

Capillaroscopy and differential diagnosis

A Scheja

Department of Rheumatology,
University Hospital, Lund, Sweden

Specificity of different patterns

Method: “Blind ”evaluation (coded photographs)

Material: 173 patients, 50 SSc, 60 SLE, 26 MCTD, 11RD

	N	SD pattern	Tortuous	Nonspec.
SSc	50	82 %	6%	8%
SLE	60	2%	42%	28%
MCTD	26	54%	12%	12%
RD	11	9%	36%	18%

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

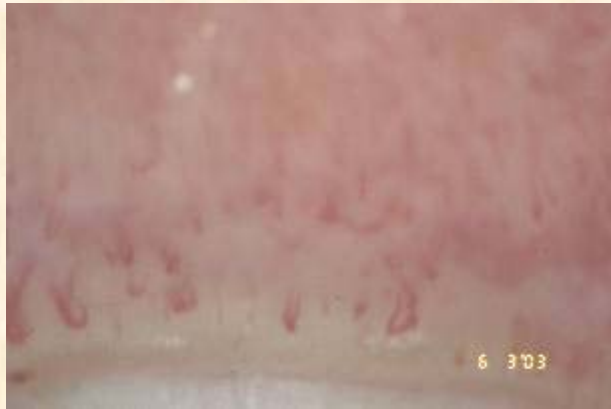
Method: Stereomicroscope, magnification: 30-70 X, "blind" evaluation

Pattern	SD-DM	Tortous "meandering"	Normal
SSc	17 (94%)	0	1
DM	5 (100%)	0	0
SLE	1 (13%)	6	1
Controls	0	0	7

The 5 DM were specifically identified by a "bushy pattern" reflecting neovascularisation

Kenik et al Arthritis Rheum 1981;7:885-891

Capillaroscopy in DM

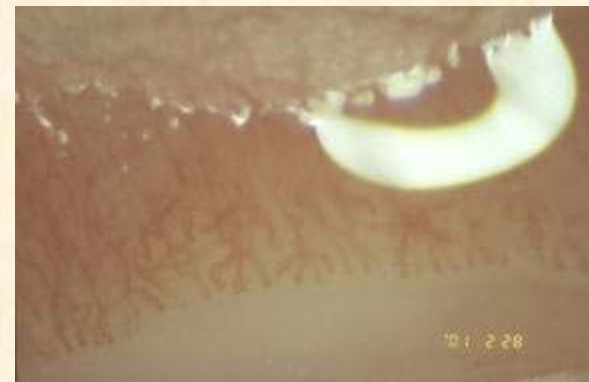


SD pattern
Man 29 years with DM



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)
lSSc *
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 width of loops, capillary density,
number of giant, bushy and bizarre loops

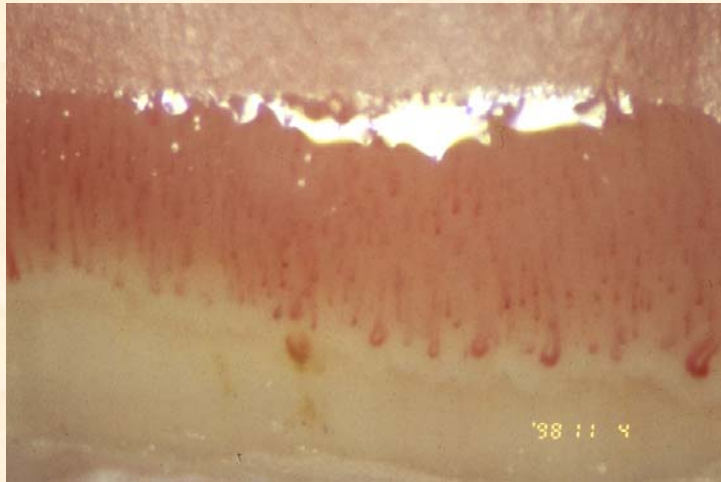
Result: Patients with UCTD had

decreased capillary density ($p < 0.005$) and

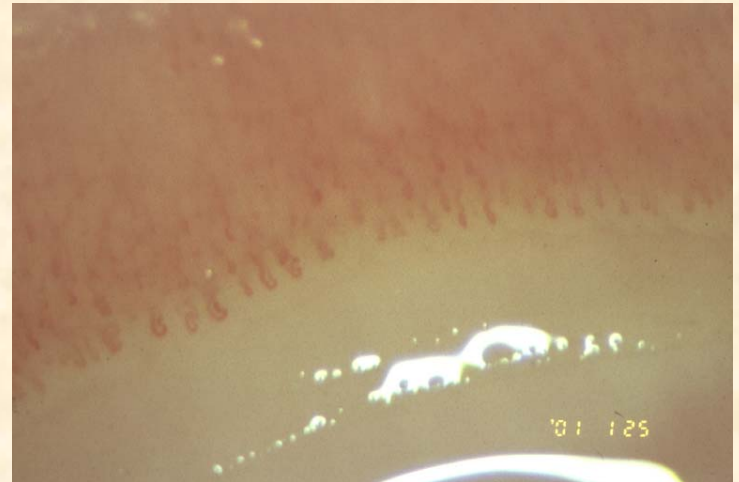
increased number of enlarged loops ($p < 0.0005$)

Kabasakal et al Ann Rheum dis 1996;55:507-512

Non specific changes in UCTD

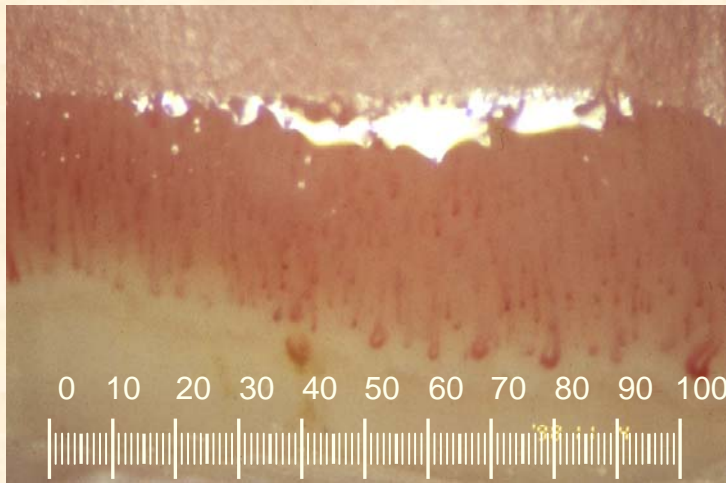


Woman 55 years with UCTD
arthralgia, RP, dry eyes and mouth,
trigeminus neuralgia,
pos ANA, pos ACA

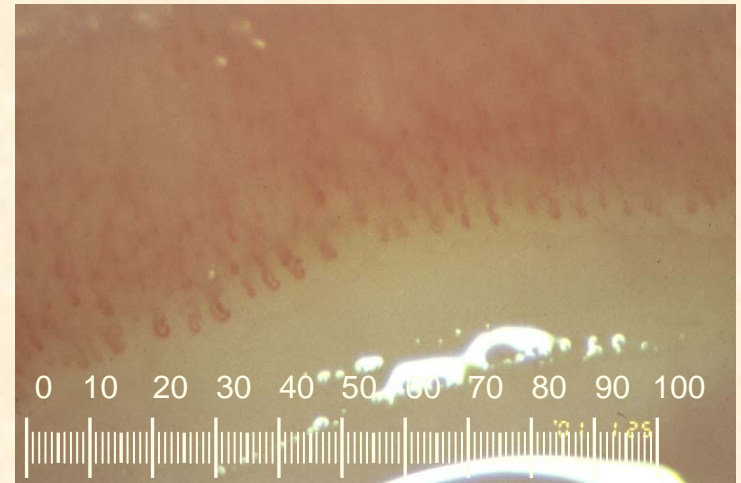


Man 30 years with UCTD
seronegative polyarthritis,
RP including impotence
pos ANA, anti RNP

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		

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 JEADV 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

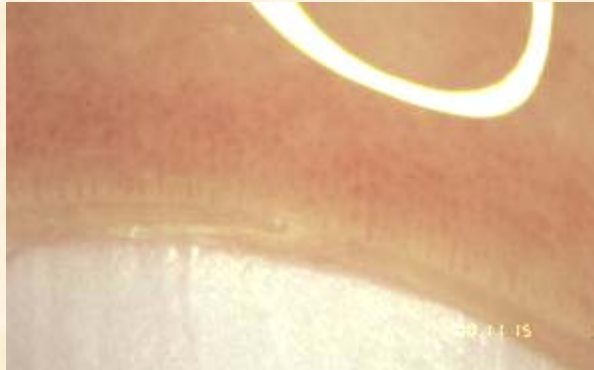
Capillaroscopy in acrocyanosis

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



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