First EULAR/EUSTAR Course

Capillaroscopy and differential diagnosis

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Specificity of different patterns

Method: “Blind ”evaluation (coded photographs)
Material: 173 patients, 50 SSc, 60 SLE, 26 MCTD, 11RD

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>SD pattern</th>
<th>Tortuous</th>
<th>Nonspec.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSc</td>
<td>50</td>
<td>82%</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>SLE</td>
<td>60</td>
<td>2%</td>
<td>42%</td>
<td>28%</td>
</tr>
<tr>
<td>MCTD</td>
<td>26</td>
<td>54%</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>RD</td>
<td>11</td>
<td>9%</td>
<td>36%</td>
<td>18%</td>
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</table>

SD-pattern may appear in all the “scleroderma spectrum disorders” classic SSc, preSSc (Raynaud’s disease), mixed connective tissue disease (MCTD) and dermatomyositis (DM)

Capillaroscopy in DM

Material: 18 photos were analysed on 11 SSc, 5 on 2 DM, 8 on 6 SLE

Method: Stereomicroscope, magnification: 30-70 X, ”blind” evaluation

<table>
<thead>
<tr>
<th>Pattern</th>
<th>SD-DM</th>
<th>Tortous</th>
<th>Normal</th>
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</thead>
<tbody>
<tr>
<td>SSc</td>
<td>17 (94%)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>DM</td>
<td>5 (100%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SLE</td>
<td>1 (13%)</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Controls</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
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The 5 DM were specifically identified by a ”bushy pattern” reflecting neovascularisation

Capillaroscopy in DM

SD pattern
Man 29 years with DM

Bushy capillaries
Girl 9 years with JDM

Several reports indicate an improvement with time of capillary abnormalities

Woman 61 years with DM 1994.
2001 no active myositis AS 01/05
Undifferentiated connective tissue disease (UCTD)

What is UCTD?? No classification criteria !!

sclerodactyly,
Raynaud’s phenomenon
capillary abnormality
pos ANA
various symptoms

Diagnos: Secondary Raynaud,
UCTD,
SuspSSc, (preSSc)
ISSc *
overlap
MCTD

* LeRoy and Medsger J Rheumatol 2001;28:1753-56
Capillaroscopy in UCTD

Material: 23 SSc
    22 SLE
    21 UCTD
    38 controls

Method: computerized analysis
    length and widht of loops, capillary density,
    number of giant, bushy and bizarre loops

Result: Patients with UCTD had
    decreased capillary density (p<0.005) and
    increased number of enlarged loops (p<0.0005)

Non specific changes in UCTD

Woman 55 years with UCTD
arthralgia, RP, dry eyes and mouth, trigeminus neuralgia, pos ANA, pos ACA

Man 30 years with UCTD
seronegative polyarthritis, RP including impotence pos ANA, anti RNP
Non specific changes in UCTD

Woman 55 years with UCTD
Capillary density: 5.6 loops/mm
(Normal range 5.8-9.4)

Man 30 years with UCTD
Capillary density 4.5 loops/mm
Predictive value of capillaroscopy

Follow up 6-8 years

Material: 17 PRP ➔ 2 UCTD
43 UCTD ➔ 10 SSc (23%)

Method. Quantitative analysis with an image processor

Result: In patients with UCTD who developed SSc
Apical limb width abnormal (p<0.02)
Capillary width abnormal (p<0.01)
Capillary length abnormal (p<0.01)

Conclusion: Quantitative capillaroscopy provides predictive information in UCTD

Ohtsuka et al Br J Dermatol 1998;139:622-629

AS 01/05
Capillaroscopy in UCTD

Material: 447 CTD including 65 UCTD

Method: semiquantitative classification
class I-V according to Maricq
class II-V and severe avascular areas – scleroderma pattern

Result: 9/65 (13.8 %) had scleroderma pattern

Conclusion: Capillaroscopy seems to be a useful tool for early selection of patients who are potential candidates for developing scleroderma spectrum disorders.

Nagy and Czirjak JEAHV 2004;18:62-68
Capillaroscopy in SLE

Normal capillary density! Normal capillary pattern in about 50%

Nonspecific changes

* Increased tortuosity

* Loop elongation

* Enlarged loops (not megacapillaries)

* Branching loops and increased visibility of subpapillary plexus

W Grassi. Atlas of capillaroscopy
Sjögren’s syndrome (SS) and RA

No specific capillary changes!!!

Scleroderma pattern was described in SS by Tektonidou and was related to presence of Raynaud’s phenomenon and presence of centromere antibodies

Tektonidou et al Rheum 1999;38:826-830

If a scleroderma pattern is present, look for a subclinical SSc or an overlap
Capillaroscopy in acrocyanosis

Acrocyanosis: Symmetric coolness and violaceous discoloration of hands and feet. Mostly young, thin women. Common manifestation of anorexia nervosa

Capillary pattern: homogeneously enlarged loops ev also subpapillary plexus slightly reduced capillary density

W Grassi. Atlas of capillaroscopy
Capillaroscopy in various diseases

Woman 50 years with morphea
Capillary density: 7.2 loops/mm

Man 55 years with GVHD
05/98 chronic myelocytic leukemia
02/99 allogenic bone marrow transpl.
2001 ↑ skin thickness GVHD? SSc?
Capillary density: 6.0 loops/mm

Man 41 years with Buerger’s disease
Heavy smoker. Finger tip ulcer dig III
Capillary density: 6.7 loops/mm