16.25 % had RAU due to hormonal changes during menstrual cycle, 10 cases 12.5 % had RAU as a
manifestation of Behcet's disease, 8 cases 10 % had RAU as a manifestation of gastrointestinal problem (gastric ulcer & chron's disease) as seen in tables (4 and 5).

Patients with positive pathergy test:
Among the 70 patients with recurrent aphthous ulceration, Pathergy test for early diagnosis of future development of Behcet's disease was done for 10 patients 14.3 % that were have RAU for long time and (3-4) episodes of ulceration within 12 months period. Only 4 of them 40 % had positive pathergy test, 3 females and 1 male as seen in table 6.

Table 4: Distribution of recurrent aphthous ulcers in all 80 patients according to etiology and gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Behcet's Disease</th>
<th>Stress</th>
<th>Hematological</th>
<th>G.I.T</th>
<th>Hormonal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>3</td>
<td>20</td>
<td>11</td>
<td>6</td>
<td>13</td>
<td>53 (66.25%)</td>
</tr>
<tr>
<td>Male</td>
<td>7</td>
<td>16</td>
<td>2</td>
<td>2</td>
<td></td>
<td>27 (33.75%)</td>
</tr>
<tr>
<td>Total</td>
<td>10 (12.5%)</td>
<td>36 (45%)</td>
<td>13 (16.25%)</td>
<td>8 (10%)</td>
<td>13 (16.25%)</td>
<td>80 (100%)</td>
</tr>
</tbody>
</table>

Table 5: Distribution of recurrent aphthous ulcers in all 80 patients according to etiology and age

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Stress</th>
<th>Hematological</th>
<th>G.I.T</th>
<th>Behcet’s disease</th>
<th>Hormonal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10-20)</td>
<td>4</td>
<td>1</td>
<td></td>
<td>4</td>
<td></td>
<td>9 (11.25%)</td>
</tr>
<tr>
<td>(21-30)</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>16 (20%)</td>
</tr>
<tr>
<td>(31-40)</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>21 (26.25%)</td>
</tr>
<tr>
<td>(41-50)</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td></td>
<td>17 (21.25%)</td>
</tr>
<tr>
<td>(51-60)</td>
<td>10</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td></td>
<td>17 (21.25%)</td>
</tr>
<tr>
<td>Total</td>
<td>36 (45%)</td>
<td>13 (16.25%)</td>
<td>8 (10%)</td>
<td>10 (12.5%)</td>
<td>13 (16.25%)</td>
<td>80 (100%)</td>
</tr>
</tbody>
</table>

Table 6: Distribution of patients with positive pathergy test

<table>
<thead>
<tr>
<th>Gender (10-20) years</th>
<th>(21-30) years</th>
<th>(31-40) years</th>
<th>(41-50) years</th>
<th>(51-60) years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>1</td>
<td>1</td>
<td>3 (75 %)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td>1 (25 %)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4 (100 %)</td>
</tr>
</tbody>
</table>

DISCUSSION
In this study eighty patients were examined, 53 patients 66.25 % were females and 27 patients 33.75 % were males. The most affected age group 26.25 % was between age 31-40 years, and only 9 patients were below 20 years 12.8 %, this is compatible with other studies that were done in London, and USA in which recurrent aphthous ulcers were more common among females (1,3,10). This study is also compatible with other studies which were done in London and Middle East Countries in which recurrent aphthous ulcers started in childhood and seen in all ages especially adults. (1,10,11).

Among 80 patients that were examined, 56 patients 70 % had minor aphthous ulceration, 22 patients 27.5 % had major aphthous ulceration, and 2 patient 2.5 % had herpetiform ulceration. This is compatible with studies which were done in America, Turkey, and Middle East Countries which stated that minor aphthous ulceration is the most common type of RAS, major aphthous ulceration is less common than minor aphthous ulcer, herpetiform ulceration is a rare form of RAS and mostly occurs in men. (1,3,12), but incompatible with other studies that were done in other countries which stated that herpetiform ulcers mainly found in females. (3,13).

The present study showed that age group 10-20 years contains 9 patients all of them 100 % had minor aphthous ulceration, and no major and herpetiform ulcers were found in this age group, this study is compatible with other studies that
were made in Israel, Turkey and Iran in which minor aphthous ulcers mostly occur in childhood, adolescence and young adults, major aphthous ulcers may begin soon puberty, and herpetiform ulcer is appear in late stage of age. (11,13).

In eighty patients with RAU examined, fifty six patients 70% had minor ulceration, the total number of all minor ulcers were 85 ulcers.

The majority of the minor aphthous ulcers were seen in the lower lip which contained 21 ulcers which constituted 24.8% followed by tip of tongue which contained 20 ulcers which constituted 23.52%, followed by 18 ulcers 21.18% were seen in the lateral border of tongue, 10 ulcers 11.8% were seen in the buccal mucosa, 9 ulcers 10.5% were seen in the upper lip, 4 ulcers 4.7% were seen in the lower lip, 1 ulcer 2.9% was located in the ventral surface of tongue, 3 ulcers 3.5% were located in the mucobuccal fold area. This is in agreement with other studies which were done previously in Middle East Countries, and USA which stated that minor aphthous ulcers were found in non-keratinized mobile mucosa of the oral cavity. (1,3,12,14).

In the present study, eighty patients with recurrent aphthous ulceration were examined, in the eighty patients 22 patients (27.5%) had major aphthous ulceration, and the total number of major aphthous ulcers was 34 ulcers. The most common site of major aphthous ulcer was lower lip which contained 9 ulcers which constituted 26.5%, followed by 8 ulcers which constituted 23.5% were seen in the lateral border of tongue, 7 ulcers which constituted 20.6% were seen in the dorsal surface of tongue, ulcers in the buccal mucosa were 5 ulcers which constituted 14.8%, 2 ulcers which constituted 5.9% were seen in palate, 1 ulcer which constituted 2.9% was found in the upper lip, 1 ulcer 2.9% was located in the floor of mouth, 1 ulcer was seen in the tip of tongue which constituted 2.9%. This is in agreement with other studies that were done in Middle East Countries, and USA in which the major aphthous ulcers are found in any area of the oral cavity including the non-keratinized and keratinized area of the dorsal surface of tongue and palate in males and females without difference. (1,3,13).

From eighty patients with recurrent aphthous ulceration, two patient had herpetiform ulceration, he had four ulcers: one ulcer which constituted 25% in the mucobuccal fold area, one ulcer which constituted 25% was seen on the lower lip, one ulcer which constituted 25% was seen on the lateral surface of tongue, and one ulcer which constituted 25% were seen in the dorsal surface of tongue. This is compatible with other studies that were done previously in Iran, Kuwait, and USA in which herpetiform ulceration was the rare one and found in keratinized and non-keratinized mucosa in the oral cavity. (1,3,13).

According to etiology they were classified in to five groups. First group contains 36 patients constituted 45% their oral ulceration was associated with stress, those patients mentioned that during stress and anxiety their oral ulceration became worse. This is compatible with other studies that were done in USA, Turkey and Iran in which stress and anxiety were the most common etiology of RAS. (1,11,15).

Second group contains 13 patients 16.24%, after laboratory investigation the researcher found that they had hematological deficiencies (iron deficiency, low PCV count and low hemoglobin count), because one of the manifestation of iron deficiency anemia include recurrent oral ulceration. This is in agreement with studies that were done in Middle East Countries in which nearly 20% of patients with RAS had hematinc deficiency.

Third group contains 13 female patients 16.24% in whom the aphthous ulceration is associated with different stages of menstrual cycle due to hormonal changes during stages of menstrual cycle, and cessation of ulceration occur during pregnancy. (1,10,11,13).

Forth group contains 10 patients 1.25% with Behcet's disease, because one of the manifestations of Behcet's disease is recurrent oral aphthous ulceration, and all of the three types (minor, major, and herpetiform) ulceration are found. This is compatible with other studies that were done in North America and Turkey in which Behcet’s disease is one of the systemic diseases that will cause recurrent aphthous ulceration. (8,9,18,19).

Fifth group contains 8 patients constituted 10% with gastrointestinal diseases (celiac disease, crohn's disease, and peptic ulcers). Five patients of them had celiac disease, two patients of them had peptic ulcer, and one patient of them had crohn's disease. Patients with peptic ulcers have aphthous ulceration, because of histological similarities between peptic ulcers and RAS and the identified role of helicobacter pylori in peptic ulcer, the possibility of bacterial involvement in the progression of apthae has been suggested. This is compatible with other studies that were done in London, USA, and Turkey in which one cause of RAS is gastrointestinal disorders. (12,20,21).

In this study ten patients from seventy patients with recurrent aphthous ulceration who had 3-5 or more episodes of RAS in 12 months duration and ulcers were very sever and painful with suspected Behcet's disease, pathergy test
were done for them, 4 patients 40% of them had positive pathergy test. This is compatible with other studies in that were done in Turkey, Iran, Jordanian, Iraq which stated that patients that had three or more episodes of oral ulceration in a year duration may have positive pathergy test, at same time patients with no Behcet's disease may have negative result of pathergy test, or normal individuals may have false positive pathergy test, so for diagnosis of Behcet's disease (8,9).

REFERENCES