



Utilidad de la capilaroscopia: más allá de la esclerodermia

II Reunión en enfermedades autoinmunes sistémicas
Bilbao 25-26 de junio de 2009

Dr. Vicent Fonollosa Pla
Dra. Carmen Pilar Simeón Aznar

Computerized Nailfold
A New Tool for

Diagnosis
Feasibility of Different Capillaroscopic Measures
for Identifying Nailfold Microvascular Alterations —
Raynaud's

Capillary Microscopy and the Role of Capillaroscopy
Nailfold Capillary Microscopy in Adults with
Inflammatory Myopathy

A Portable Digital
Documentation of Periungual
Changes in Autoimmune Connective Tissue Diseases —
Suggestive

Prognostic Model Based on Nailfold Capillaroscopy for
Identifying Raynaud's Phenomenon Patients at
High Risk for the Development of a
Scleroderma Spectrum Disorder

CAPILAROSCOPIA. Reseña histórica



Malpighi (1628-1694)

Microcirculación

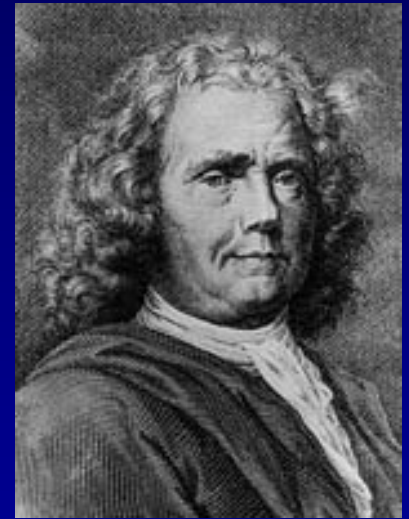
Purkinje (1823): Capilares cutáneos con lupa

Lombard (1911): capilaroscopia periungueal

Müller (1922): Recopilación

Brown (1925): Megacapilares esclerodérmicos

Maricq (1978): Capilaroscopia, aplicación clínica

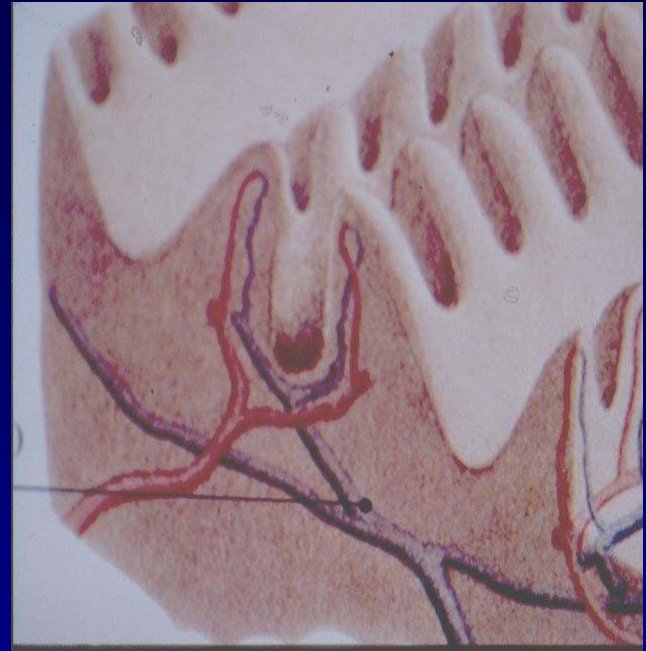


Boerhaave (1668-1738)

Observación de los capilares conjuntivales

CAPILAROSCOPIA

Microcirculación cutánea
Porción venular
Porción arteriolar



Morfología capilar
Lecho periungueal

CAPILAROSCOPIA. Semiología



Sinuosidades



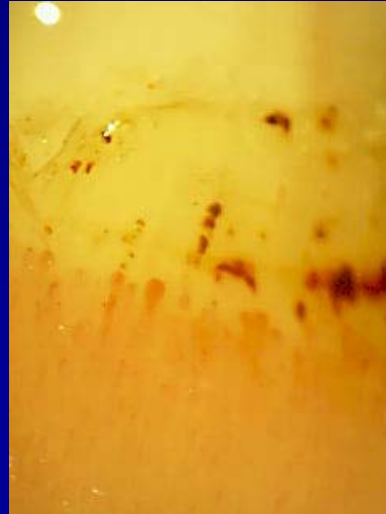
Ramificaciones



Dilataciones



Estasis



Hemorragias



Pérdida capilar

CAPILAROSCOPIA y ENFERMEDAD

Diagnóstico - Pronóstico

Acrosíndromes vasculares

Conectivopatías

Arteriopatías

Enfermedades cutáneas

Enfermedades hematológicas

Enfermedades neuropsiquiátricas

CAPILAROSCOPIA. Acrosíndromes

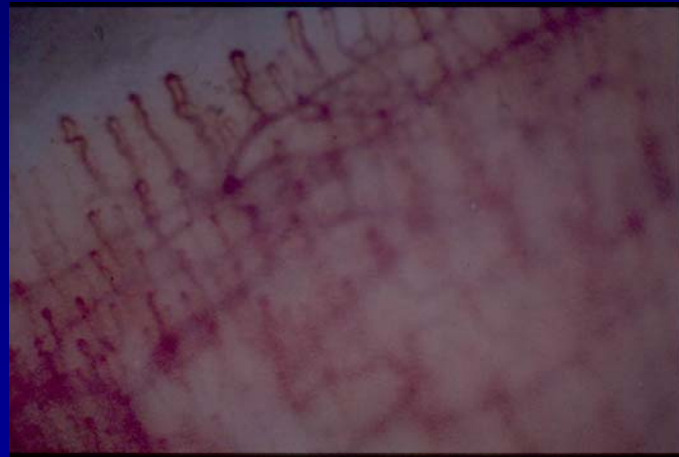
Acrocianosis

Livedo reticularis

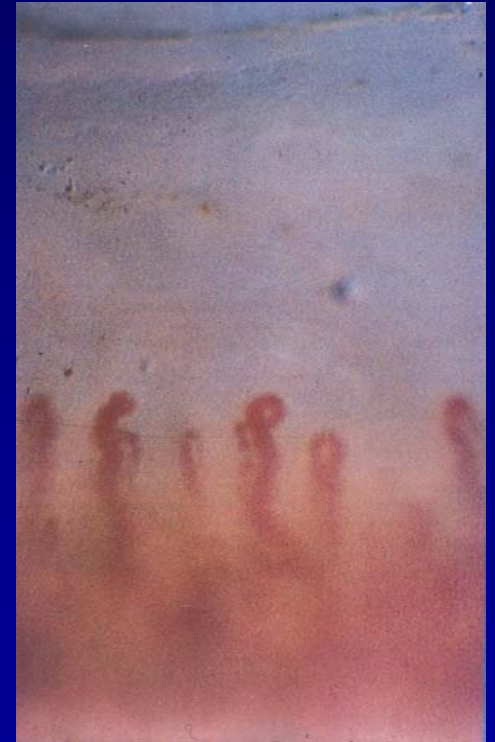
Fenómeno de Raynaud

Eritromelalgia

ACROCIANOSIS



Estasis vascular

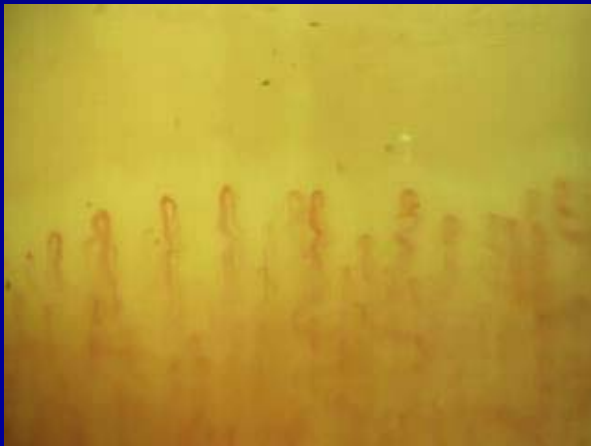


Maurice Raynaud Fenómeno de Raynaud



Capilaroscopia

Fenómeno de Raynaud 1°



Acrocianosis



F.Raynaud. Clasificación



Primario



Secundario

Capillaroscopy results in primary RP cases and in the control group*

	RP cases N (%)	Comparative group N (%)
Normal capillaries	17 (53,1)	58 (71,6)
Pathological capillaries	15 (46,8)	23 (28,4)
Tortuosity	15 (46,8)	23 (28,4)
Visible vein network	1 (3,1)	3 (3,7)
Dilated capillaries	1 (3,1)	1 (1,2)
Ramifications	4 (12,5)	2 (2,5)
Total	32	81

*Table 2 x 2 betwen normal/pathological and cases/comparative group
 $X^2 = 3.5$, $p = 0.06$

Fenómeno de Raynaud. Causas

Conectivopatías

Oclusión arterial

Endocrinopatías

Neoplasias

Anomalías hematológicas

Micotraumatismos

Alteraciones vasospásticas

Infecciones

Fármacos

Síndrome del aceite tóxico

F. Raynaud y Enfermedades del tejido conjuntivo

- Esclerodermia 95%
- EMTC 91%
- LES 10-45%
- Síndrome de Sjögren 35%
- Dermatomiositis 20-30%
- Artritis reumatoide 10-20%

Capilaroscopia: fenómeno de Raynaud

Fenómeno de Raynaud 2°

Dilatación



Megacapilares



Pérdida capilar



CAPILAROSCOPIA y PRONÓSTICO

	N	Años	ESC (%)	
			CAP Nor.	CAP Alt.
Maricq	51	2,8	0	24
Priollet	73	4,7	1,9	60
Fitzgerald	58	2,7	10,4	60

Riesgo relativo (FR y CAP +/FR y CAP -): 12,9

Prognostic Model Based on Nailfold Capillaroscopy for Identifying Raynaud's Phenomenon Patients at High Risk for the Development of a Scleroderma Spectrum Disorder

PRINCE (Prognostic Index for Nailfold Capillaroscopic Examination)

Francesca Ingegnoli, Patrizia Boracchi, Roberta Gualtierotti, Chiara Lubatti, Laura Meani, Lenka Zahalkova, Silvana Zeni, and Flavio Fantini

Table 2. Multivariate regression analysis of the 3 prognostically relevant capillaroscopy parameters*

Prognostic variable	HR	95% CI	χ^2	P
Giant loops	1.58	0.6–4.14	0.86	0.355
Microhemorrhages	1.77	0.79–3.95	1.93	0.164
No. of capillaries				
Linear	0.66	0.45–0.98	4.15	0.042
Nonlinear	1.66	1.01–2.70	4.06	0.044

* HR = hazard ratio; 95% CI = 95% confidence interval.



Conclusion. Our prognostic capillaroscopic index identifies RP patients in whom the risk of developing SSDs is high. This model is a weighted combination of different capillaroscopy parameters that allows physicians to stratify RP patients easily, using a relatively simple diagram to deduce the prognosis. Our results suggest that this index could be used in clinical practice, and its further inclusion in prospective studies will undoubtedly help in exploring its potential in predicting treatment response.



Autoantibodies and Microvascular Damage Are Independent Predictive Factors for the Progression of Raynaud's Phenomenon to Systemic Sclerosis

A Twenty-Year Prospective Study of 586 Patients,
With Validation of Proposed Criteria for Early Systemic Sclerosis

Table 1. Demographic features of 784 consecutive adult patients with RP and progression to definite SSc*

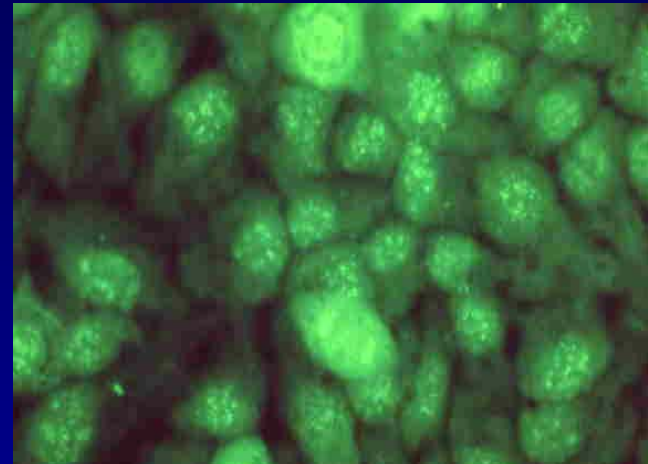
	Primary RP (n = 299)	Pre-CTD (n = 317)	Early SSc (n = 168)	Total cohort (n = 784)	P
Ratio of females to males	4:1	4.75:1	7.4:1	4.8:1	0.08
Caucasian, no. (%)	296 (98)	312 (98)	166 (98)	699 (98)	NS
Age at onset of RP, mean ± SD years	31.6 ± 12	34.8 ± 13	38.4 ± 15	34.3 ± 13	<0.0001
Age at first evaluation, mean ± SD years	37.1 ± 11	40.3 ± 13	42.8 ± 14	39.6 ± 13	<0.0001
RP duration at first evaluation, median (IQR) years	3 (1.1–7.5)	2.7 (1–7)	2.3 (1–5)	3 (1–7)	NS
Proportion of patients followed up, no. (%)	210 (70)	236 (74)	140 (83)	586 (75)	0.007
Duration of followup					
Median (IQR) years†	4 (1.1–8.1)	4.2 (1.2–8.5)	4.6 (1.9–8.3)	4 (1.1–8.3)	NS
No. of person-years‡	1,064	1,300	832	3,197	–
Frequency of progression to definite SSc, no. (%)†‡	0 (0)	8 (3.4)	66 (47)	74 (12.6)	<0.0001
Incidence of definite SSc, per 100 person-years†	0	0.6	7.9	2.3	–
Time to definite SSc after first evaluation, median (IQR) years	NA	2.07 (1.61–4.55)	1.75 (0.56–4.77)	1.95 (0.59–4.7)	NS
Time to definite SSc after onset of RP, median (IQR) years	NA	5.67 (2.95–15.5)	4.56 (2.5–8.94)	4.56 (2.5–9.5)	NS
Estimate of progression to SSc, %§					
After 5 years	0	4	47	–	
After 10 years	0	5	69	–	<0.001¶
After 15 years	0	11	79	–	

Autoantibodies and Microvascular Damage Are Independent Predictive Factors for the Progression of Raynaud's Phenomenon to Systemic Sclerosis

A Twenty-Year Prospective Study of 586 Patients,
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Koenig M et al. *Arthritis and Rheumatism*. 2008;58:3:902-12

Last, this study is the first to validate the criteria for early SSc that were proposed by LeRoy and Medsger, but were not validated (21). According to these criteria, when the presence of RP is subjective only (i.e., by patient report only), as in the present study, early SSc may be diagnosed when both an SSc pattern on NCM and SSc-specific autoantibodies are observed (21). In our cohort, patients in whom both predictors were present at baseline were 60 times more likely to develop definite SSc than were patients without these predictors.



Conclusion. In RP evolving to definite SSc, microvascular damage is dynamic and sequential, while SSc-specific autoantibodies are associated with the course and type of capillary abnormalities. Abnormal findings on NCM at baseline together with an SSc-specific autoantibody indicate a very high probability of developing definite SSc, whereas their absence rules out this outcome.

Fenómeno de Raynaud



Edad: 20 – 40 años

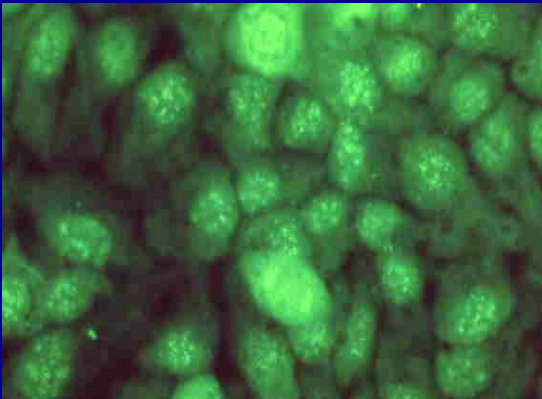
Manifestaciones clínicas:

Úlceras digitales

Necrosis isquémica

Anticuerpos antinucleares

Capilaroscopia



CAPILAROSCOPIA. Conectivopatías

Esclerodermia

Enfermedad mixta del tejido conjuntivo

Dermatopolimiositis

L.E.S.

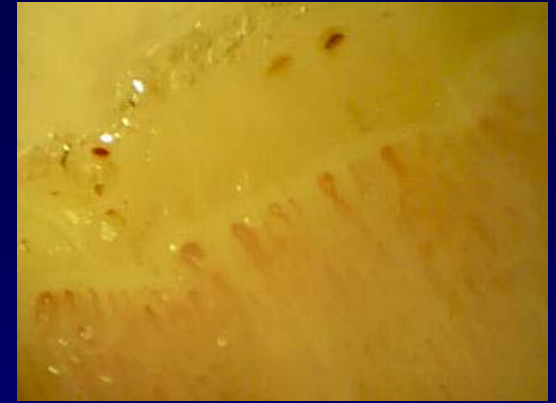
Síndrome de Sjögren

Vasculitis



Vasculitis

Capilaroscopia



E.M.T.C

Conectivopatías



Sd. de Sjögren



L.E.S.



Dermatomiositis

Morphologic capillary changes and manifestations of connective tissue diseases in patients with primary biliary cirrhosis

V Fonollosa^{1*}, CP Simeón¹, L Castells¹, F Garcia¹, A Castro¹, R Solans¹, J Lima¹, V Vargas¹, J Guardia¹ and M Vilardell¹

¹Department of Internal Medicine, Hospital General Universitari Vall d'Hebron, Universitat Autònoma Barcelona, Barcelona, Spain

Lupus (2001) **10**, 628–631.

Table 1 Nailfold capillary findings in the PBC and control groups

	<i>PBC group</i>	<i>Control group</i>
Patients	22	15
Capillary loop dilatation	3	0
Haemorrhage	1	0
Tortuosities	8	2
Megacapillaries	8	0
Normal	2	13



Nailfold Capillary Microscopy in Adults with Inflammatory Myopathy

Albert Selva-O'Callaghan, MD, PhD,* Vicente Fonollosa-Pla, MD, PhD,*
Ernesto Trallero-Araguás, MD,* Xavier Martínez-Gómez, MD,†
Carmen Pilar Simeon-Aznar, MD, PhD,*
Moisés Labrador-Horrillo, MD, PhD,* and
Miquel Vilardell-Tarrés, MD, PhD*

Semin Arthritis Rheum 2008

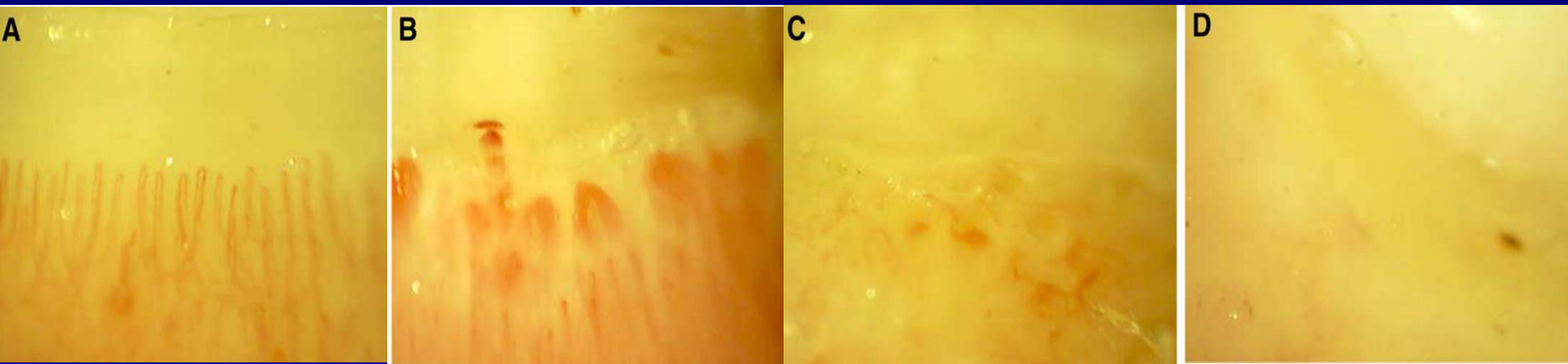
Table 1 Morphologic Capillary Abnormalities in Adult Patients with Idiopathic Inflammatory Myopathy

Patients	DM (n = 34)	PM (n = 17)	Total (n = 50)
Microhemorrhages ^a	23 (67)	1 (6)	24 (48)
Enlargement*	22 (65)	4 (24)	26 (52)
Capillary loss	5 (20)	0 (0)	5 (15)
Ramified	27 (79)	11 (64)	38 (76)
Meandering and tortuous	32 (94)	16 (88)	48 (90)
NC score 2	13 (38)	2 (12)	

Nailfold Capillary Microscopy in Adults with Inflammatory Myopathy

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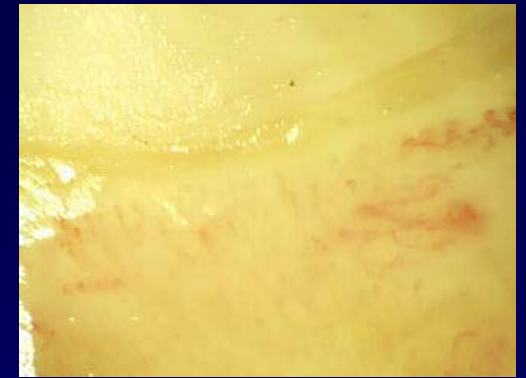
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Capilaroscopia



Dilataciones



Desestructuración vascular



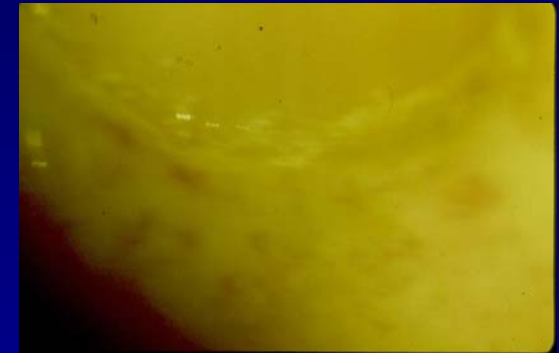
Megacapilares



Esclerodermia



Megacapilares



Pérdida capilar



Hemorragias

CAPILAROSCOPIA. Esclerodermia

Alteraciones capilaroscópicas (63) %

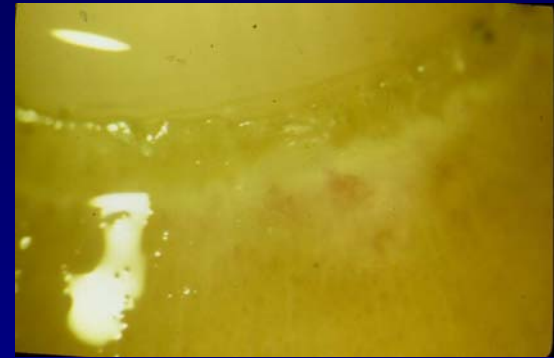
Sin alteraciones	5
Dilatación capilar	93
Discreta	32
Megacapilares	62
Pérdida capilar	68
Discreta	42
Extensa	27
Dilatación y pérdida	62
Dilatación aislada	32
Pérdida capilar aislada	7

CAPILAROSCOPIA. Esclerodermia

Patrones capilaroscópicos*

Patrón activo

pérdida capilar intensa
desestructuración vascular
dilataciones escasas



Patrón lento

dilataciones-megacapilares
pérdida discreta



*HR.Mariqc

CAPILAROSCOPIA. Esclerodermia

N: 331

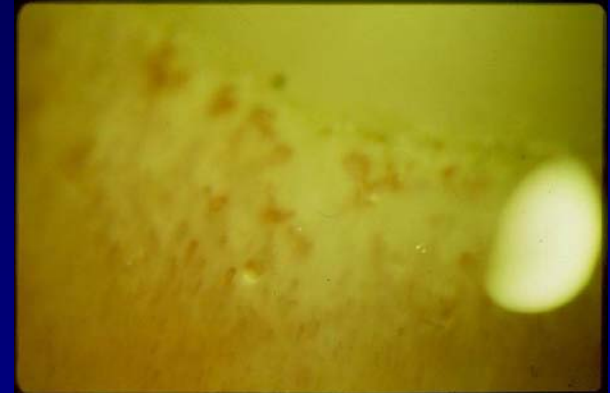
Capilaroscopias: 279

Patrón activo (41)

Difusa	22
Limitada	18

Patrón lento (213)

Limitada	132
Difusa	26



CAPILAROSCOPIA. Esclerodermia

TABLA 2

Subtipos de esclerodermia y alteraciones capilaroscópicas

Subtipo (n.º de casos)	Dilatación		Pérdida	
	Moderada	Extrema	Escasa	Extensa
Difusa (11)	5 (46)	4 (36)	3 (27)	7 (63)*
Limitada (52)	14 (27)	33 (63)	22 (42)	9 (17)*

* p = 0,003. Resultados expresados en n.º de casos (tanto por ciento).

TABLA 3

Número de órganos afectados y alteraciones capilaroscópicas

N.º de órganos (n.º de casos)	Dilatación		Pérdida	
	Moderada	Extrema	Escasa	Extensa
Uno (8)	1 (12)	7 (87)	4 (50)	0
Dos (30)	8 (26)	18 (60)	13 (43)	6 (20)
Tres (21)	9 (43)	10 (47)	6 (29)	8 (26)
Cuatro (4)	1 (25)	2 (50)	2 (50)	2 (50)

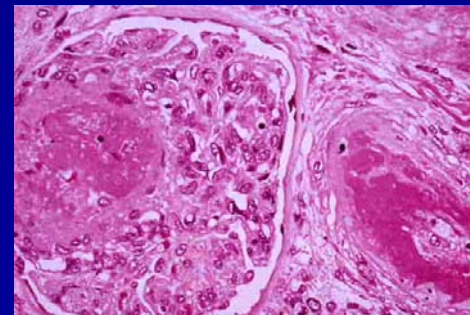
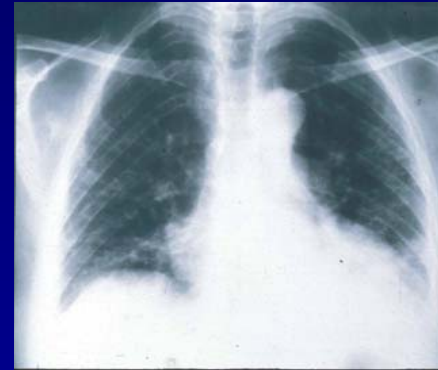
Resultados expresados en n.º de casos (tanto por ciento).
Valores de p > 0,05.

TABLA 4

Tipo de afección visceral y alteraciones capilaroscópicas

Tipo de afección	N.º de casos (tanto por ciento)	Capilaroscopia patológica	Dilatación		Pérdida	
			Moderada	Extrema	Escasa	Extensa
Digestiva	54 (85)	51 (84)	15 (28)	31 (57)	20 (37)	14 (26)
Respiratoria	44 (69)	43 (97)	14 (32)	24 (54)	16 (36)	13 (29)
Cardíaca	48 (76)	48 (76)	14 (28)	28 (56)	17 (34)	15 (30)
Renal	4 (6)	4 (100)	1 (25)	2 (50)	2 (50)	2 (50)

Resultados expresados en n.º de casos (tanto por ciento).
Valores de p > 0,05.



ESCLERODERMIA. Clasificación en subtipos

Pre-esclerodermia

Fenómeno de Raynaud
Sin afectación cutánea
Úlceras digitales
Alts. capilaroscópicas
AAN específicos

Forma difusa

F. de Raynaud <1a.
Afectación troncal y acra
Roces tendinosos
Afectación visceral temprana

Anti-Scl 70 (25-30%)



Forma limitada

F. de Raynaud >5a.
Afectación cutánea distal

Telangiectasias, calcinosis
afectación digestiva. HTAP
Dilatación capilar

AAcentrómero (59-80%)

ESC sine esclerodermia

F. de Raynaud +/-
Sin afectación cutánea
Afectación visceral
AAN específicos

CAPILAROSCOPIA. Aplicación clínica



Técnica: sencilla-incruenta

Utilidad en el diagnóstico:

Fenómeno de Raynaud 1°-2°

Esclerodermia

Dermatomiositis

EMTC

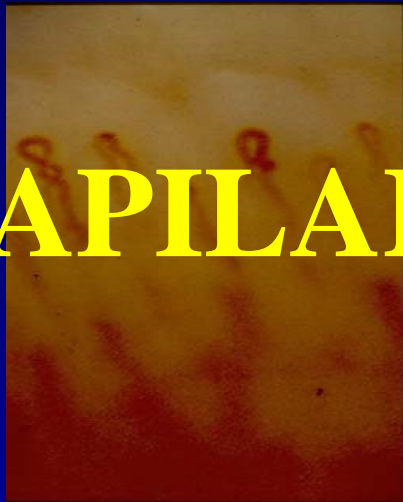
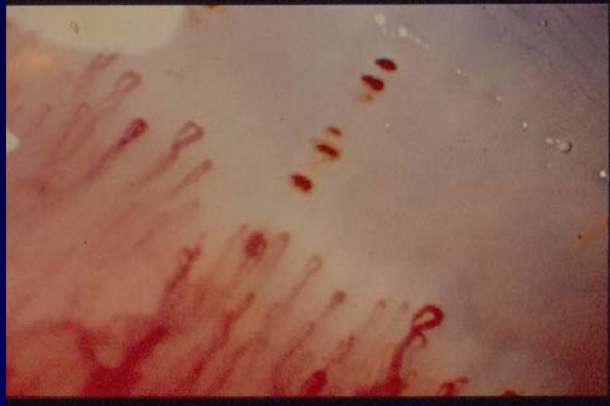
LES

Utilidad en el pronóstico

Fenómeno de Raynaud

Esclerodermia





CAPILAROSCOPIA

