Feet nailfold capillaroscopy is not useful to detect the typical scleroderma pattern

Sirs,

We have read with great interest the letter to the editor by Batticciotto A. et al. regarding the capillaroscopic changes of the feet of patients with systemic sclerosis (SSc). This topic is of great importance for the rheumatologists as the specific “scleroderma type” capillaroscopic pattern of the hands is observed in a high proportion of cases with overt SSc ranging from 70% to 93% (1, 2, 3, 4). This pattern is characterised by giant capillaries, haemorrhages, avascular areas, and neoangiogenesis and can be assigned stages “early”, “active” and “late” according to the type and degree of microvascular changes. In addition, the presence of the “scleroderma type” capillaroscopic pattern improves the early diagnosis of the disease. Thus, in 2001, Le Roy and Medsger suggested criteria for an early diagnosis of SSc, according which the cases with “scleroderma-type” capillaroscopic pattern and/or SSc-specific autoantibodies in patients with Raynaud’s phenomenon (RP) have to be diagnosed as “prescleroderma” or limited SSc irrespective of the presence or absence of other symptoms of the disease (5). Despite the fact that patients frequently complain of RP of the feet, nailfold capillaroscopy of the toes is not routinely used in clinical practice. La Montagna et al. observed symptoms of RP of the feet in 90% of SSc patients among the examined 100 patients for a long period of follow-up (between 1 and 28 years, median 7 years), while RP of the hands was present in 100%. While all the patients showed symptoms of RP of the hands at the initial evaluation, RP of the feet was among the initial clinical features only in 43% of the patients, while 47% developed it in the course of the follow-up (6). In our own study, which included 36 SSc patients, we have registered symptoms of RP of the feet in 94.4% (34/36) vs. 100% frequency of RP at the hands (p<0.05). In parallel, we have found a significantly lower frequency of digital ulcers and a lower skin score of the feet as compared with hands (p<0.05). The disease-specific “scleroderma type” capillaroscopic pattern was observed significantly less frequent at the toes – in 66.7% (24/36) vs. 97.2% (35/36) at the fingers (p<0.05), (Fig. 1), (7). All the key capillaroscopic parameters, which are markers for microangiopathy e.g. giant capillaries, haemorrhages, avascular areas and neoangiogenic capillaries were present, but showed a significantly lower frequency at the toes as compared with fingers (Table 1). Therefore, we confirm the conclusion of Batticciotto A. et al., that capillaroscopic microvascular changes occur with lower frequency at the toes of SSc patients as compared with the feet, although RP affects feet in the majority of SSc patients. Similarly, we have observed a particularly lower frequency of the haemorrhages and giant capillaries of the toes versus those of fingers (8%, 3/36 vs. 58.3, 21/36, p<0.05 for haemorrhages and 30.6%, 11/36 vs. 77.7%, 28/36 for giant capillaries p<0.05), while Batticciotto A. et al. did not observe haemorrhages of the toes in the examined group and found giant capillary loops only in a single case. A possible explanation of these findings is the absence of follow-up. Considering the fact, that feet involvement in SSc frequently occur later in the disease course, while RP of the hands is the most frequent presenting feature, which in a high proportion of patients precedes other phenomena of the disease by years, in our opinion microvascular changes of the toes may and will be observed during the follow-up of these patients. The mean duration of SSc in patients in patients from our group, which showed the characteristic capillaroscopic changes of the toes (10.98±7.35 years) was higher as compared with cases with normal pattern or non-specific changes of the toes (9.21±7.16 years), but the difference in the disease duration was not statistically significant (p>0.05).

Fig. 1. Capillaroscopic patterns of finger and toe of two patients:
Patient 1: “Active” phase, “scleroderma” type capillaroscopic pattern of finger (1) and toe (1a);
Patient 2: “Early” phase, “scleroderma” type capillaroscopic pattern of the finger (2) and toe (2a);
D-dilated capillary loop, G-giant capillary loop, H-haemorrhage, AA-avascular area.

Table 1. The frequency of the capillaroscopic parameters of the “scleroderma” type pattern in the fingers and toes of SSc patients.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Fingers</th>
<th>Toes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giant capillaries</td>
<td>16.16%</td>
<td>30.6%</td>
</tr>
<tr>
<td>Haemorrhages</td>
<td>18.06%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Avascular areas</td>
<td>17.7%</td>
<td>41.7%</td>
</tr>
<tr>
<td>Neoangiogenesis</td>
<td>7.17%</td>
<td>22.2%</td>
</tr>
</tbody>
</table>

Of note, we have observed the classic “scleroderma type” capillaroscopic pattern in a single case, in which the capillaroscopic pattern of the fingers did not reveal abnormalities, which could be interpreted because of recent manicure and presented with hazy picture with traumatic haemorrhages. This fact suggests that capillaroscopic examination of the toes may be particularly useful in selected cases and should therefore be done and trained on a routine basis. Severe contractures in SSc, which affect more frequently the hands, may seriously impede the capillaroscopic examination of the fingers. Capillaroscopic examination of the toes may be considered in such cases as an option for evaluation of microvascular morphology. When comparing our data with those of Batticciotto et al. we would like to underline, that nailfold capillaroscopy of the toes of patients with SSc also shows patterns characteristic of SSc although with significantly lower frequency. In our opinion, this phenomenon is probably related to less-severe RP and lower skin scores at the feet. The vascular pathophysiology in SSc shows systemic although non-homogeneous pattern of involvement. In addition, we would like to remind, that the nailfold
capillaroscopy of toes should be considered in any algorithm of the capillaroscopic evaluation of microcirculation and may be beneficial specifically in difficult patients, as it also shows the characteristic microvascular changes although in a smaller proportion of patients. Moreover, the frequency of microvascular changes of the toes may be underestimated as in most cases symptoms of RP of the toes develop later in the disease course.

S. NIKOLOVA LAMBOVA,1,2,3 U. MÜLLER-LADNER2
1Department for Propedeutics in Internal Medicine, Medical University, Plovdiv, Bulgaria; 2Department of Rheumatology and Clinical Immunology, Justus-Liebig University Gießen Bad Nauheim, Germany; 3MHAT “Health” MS “Palmed” Plovdiv, Bulgaria.

Please address correspondence to: Sevdalina Nikolova Lambova, Department for Propedeutics in Internal Medicine, Medical University, 15A Vasil Aprilov Blvd., 4002 Plovdiv, Bulgaria.
E-mail: sevdalina_n@abv.bg

Competing interests: none declared.

References