SHORT COMMUNICATION

Venous Lakes of the Lips: Prevalence and Associated Factors

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Venous lakes of the lips (VLL) is a common vascular lesion caused by a focal dilatation of venules, characterized clinically by soft, compressible, dark-blue to violaceous papules, which occurs most often on the lips of elderly patients. A single layer of flattened endothelial cells and a thick wall of fibrous tissue are observed upon histological examination (1). VLL persists throughout life. The clinical course of VLL is uncomplicated, apart from occasional associated haemorrhagic and cosmetic problems. Most reports have focused on surgical treatment (2–6), and there are no large published studies on the prevalence of VLL and possible associated factors. The aim of this report is to determine the prevalence of VLL in a general dermatological population and the possible presence of associated factors or risk factors.

MATERIALS AND METHODS

All adult patients (>18 years of age) affected by VLL who were examined in the specialized outpatient clinic of our dermatology department from September 2011 to June 2012 were included in the study. Data were collected on age and sex, site and number of VLL. Clinical data included: skin type (according to Fitzpatrick classification), past and present sun-exposure (classified as: outdoor workers; patients having lived in sunny countries for >6 months; patients seeking suntan; occasional sun-exposed activities; patients having always avoided sun-exposure), the presence of >20 seborrhoeic keratoses, actinic keratoses, angiomas, common or atypical naevi, past sunburns at a juvenile or adult age, relevant diseases, past or present known tumours, concomitant therapies, immunosuppressive therapies, or organ grafts. Prevalence was calculated as the percentage of patients with VLL out of all patients observed in the same period at the same outpatient clinic. In order to compare the studied parameters, a case-control study with sex- and age-matched patients without VLL was performed. Control cases were patients admitted to the same outpatient clinic for general dermatological consultation. The patients affected by VLL were referred to our department for general dermatological problems, not for VLL. Student’s test was used to compare differences in prevalence of VLL between age groups. χ² test was used to compare differences in prevalence of VLL between sex groups. A threshold of VLL between age groups. χ² test was used to compare differences in prevalence of VLL between sex groups.

RESULTS

A total of 1,408 patients were recorded. Of these, 52 (31 men, 21 women, sex ratio M:F = 1.48:1) presented VLL; a prevalence of 3.7%. The mean age of the general study population including VLL patients was 52.6 years, the mean age of patients with VLL was 76.7 years, of controls 75.8 years (p < 0.03). VLL of the lower lips was observed 46 times, VLL of the upper lip 3 times, and 3 patients had VLL on both the lower and upper lips. Patients and controls did not significantly differ for skin type; but were slightly skewed; type II: 29/17, type III: 23/31, and type IV: 0/4. More than 5 angiomas was observed in 30 patients with VLL. No patients had undergone organ graft or immunosuppressant therapy. Common and/or atypical naevi (n > 20) were observed in 16 patients with VLL and in 19 controls. Past sunburns at a juvenile or adult age were reported in 30 patients and 14 controls. A significantly higher presence of actinic keratosis was observed in patients (p < 0.05). Table I shows the relevant parameters and the significant differences between patients with VLL and sex- and age-matched controls.

DISCUSSION

There are only a few clinical reports on VLL, most of which are studies of therapeutic treatment. The lack of literature may be due to confusion and/or lack of agreement about the definition of VLL. VLL were first described under this name by Bean & Walsh in 1956 (8) as dark-blue soft, compressible papules 2–10 mm or more in diameter, most often localized on the ears, face, lips (15%) and neck in elderly men (mean age 65 years). The authors described a histological picture of a thin, usually single-cell, layer of the venular endothelial lining and a marked senile elastosis in the surrounding tissue (8). Furthermore, ultra-structural studies (1) confirmed the presence of vascular spaces lined with normal endothelial cells, with open junctions, no fenestration (differently from senile angioma). No muscular layer was found. Ir-

Table I. Parameters considered among patients with venous lake of the lips and sex and age-matched controls

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Patients</th>
<th>Controls</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seborrhoeic keratoses (&gt;20)</td>
<td>17</td>
<td>16</td>
<td>n.s.</td>
</tr>
<tr>
<td>Actinic keratoses (&gt;10)</td>
<td>37</td>
<td>18</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>Angiomas (&gt;5)</td>
<td>30</td>
<td>17</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sunburns</td>
<td>30</td>
<td>14</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>Outdoors activities</td>
<td>14</td>
<td>7</td>
<td>n.s.</td>
</tr>
<tr>
<td>Tumours</td>
<td>8</td>
<td>2</td>
<td>n.s.</td>
</tr>
<tr>
<td>Naevi (&gt;20)</td>
<td>16</td>
<td>19</td>
<td>n.s.</td>
</tr>
<tr>
<td>Age, years, (mean ± SD)</td>
<td>76.7 ± 13.95</td>
<td>75.8 ± 13.98</td>
<td>n.s.</td>
</tr>
<tr>
<td>Sex ratio (M:F)</td>
<td>1:48:1</td>
<td>1:48:1</td>
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regular bundles of collagen and elastic fibres impinged on
the vessel walls. French literature uses the term “flaques
sanguines”, describing them as venous lakes or varicose
dilatations located in particular on the ears or face (9).
Bean & Walsh (8) attributed the lesions to sun exposure
and ageing. Smoking is thought to play a role in lip locali-
zation, but the pathogenesis remains unknown. This study
represent the most relevant numerical casistic reported
about VLL and indicate a prevalence of 3.7% for outpa-
tients observed in a dermatology clinic. This percentage
only indicates a prevalence and probably does not reflect
the real incidence in the adult population. The mean age
of the patients affected by VLL in our study was signifi-
cantly higher than the mean age of the observed general
population. Our results show a significant prevalence of
actinic keratosis in VLL patients. Sunburns at juvenile
ages are equally more often observed in patients with
VLL. These two data may indicate a role for sun exposure
in the pathogenesis of VLL. Although not significantly
different, we have observed that patients with VLL had a
slight prevalence of fair skin type than controls. The same
slight prevalence, although not significant, was observed
as regard the reported presence of outdoor activities. As
suggested previously (1, 10), the typical actinic changes
in the elastic and collagen fibres seen at histological exa-
mination support this connection. The presence of solid
tumours in patients with VLL, although not significantly
different from that in control patients, may be a chance
result. Smoking is a possible risk factor for VLL (8),
which also requires further evaluation.
In conclusion, based on our experience, VLL repre-
sent a minor dermatological and aesthetic problem, in
which external factors, such as sun exposure in predis-
posed elderly patients, may play a role.

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The authors declare no conflicts of interest.

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