Ecografía en pacientes con Artritis: valor diagnóstico de la imagen

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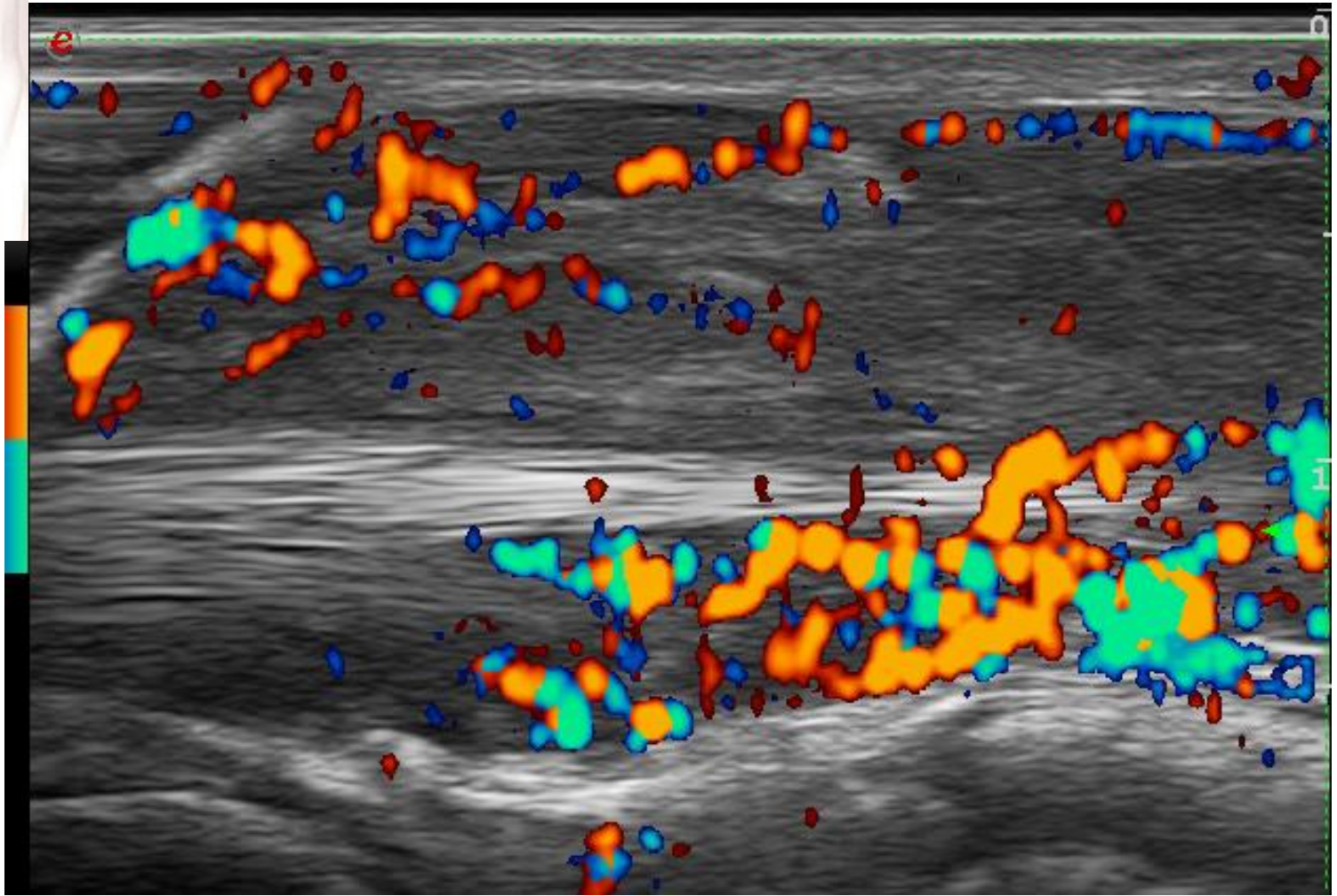
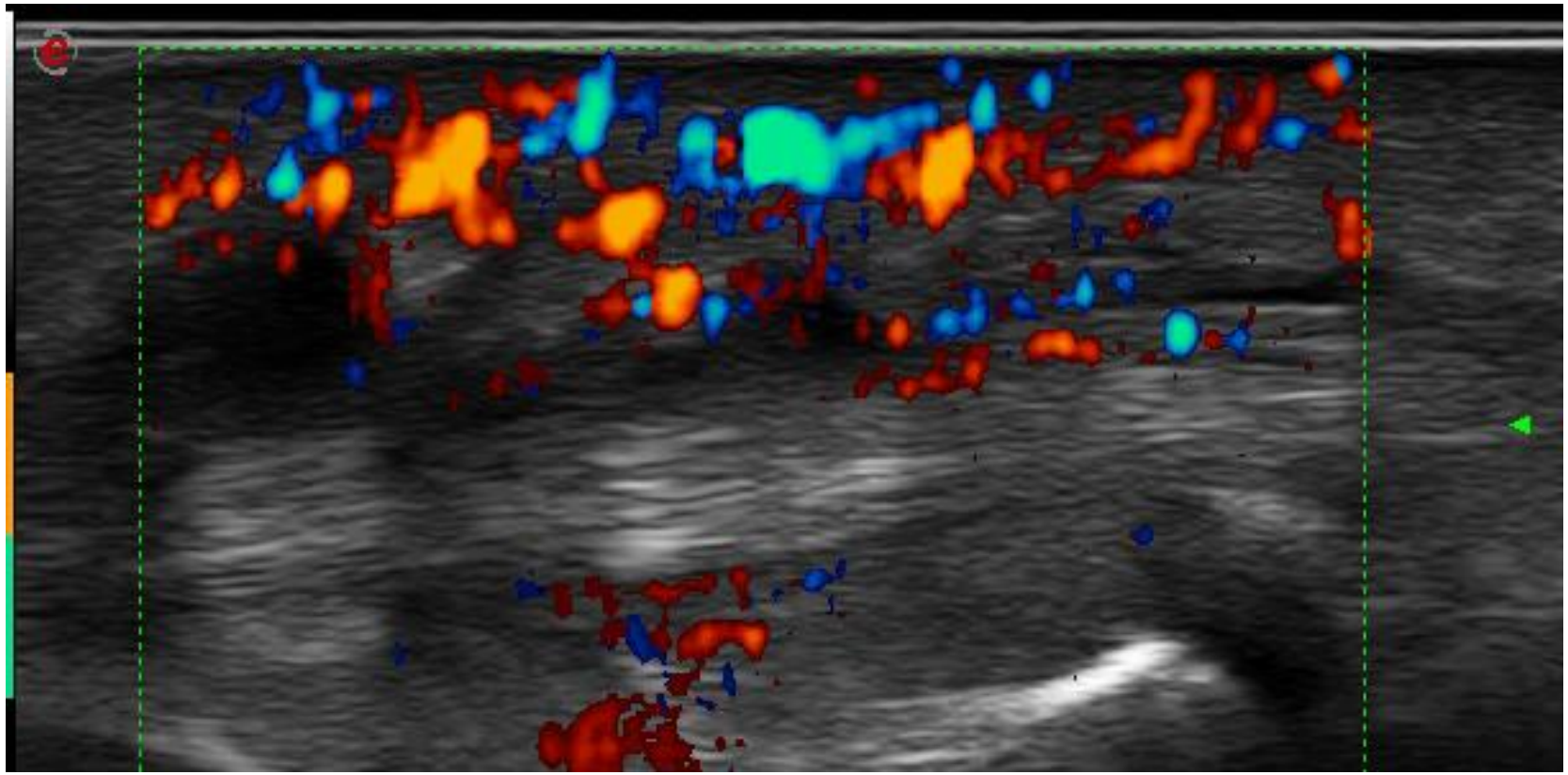
Hospital Clínic Barcelona

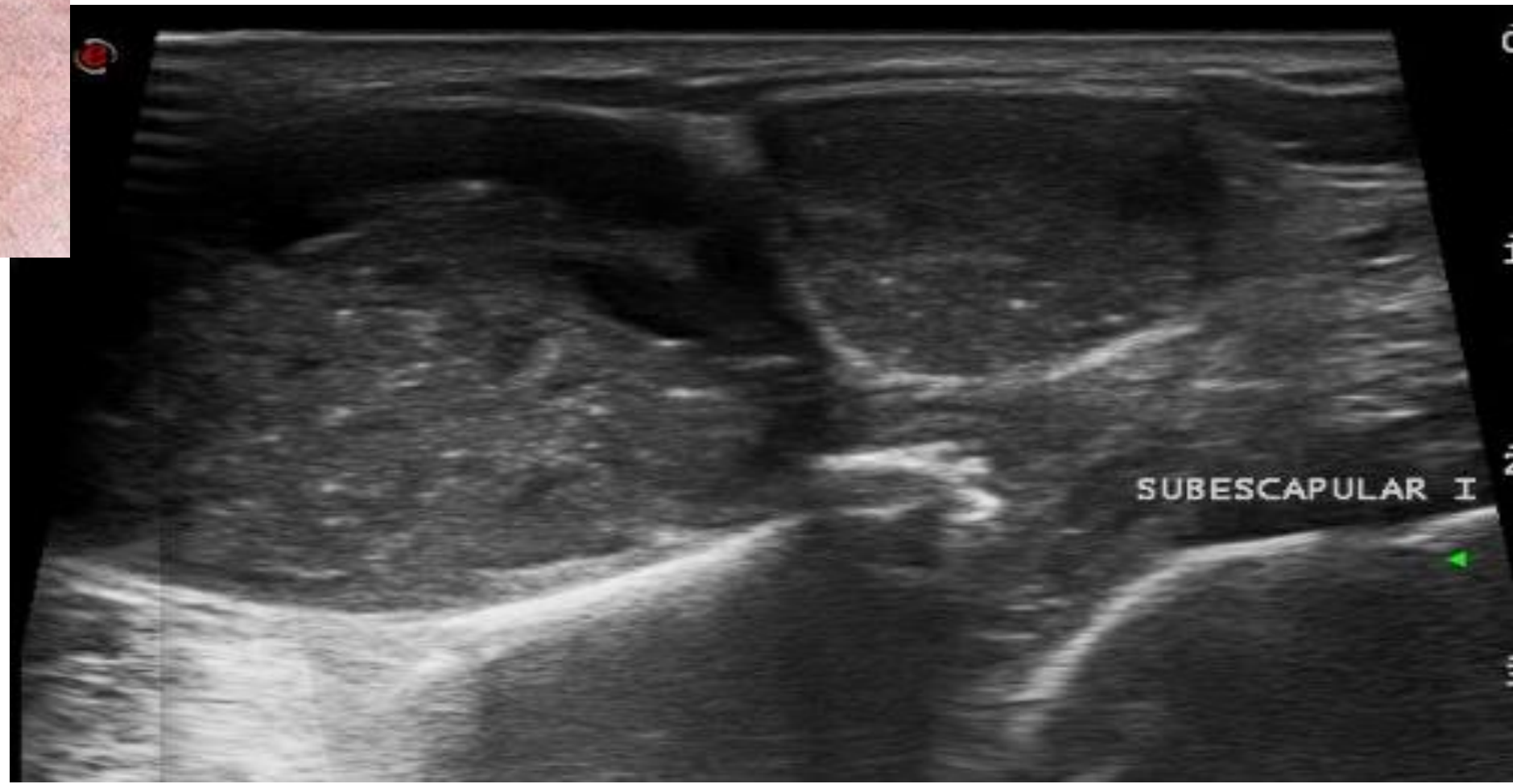
Conflictos de interés

He realizado ponencias y/o recibido ayudas para proyectos científicos de las siguientes compañías

MSD, Pfizer, Abbvie, Bristol, Novartis, Johnson and Johnson, Amgen, Roche

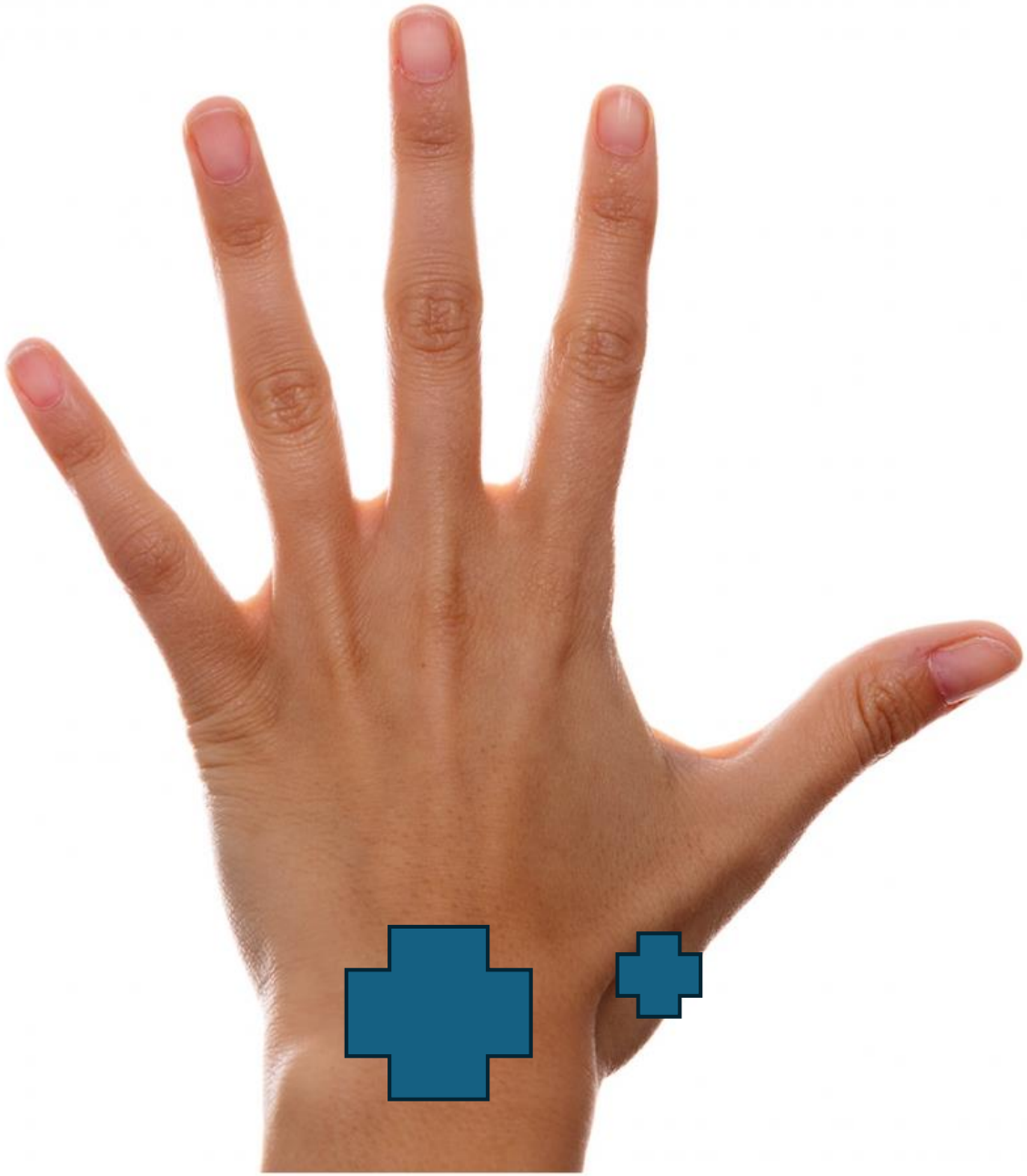





SUBESCAPULAR I

Key Point

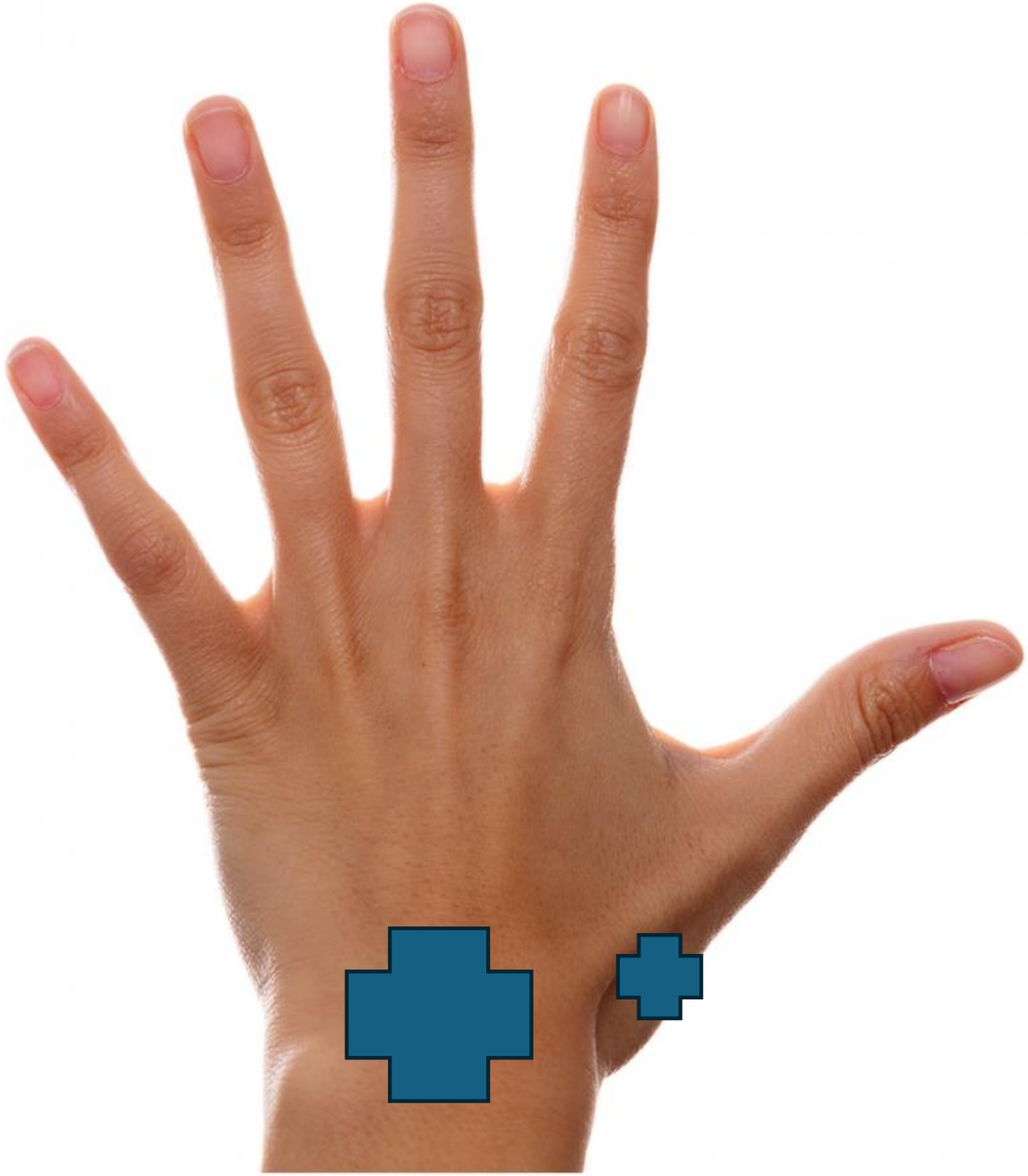
- Point-of-care ultrasound can be performed and interpreted by the rheumatologist **at the bedside** as part of the clinical examination for clearly distinguishing between normal and abnormal conditions and for differentiation of pathology

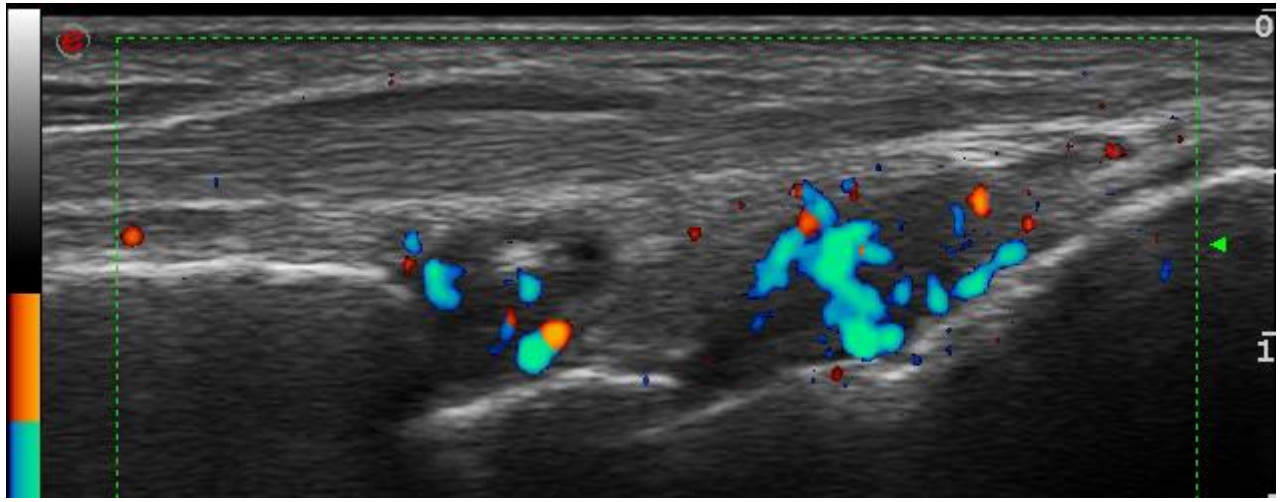


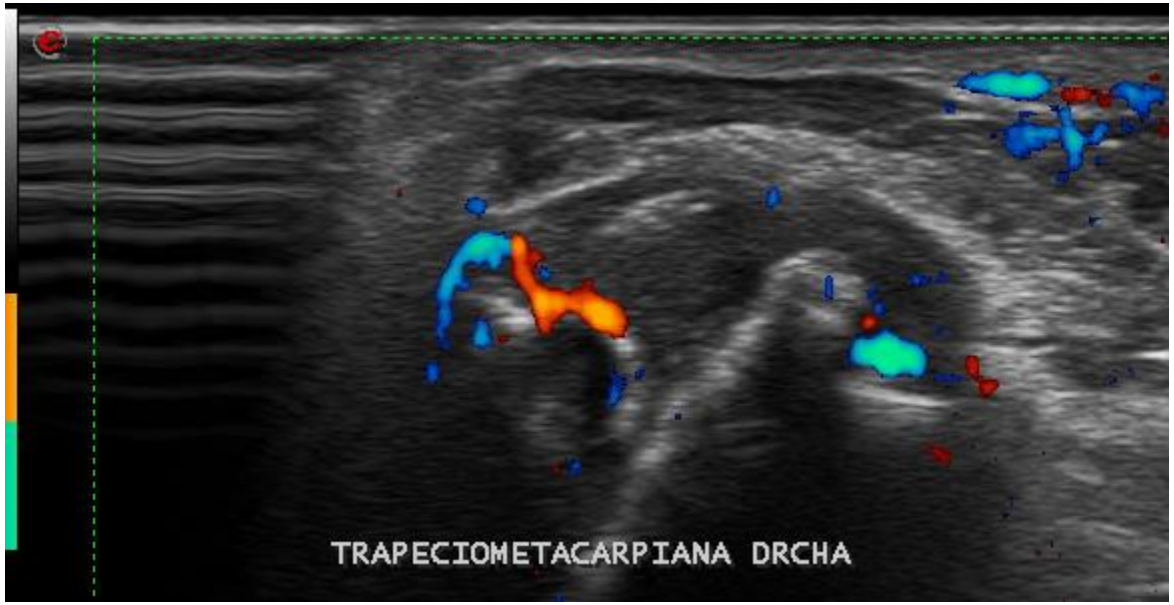
Varón 57 años

PCR 1.12mg/dl, vsg 19

FR negativo
ACPA negativo



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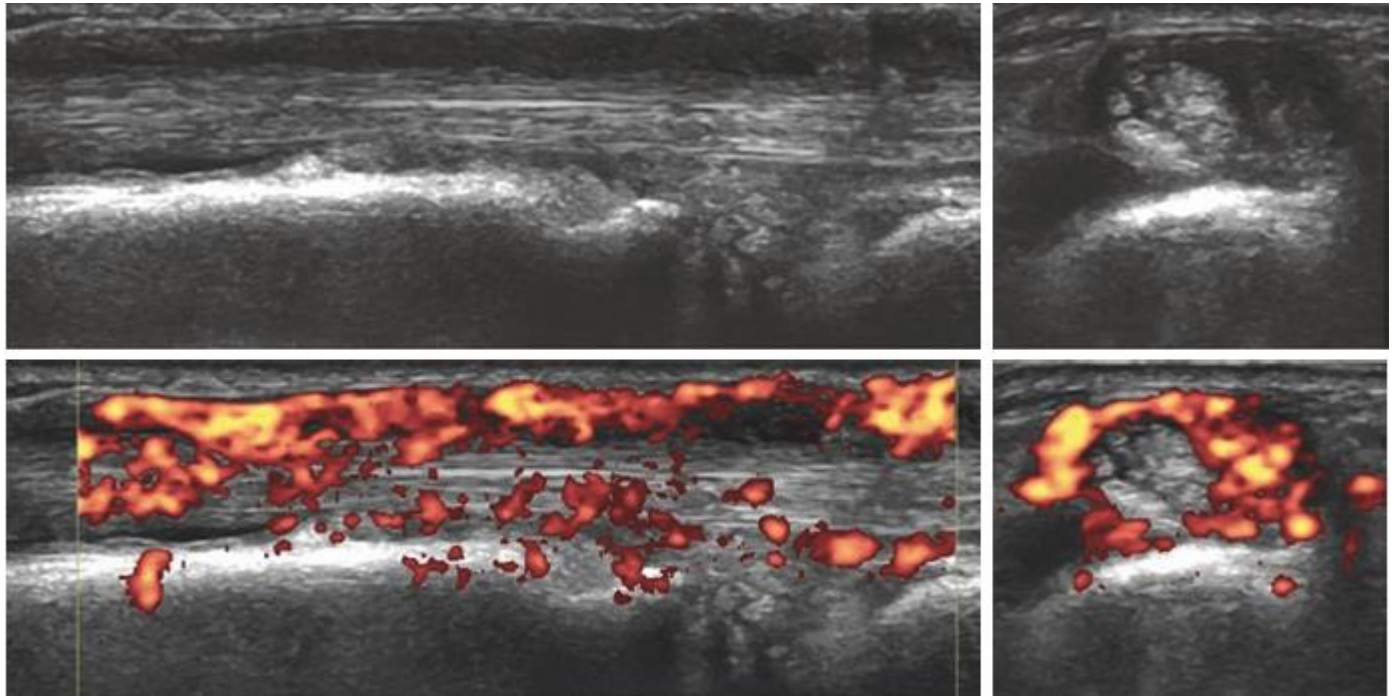


¿Qué ha aportado la ecografía en este caso?

- Dolor/monoartritis carpo------> Oligoartritis

- Afectación Tendón Extensor Cubital---> Artritis Reumatoide

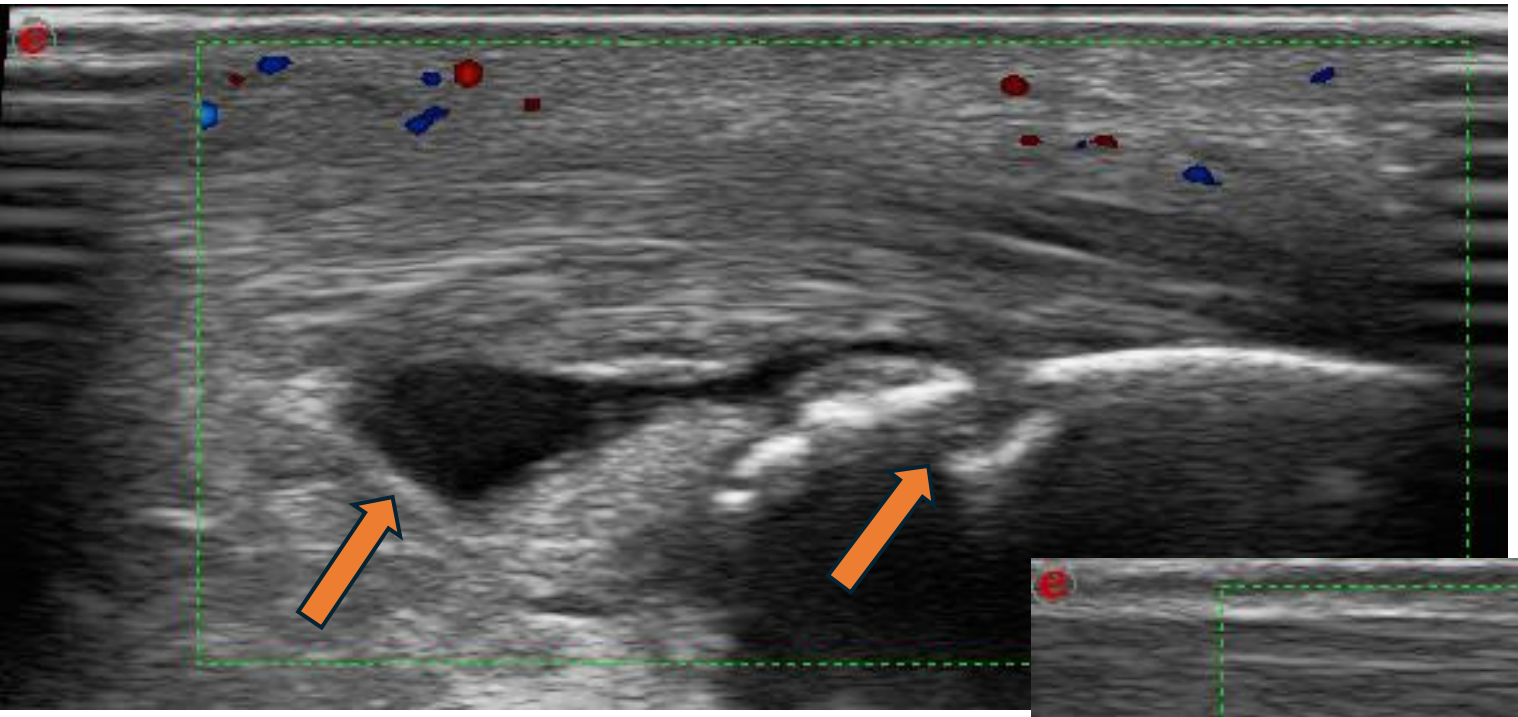
- Sinovitis Globulosa (Grado II-III)-----> Artritis Reumatoide

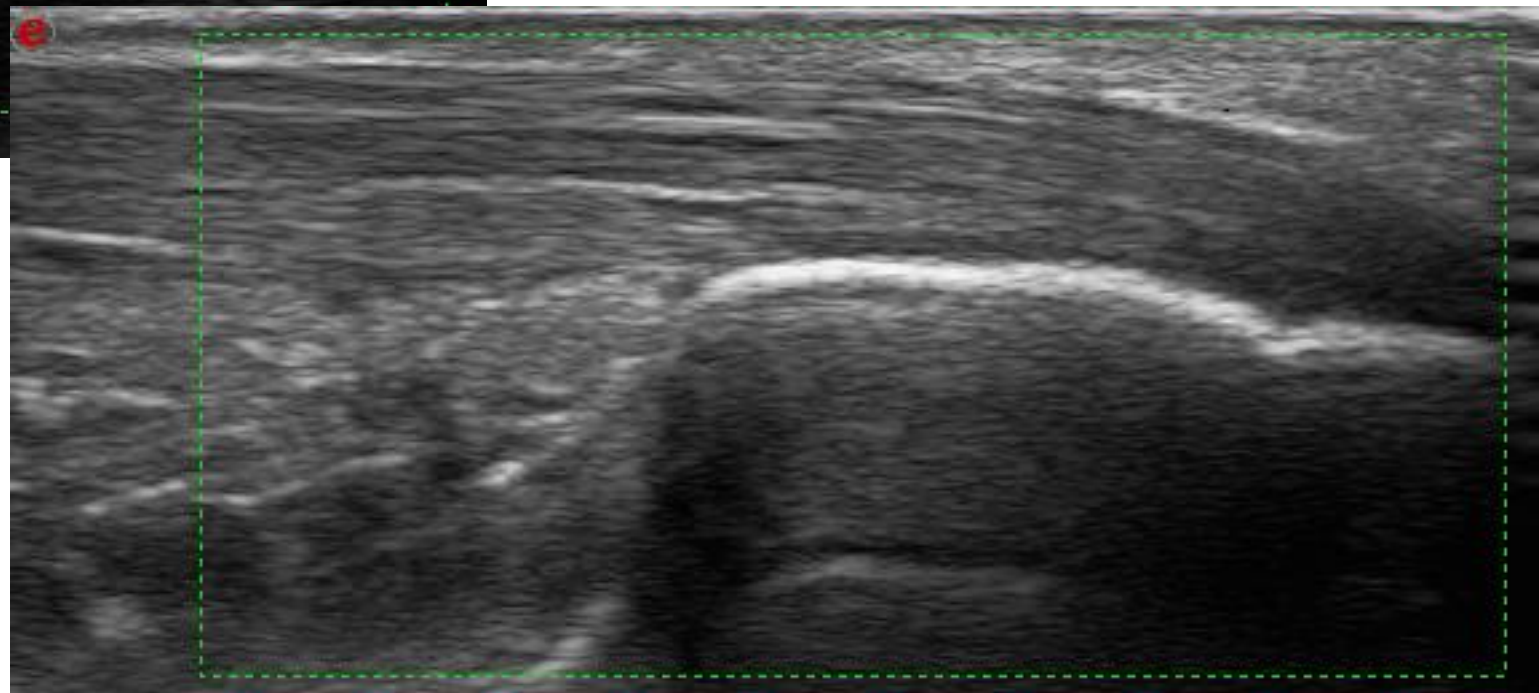
  Enfermedad erosiva?

Indications for Ultrasound in Rheumatology

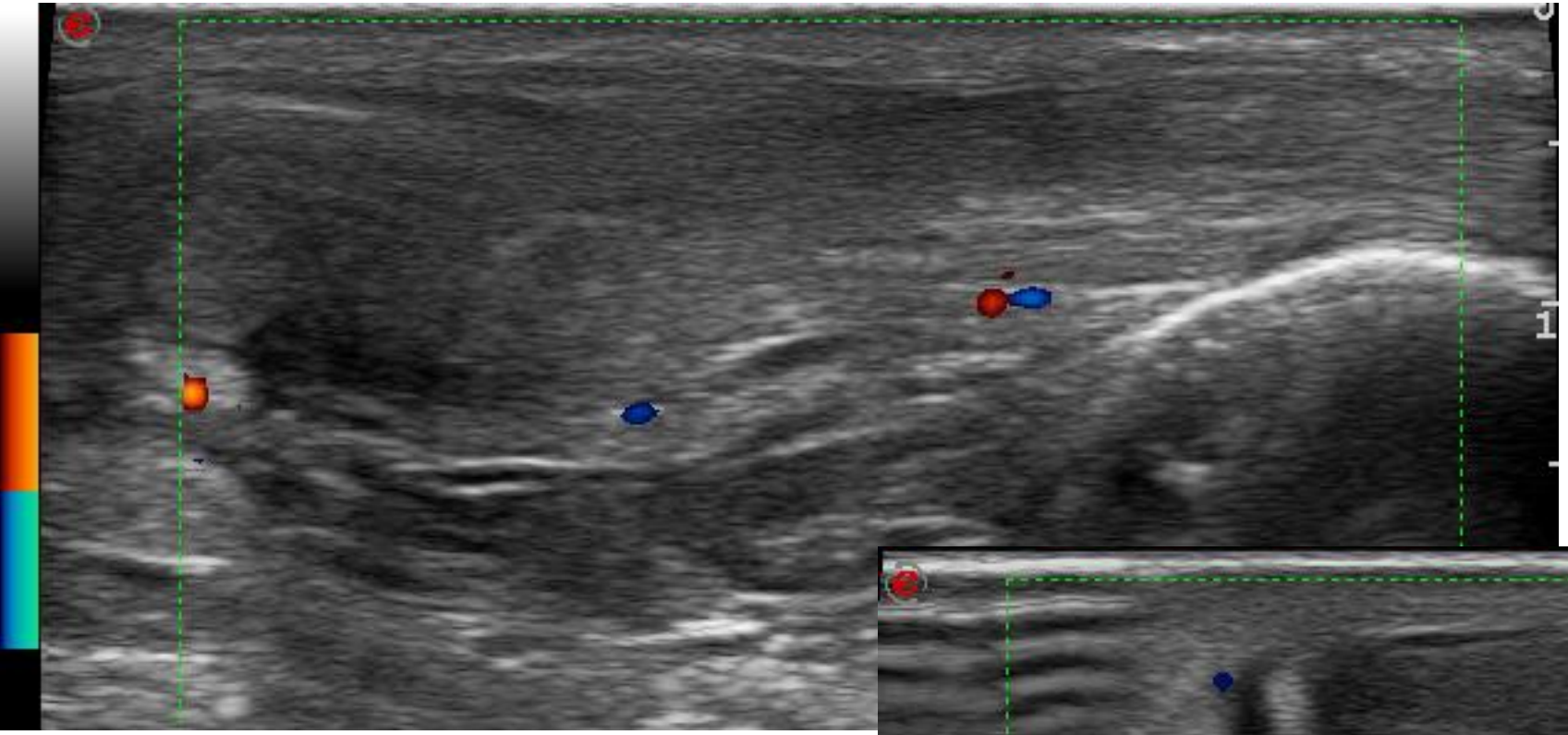
- Does my patient have articular/enthesis pathology?
- If pathology is present, which structure is affected?
- Does the abnormality represent inflammation?
- Has pathology already lead to structural damage?
- Is it rheumatoid arthritis (RA) or osteoarthritis (OA)?
- Is it RA or psoriatic arthritis?
- Is it a pain syndrome, enthesitis, or tear?
- Is it trauma or inflammation?
- Does my patient have gout or CPPD?
- How can I correctly place a needle for aspiration andinjection?
- Does my patient have polymyalgia rheumatica or GCA?
- Is this Sjögren's syndrome?
- Can we assess the lungs with ultrasound?

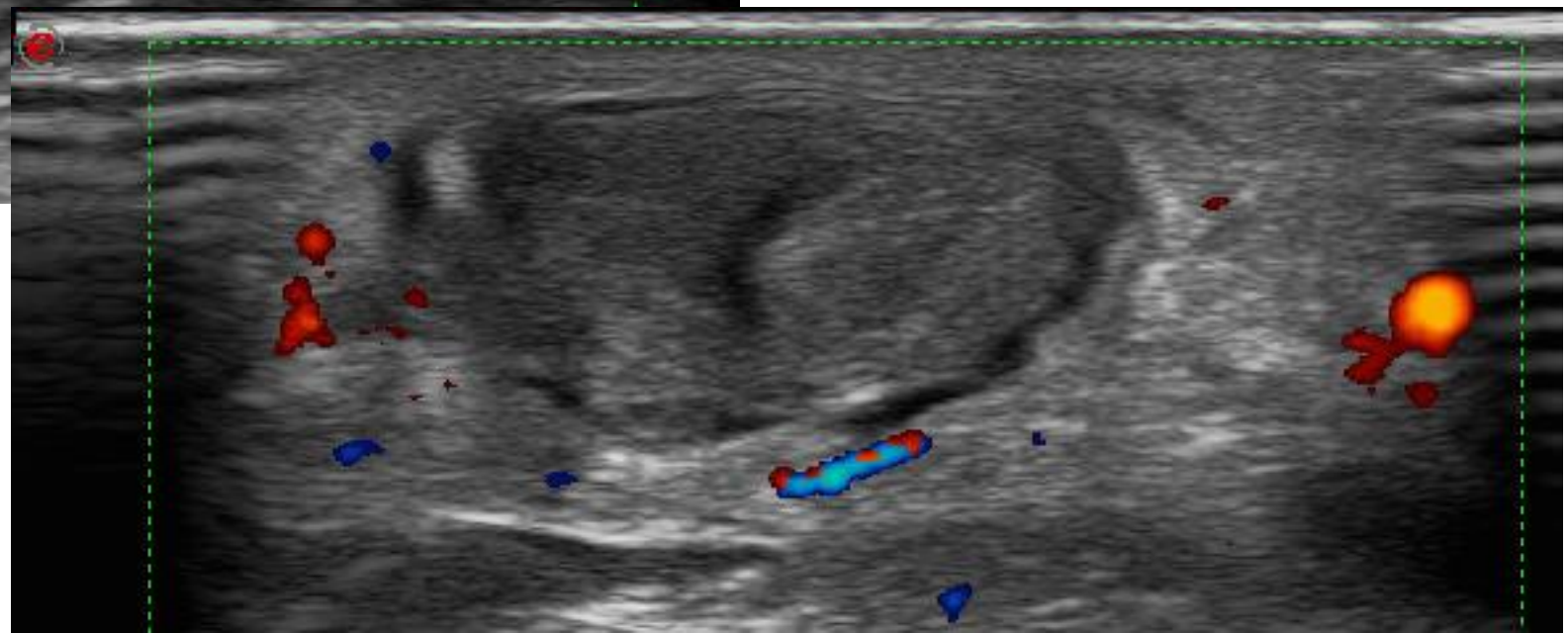
Does my patient have articular/enthesis pathology?



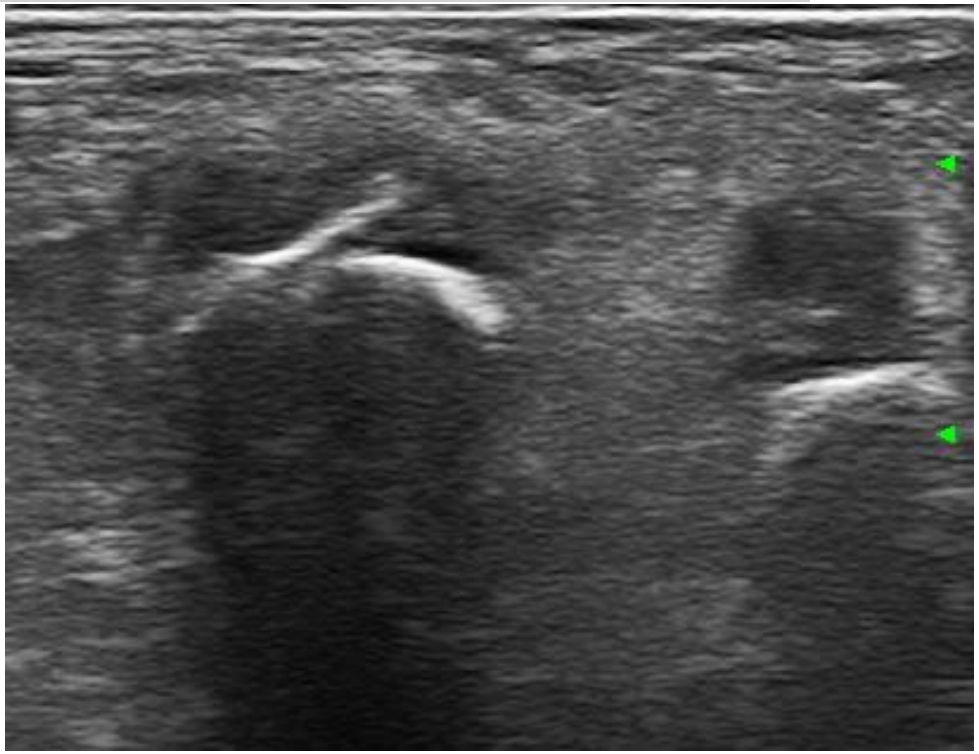


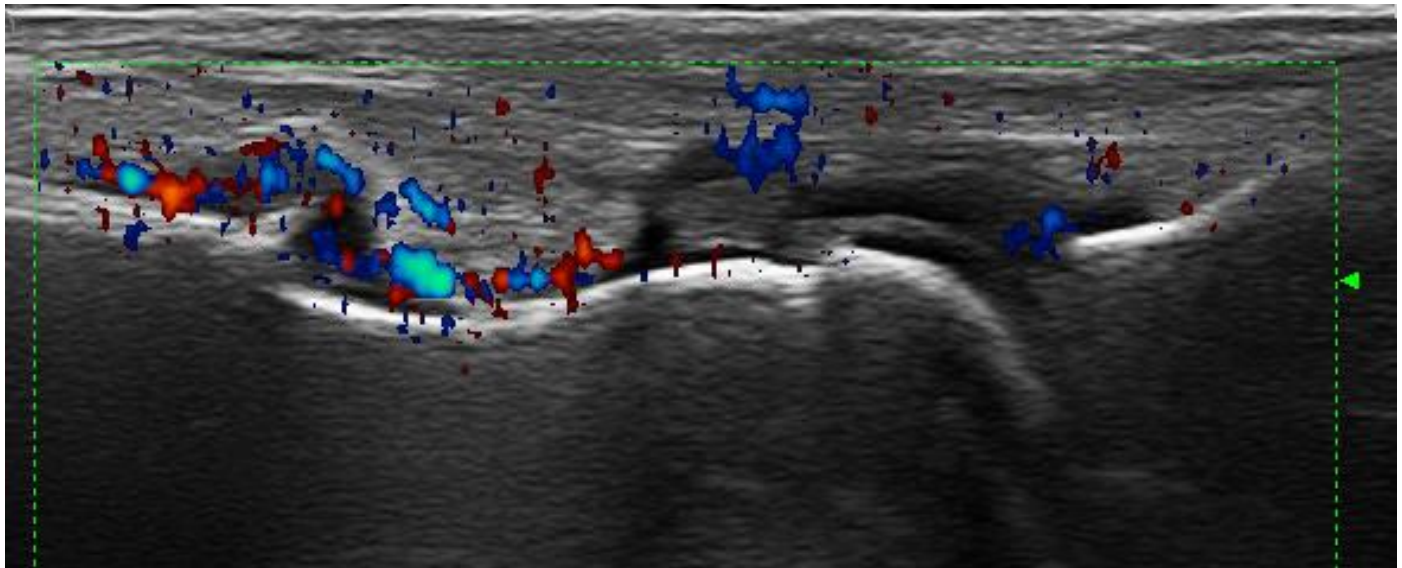
Is it a pain syndrome, enthesitis, or tear?

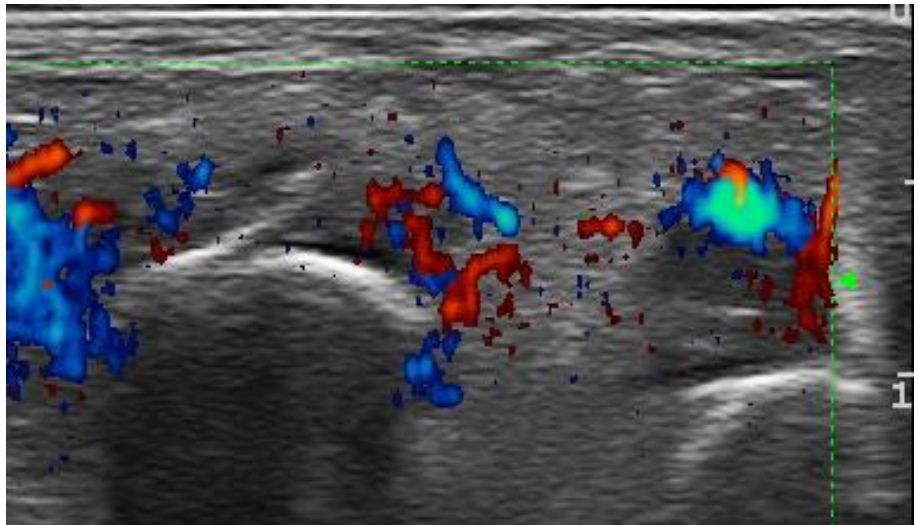




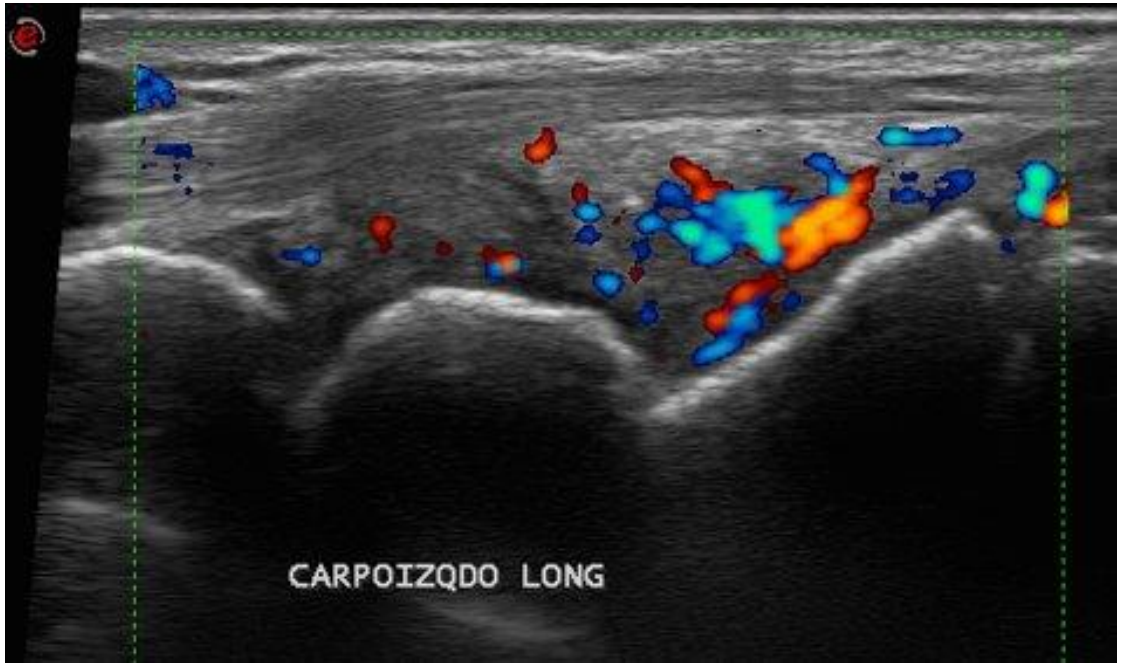
Is it trauma or inflammation?







If pathology is present, which structure is affected?

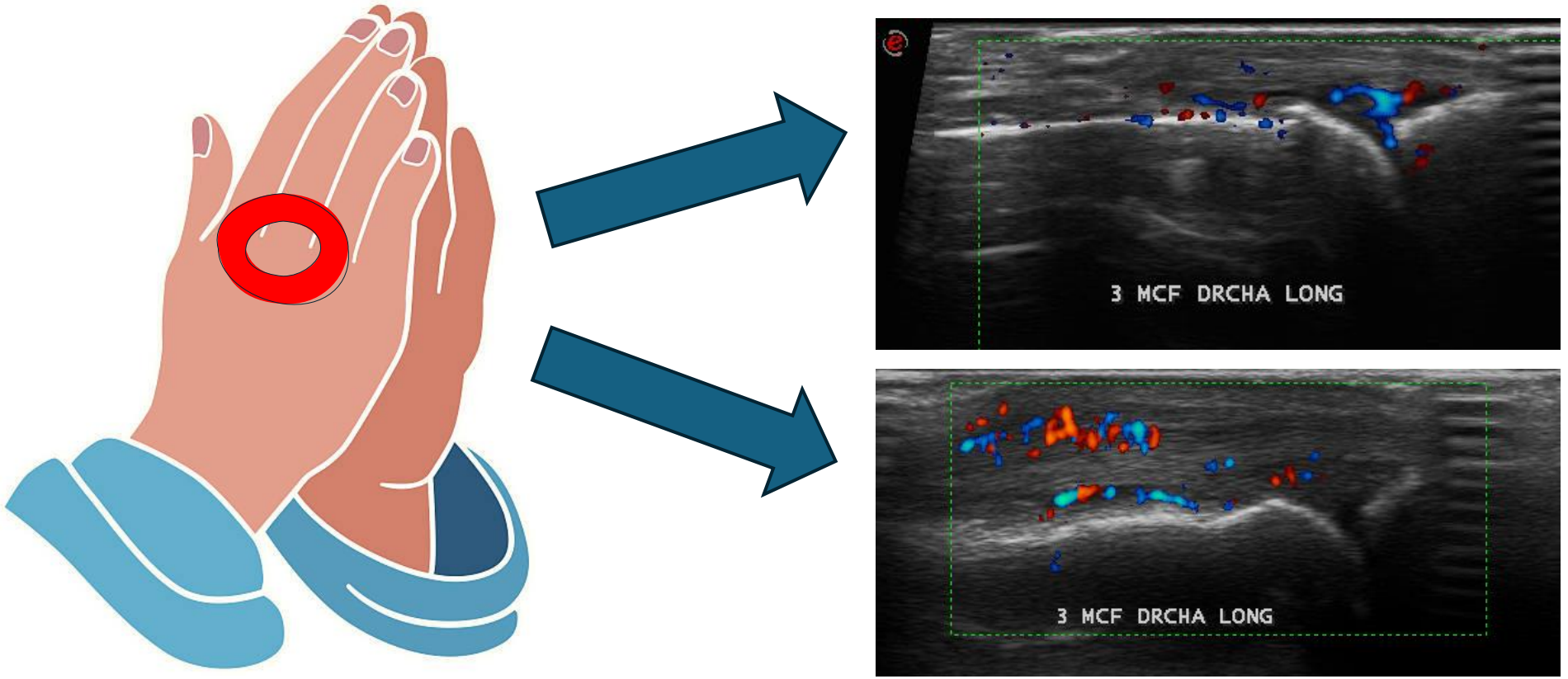


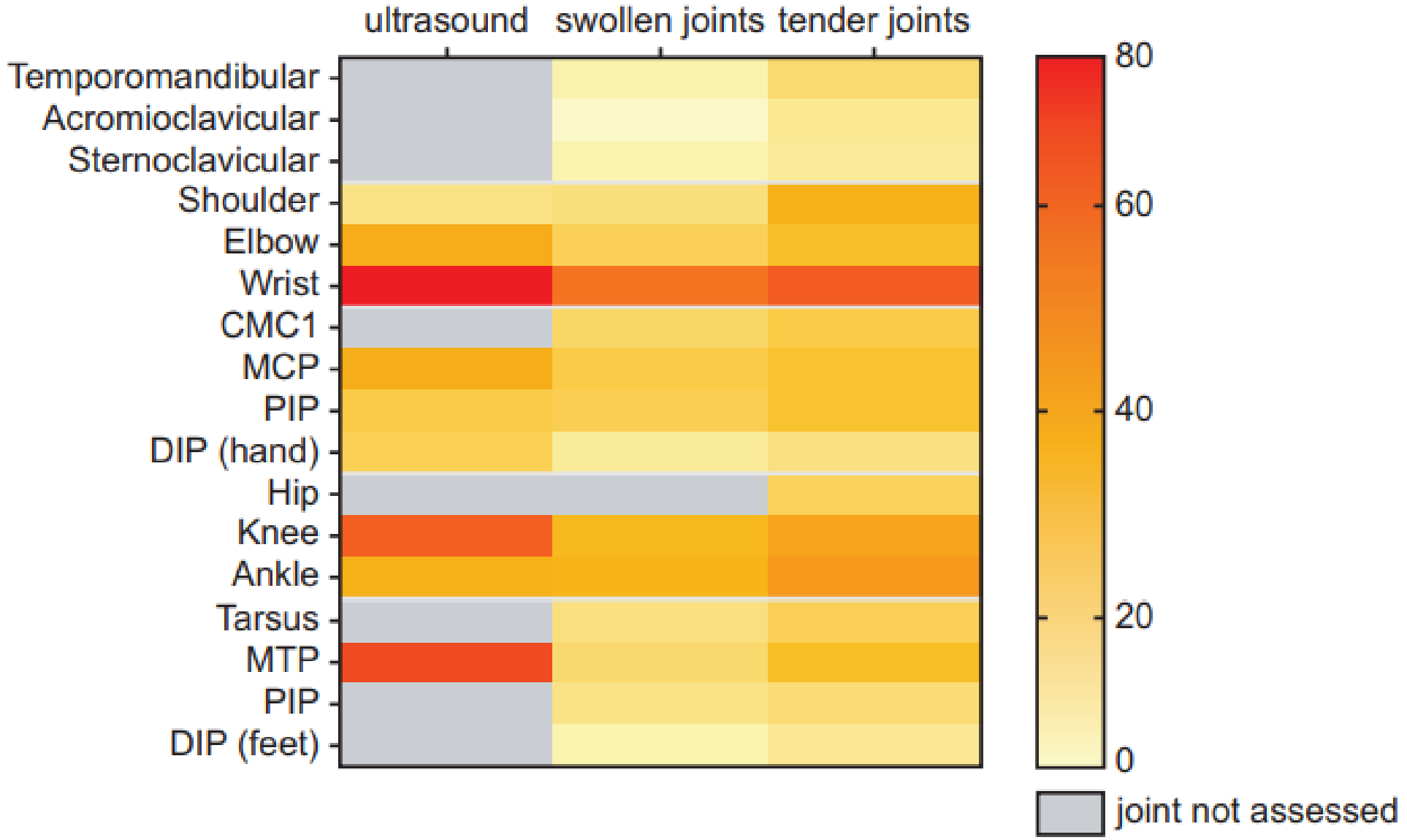
Clin Exp Rheumatol 2018;36:896-899.

What is metacarpophalangeal joint swelling in psoriatic arthritis? Ultrasound findings and reliability assessment.

Macía-Villa C, Falcao S, Gutierrez M, Medina J, Hammer HB, De Miguel E.

Our study identifies that **both IAS and PTI cause MCPj swelling**, where PTI is almost as frequent as IAS





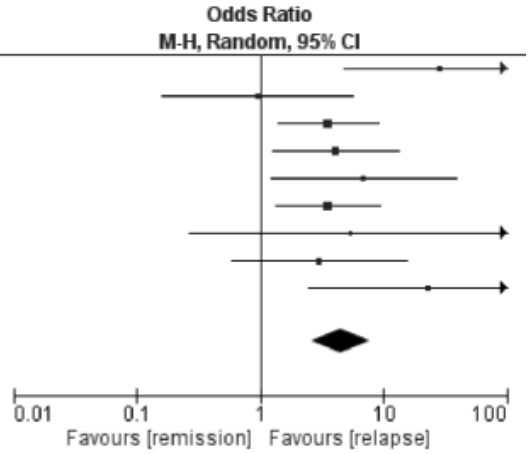
Rheumatology (Oxford). 2022 May 5;61(5):1867-1876.

Has pathology lead to flare or structural damage?

Flare

Study or Subgroup	Power doppler + Events	Total	Power doppler - Events	Total	Weight	Odds Ratio M-H, Random, 95% CI	Year
Scire 2009	12	17	2	26	8.1%	28.80 [4.86, 170.82]	2009
Saleem 2010	4	9	5	11	8.2%	0.96 [0.16, 5.64]	2010
Peluso 2011	16	34	12	60	21.5%	3.56 [1.41, 8.96]	2011
Saleem 2012	20	58	4	35	15.7%	4.08 [1.26, 13.19]	2012
Foltz 2012	4	7	6	37	8.5%	6.89 [1.22, 38.99]	2012
Geng 2014	26	40	11	32	20.0%	3.55 [1.33, 9.42]	2014
Van Der Ven 2014	3	39	0	28	3.2%	5.47 [0.27, 110.16]	2014
Ramirez Garcia 2014	9	17	3	11	9.4%	3.00 [0.59, 15.36]	2014
Iwamoto 2014	8	9	8	31	5.5%	23.00 [2.48, 213.70]	2014
Total (95% CI)		**230**		**271**	**100.0%**	**4.52 [2.61, 7.84]**	
Total events	102		51				

Heterogeneity: Tau² = 0.15; Chi² = 10.15, df = 8 (P = 0.25); I² = 21%
Test for overall effect: Z = 5.37 (P < 0.00001)



X 4

Figure 2. Summary of the association between ultrasonic power Doppler score and risk of flare.

Bone Erosion Progression

B Study or Subgroup	Power doppler + Events	Total	Power doppler - Events	Total	Weight	Odds Ratio M-H, Random, 95% CI	Year
Brown 2008	5	33	5	347	44.0%	12.21 [3.34, 44.73]	2008
Yoshimi 2013	14	17	140	467	46.5%	10.90 [3.08, 38.53]	2013
Ogishima 2014	1	30	1	450	9.5%	15.48 [0.94, 253.88]	2014
Total (95% CI)		**80**		**1264**	**100.0%**	**11.85 [5.01, 28.03]**	
Total events	20		146				

Heterogeneity: Tau² = 0.00; Chi² = 0.06, df = 2 (P = 0.97); I² = 0%
Test for overall effect: Z = 5.63 (P < 0.00001)

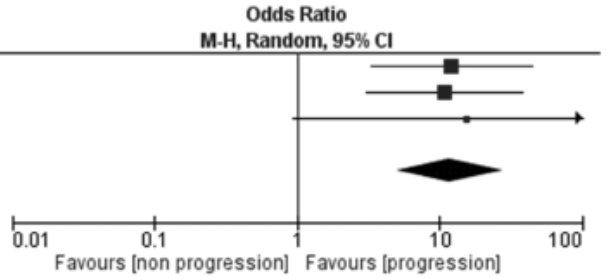


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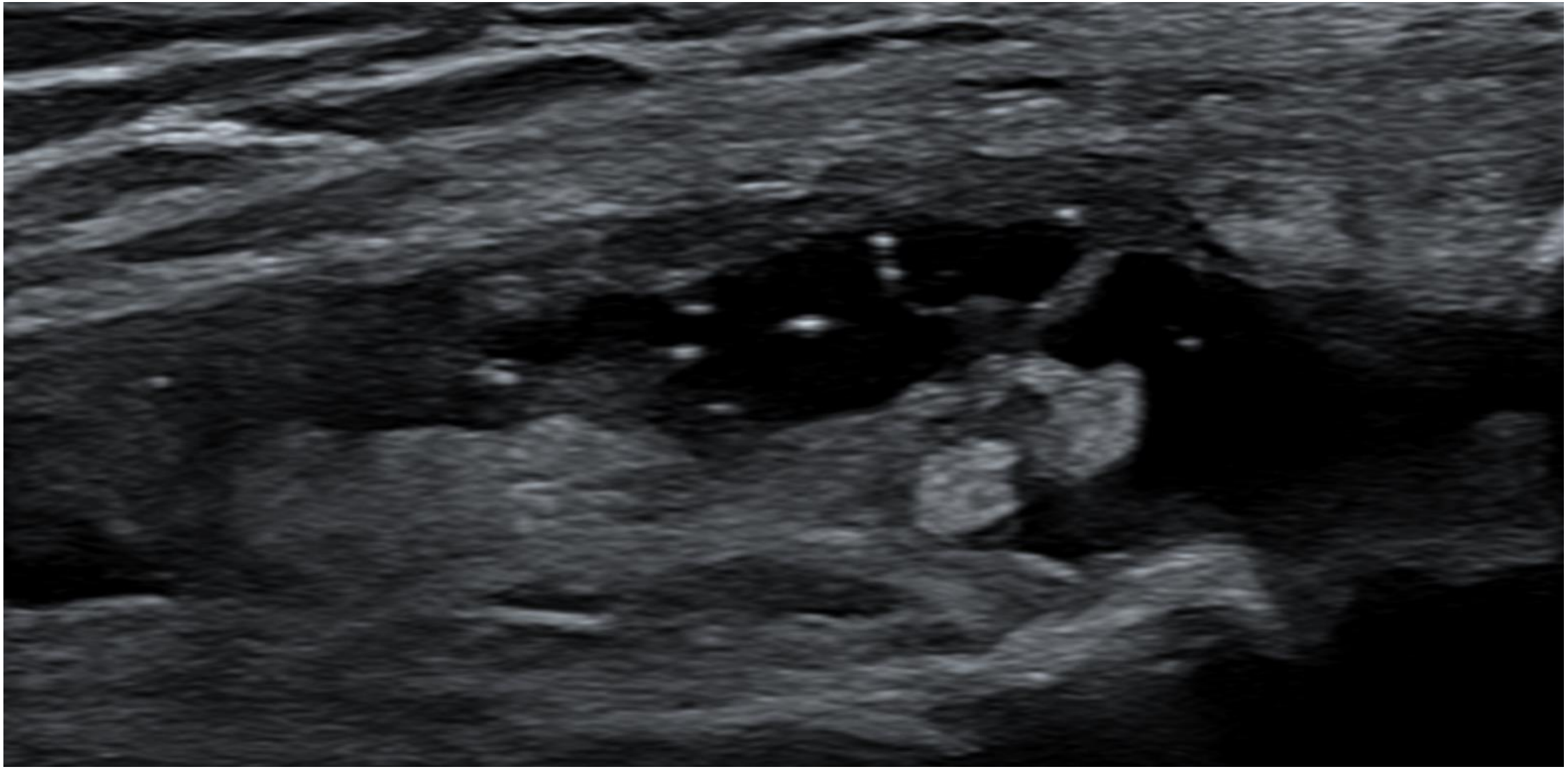
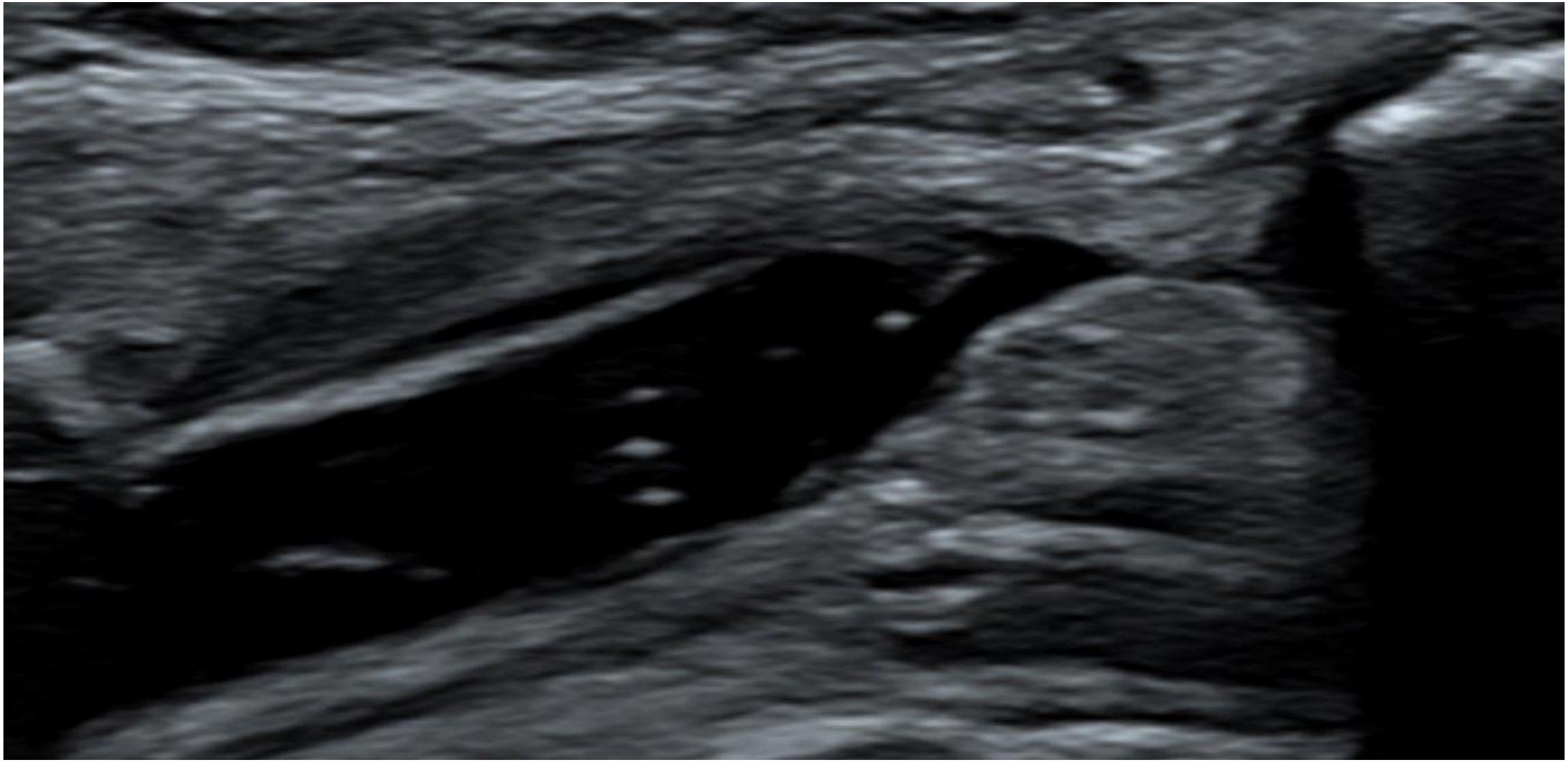
Figure 3. Summary of the association between ultrasonic power Doppler score and risk of progressive bone erosion. A. Patient level. B. Joint level.

J Rheumatol 2016;43;2010-2018

Is it rheumatoid arthritis (RA) or osteoarthritis (OA)?





Ultrasound-detected lumps in synovial fluid, a sonographic finding associated with noninflammatory joint effusion.

Julio Ramírez, et al. Clin Exp Rheumatol 2025

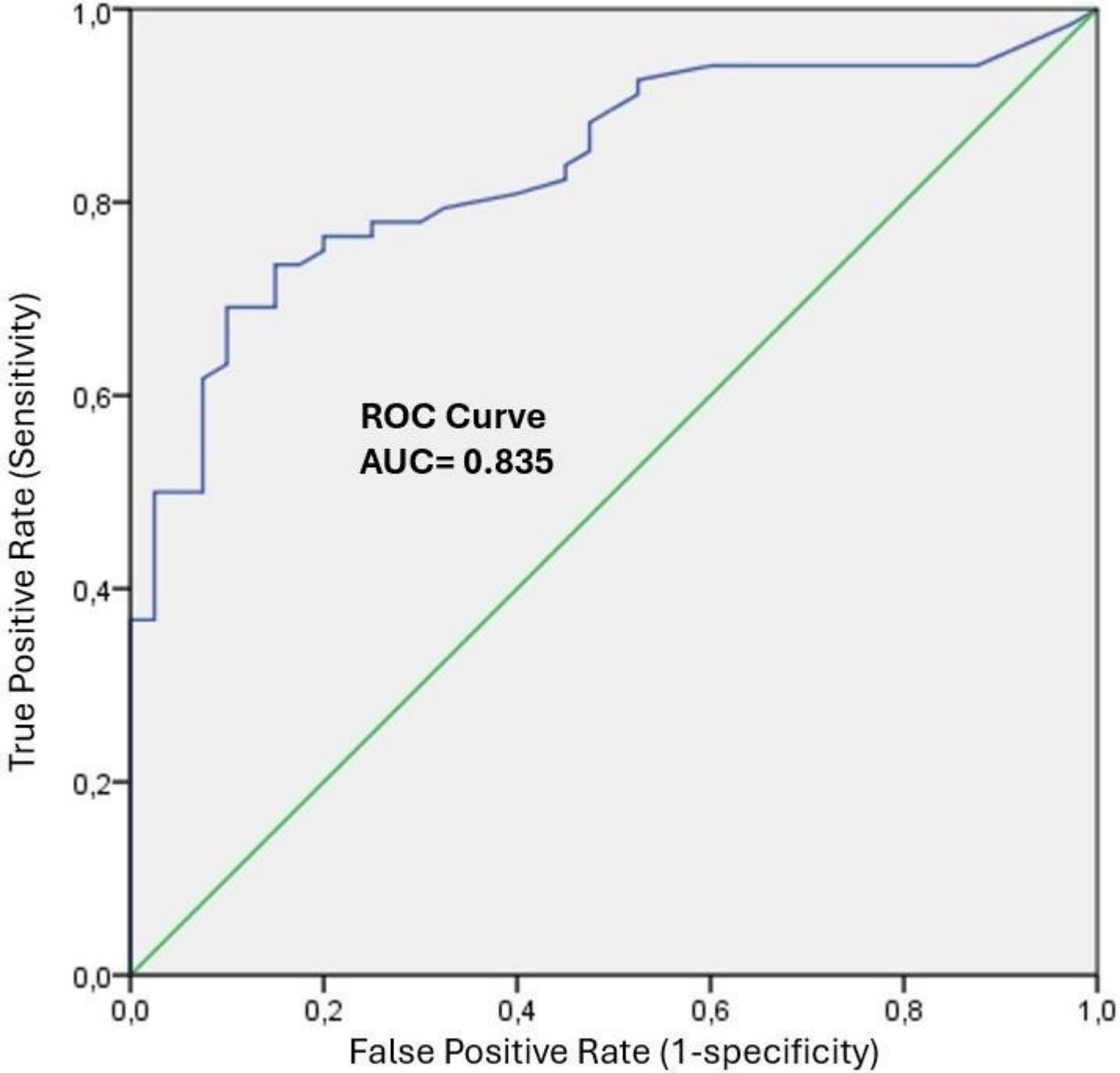
- **Aim: association between US features of synovial fluid and WBC counts in joint effusion.**

- **Cross-sectional study** evaluated US-detected lumps in SF as markers of noninflammatory joint effusion.
- Patients with **crystal deposits were excluded**.

- **108 patients** with synovial effusion underwent US imaging and joint aspiration.

- **US lumps were present in 40 patients (37%), predominantly with noninflammatory SF (85%)**.

- SF with lumps had a lower mean WBC count (**1,043 vs. 8,644 cells/mm³, p = 0.0001**).



US lumps and noninflammatory joint effusion

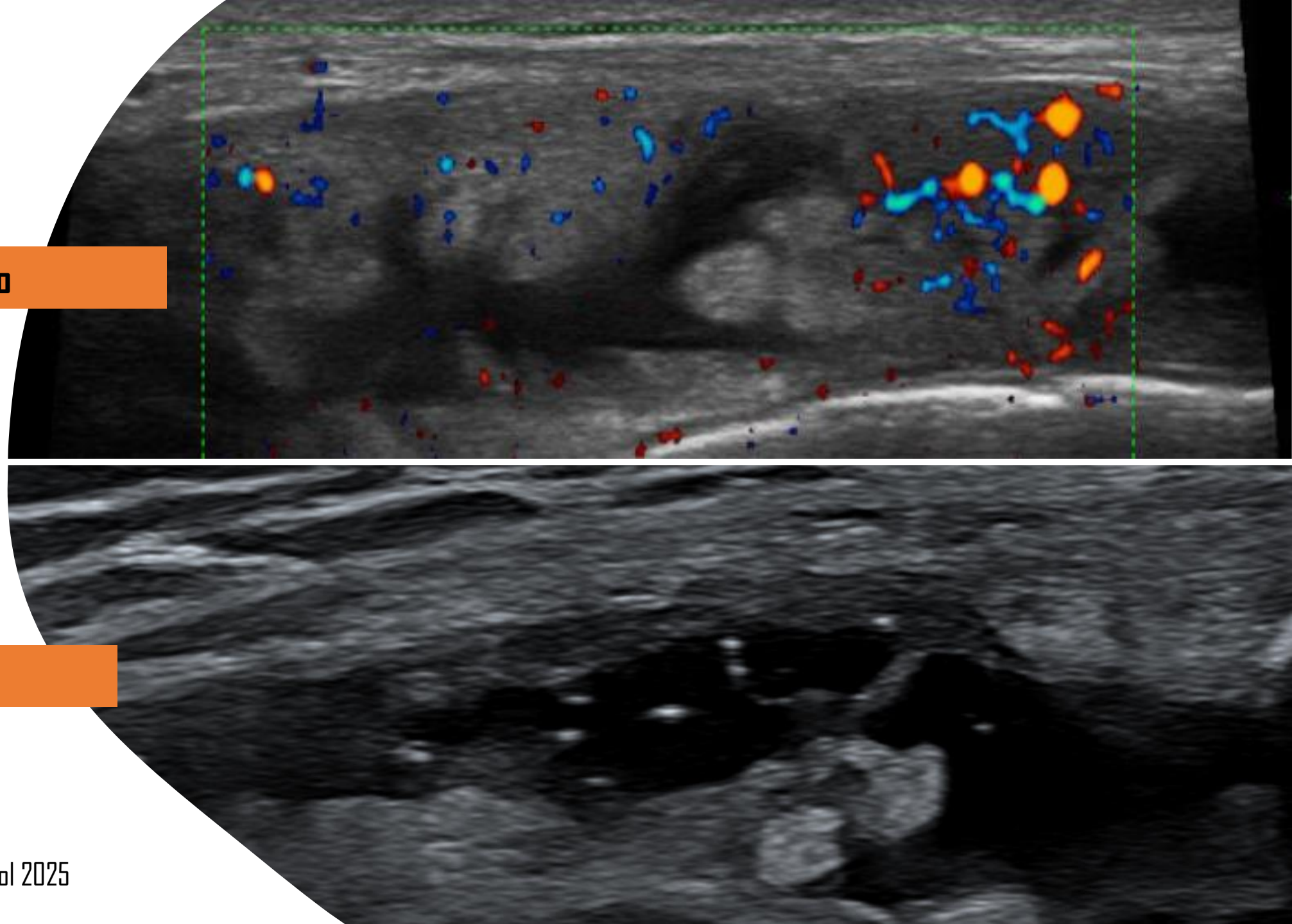
Sensitivity 65.3%

Specificity 89.3%

Positive predictive values 85%

Negative predictive value 73.5%

Ramírez J, et al. Clin Exp Rheumatol 2025

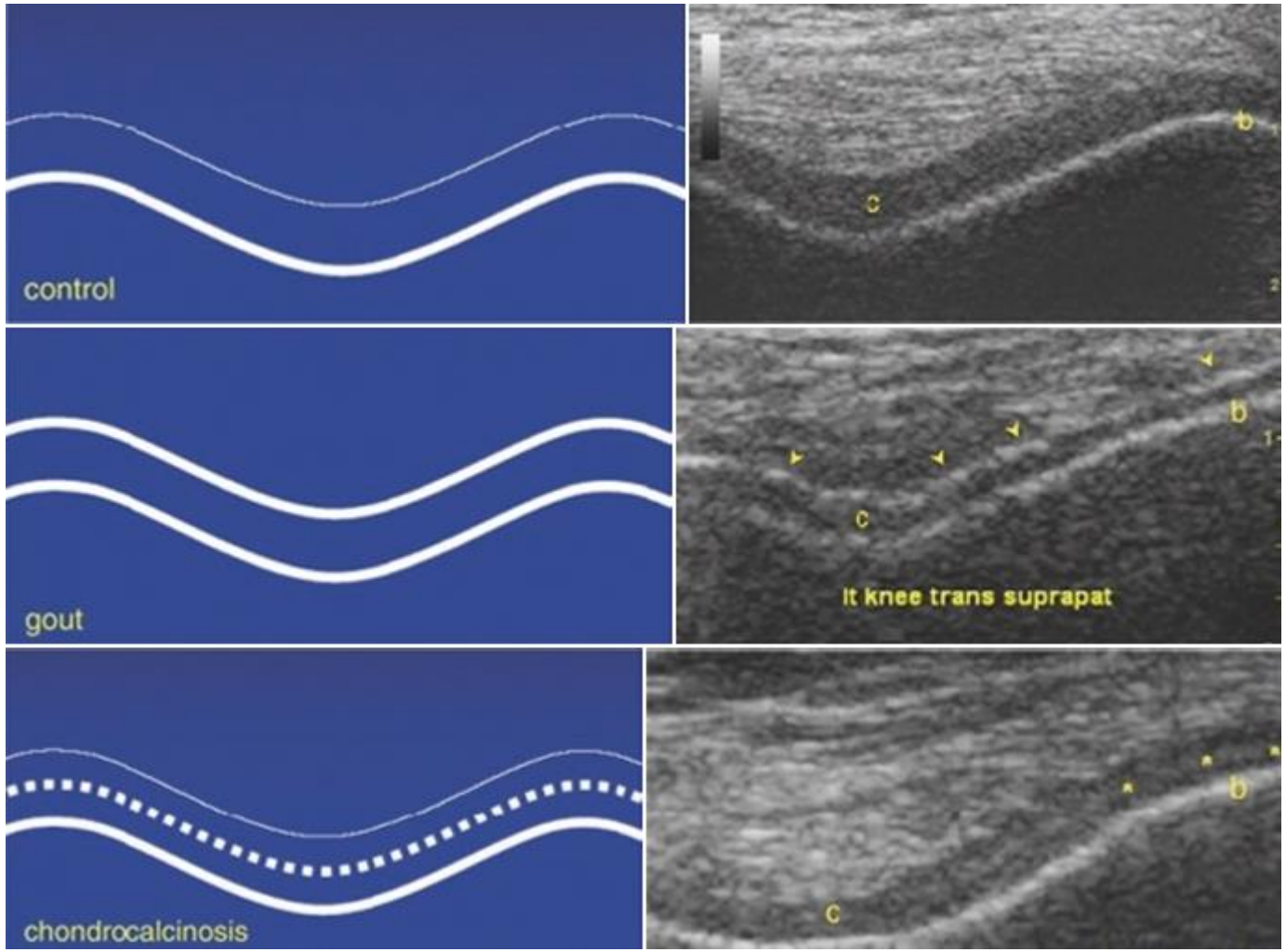


Líquido Inflamatorio

Líquido Mecánico

Ramírez J, et al. Clin Exp Rheumatol 2025

Does my patient have gout or CPPD?



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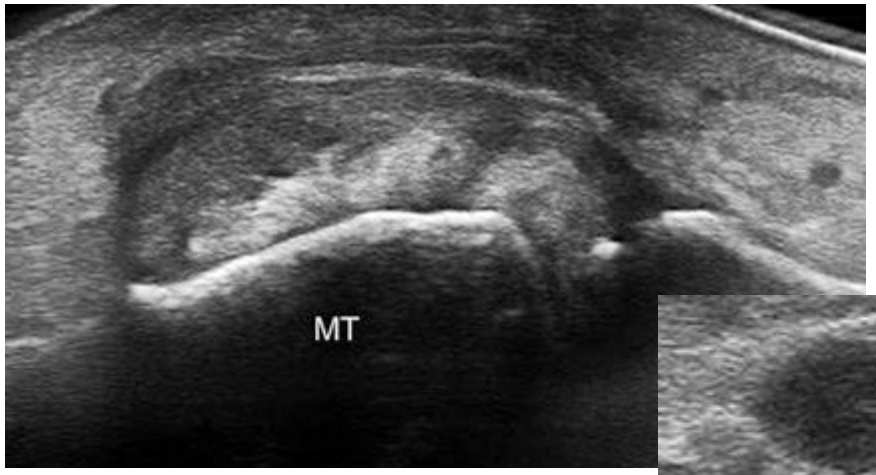
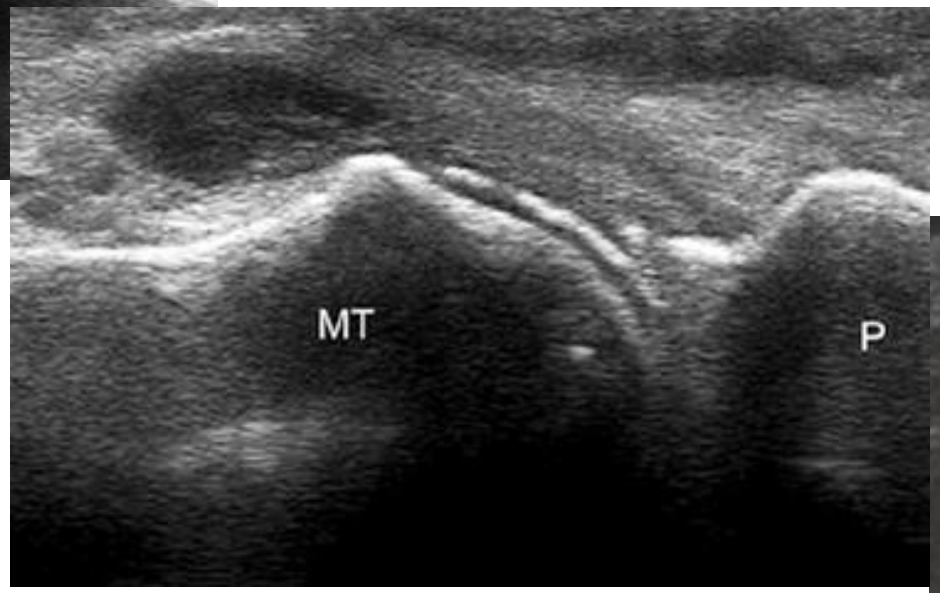
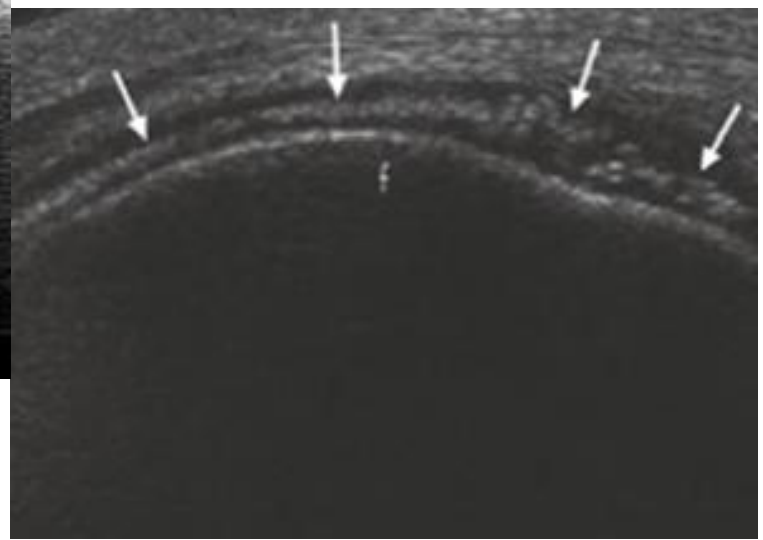
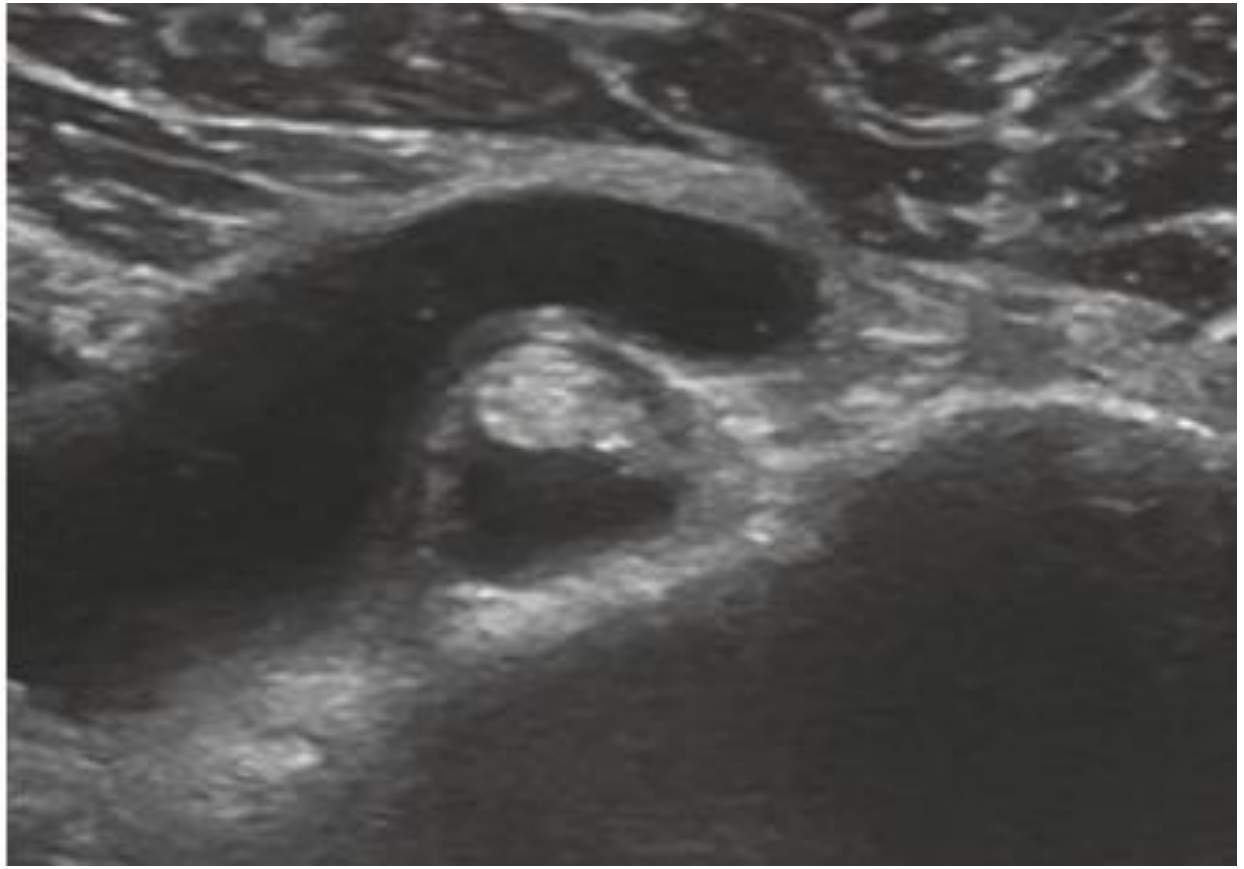
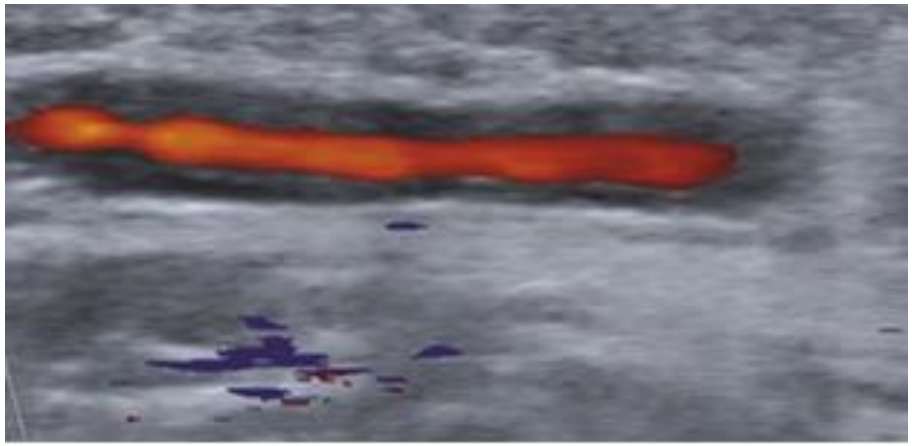


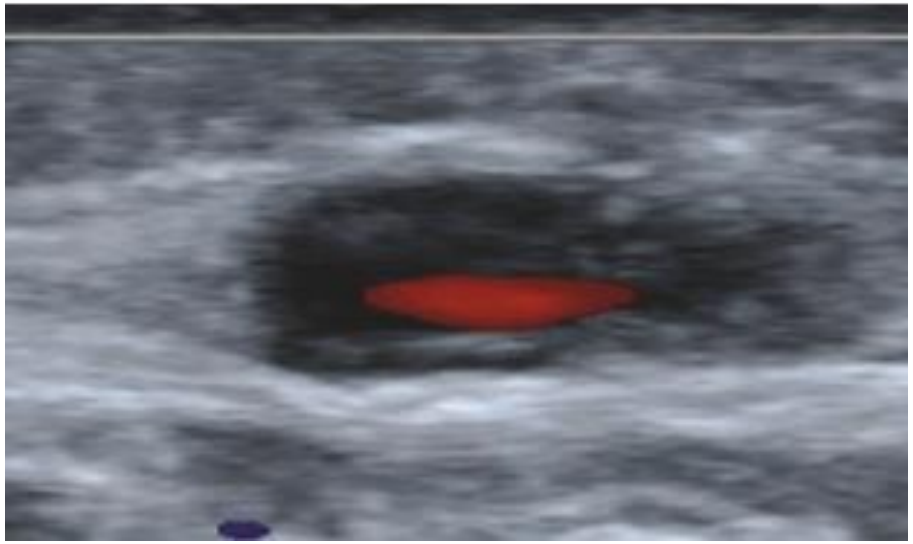




Does my patient have polymyalgia rheumatica or GCA?

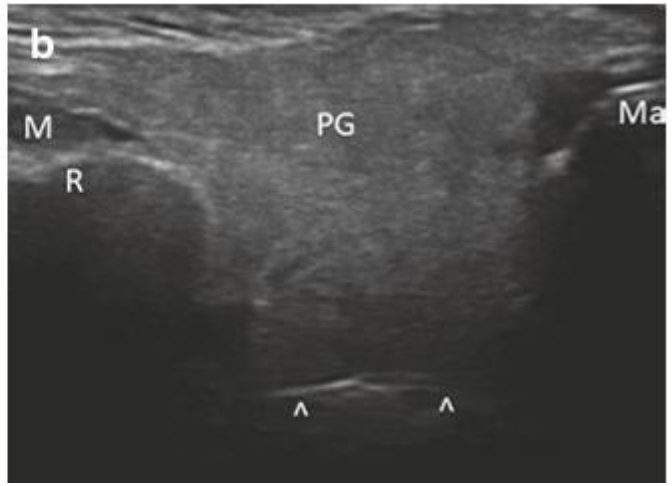


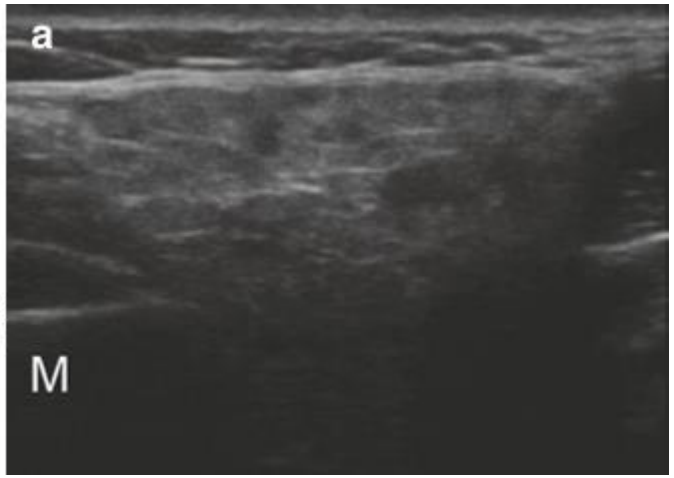


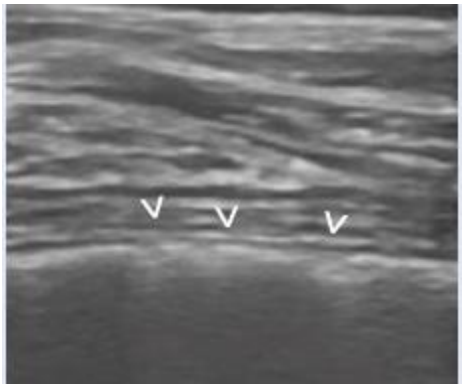


Is this Sjögren's syndrome?

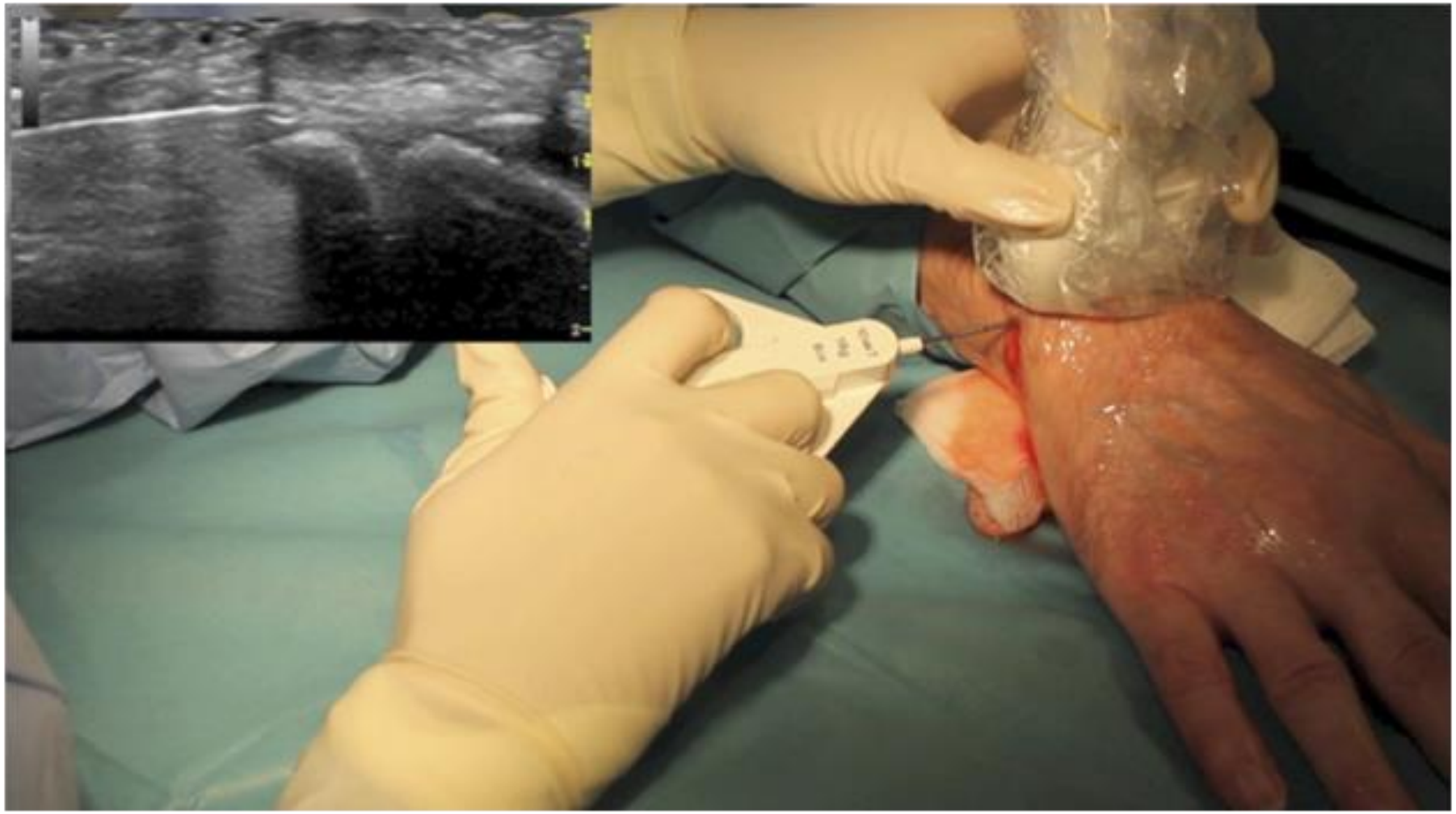
Can we assess the lungs with ultrasound?







How can I correctly place a needle for aspiration and injection or biopsy?



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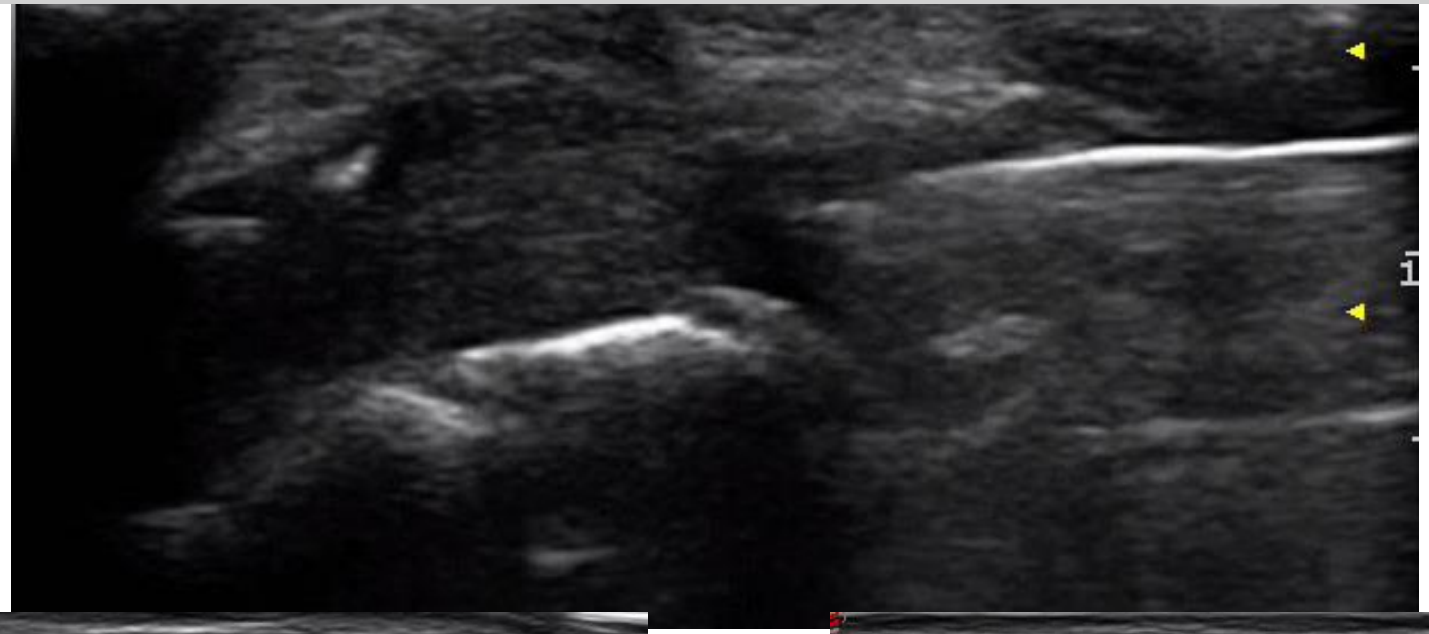
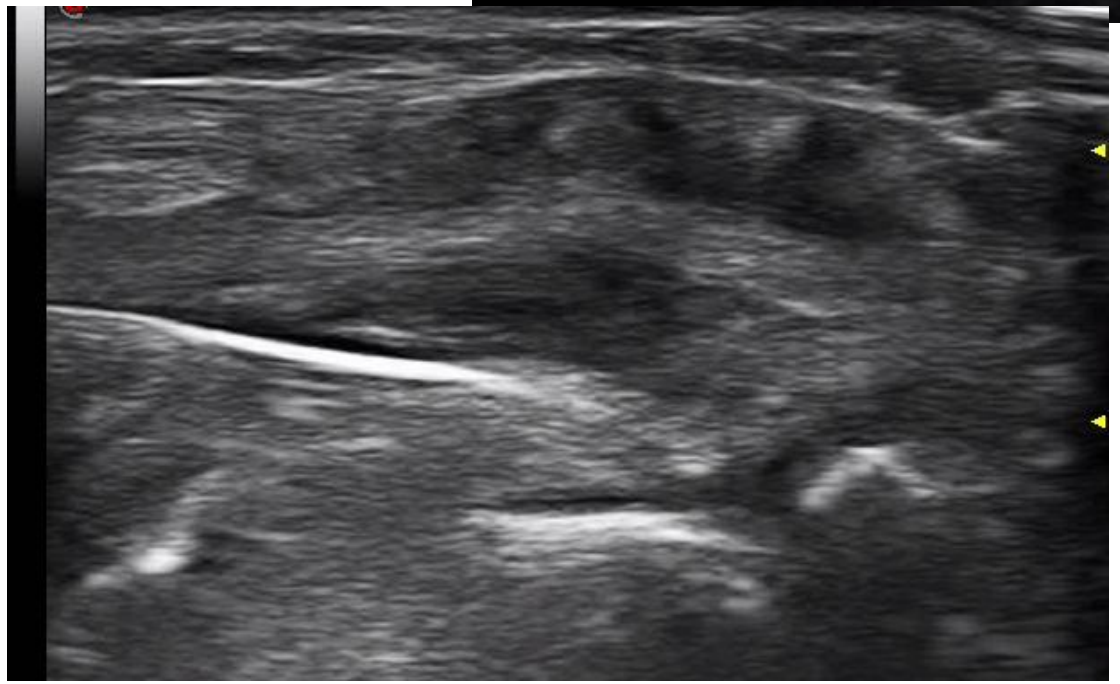
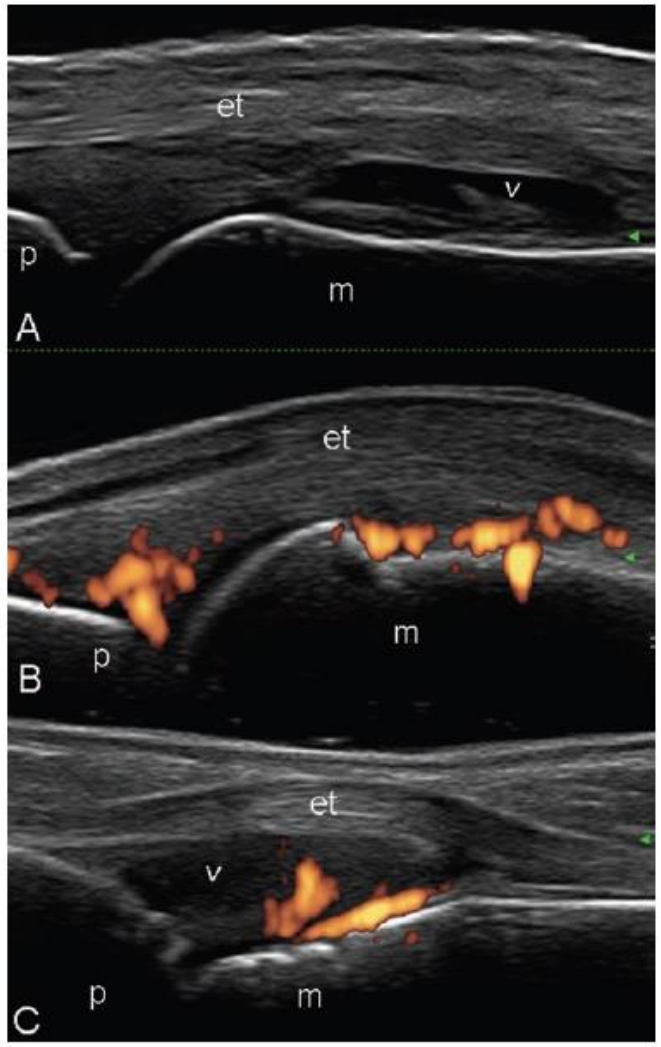


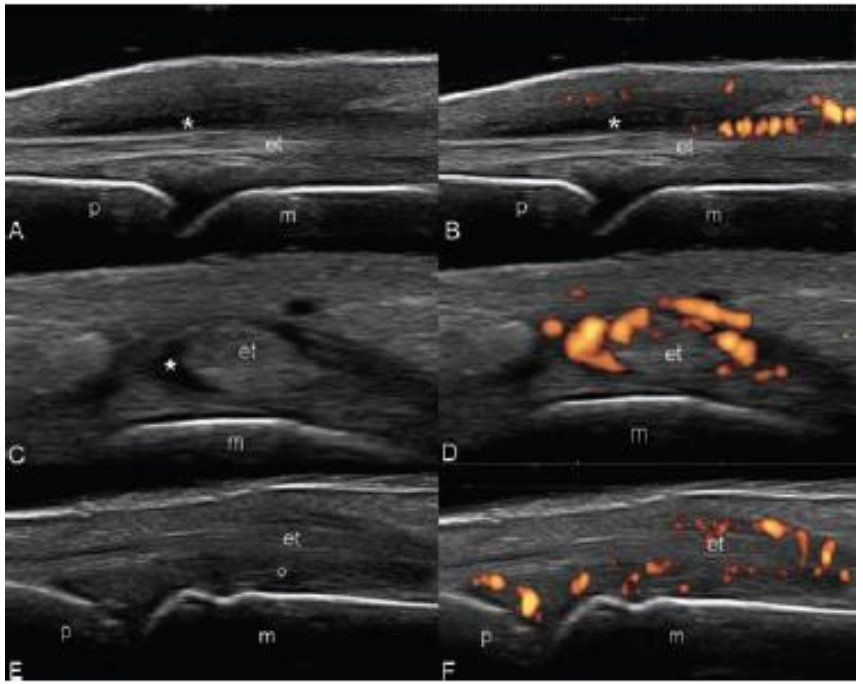


Is it RA or psoriatic arthritis?

RA



PsA

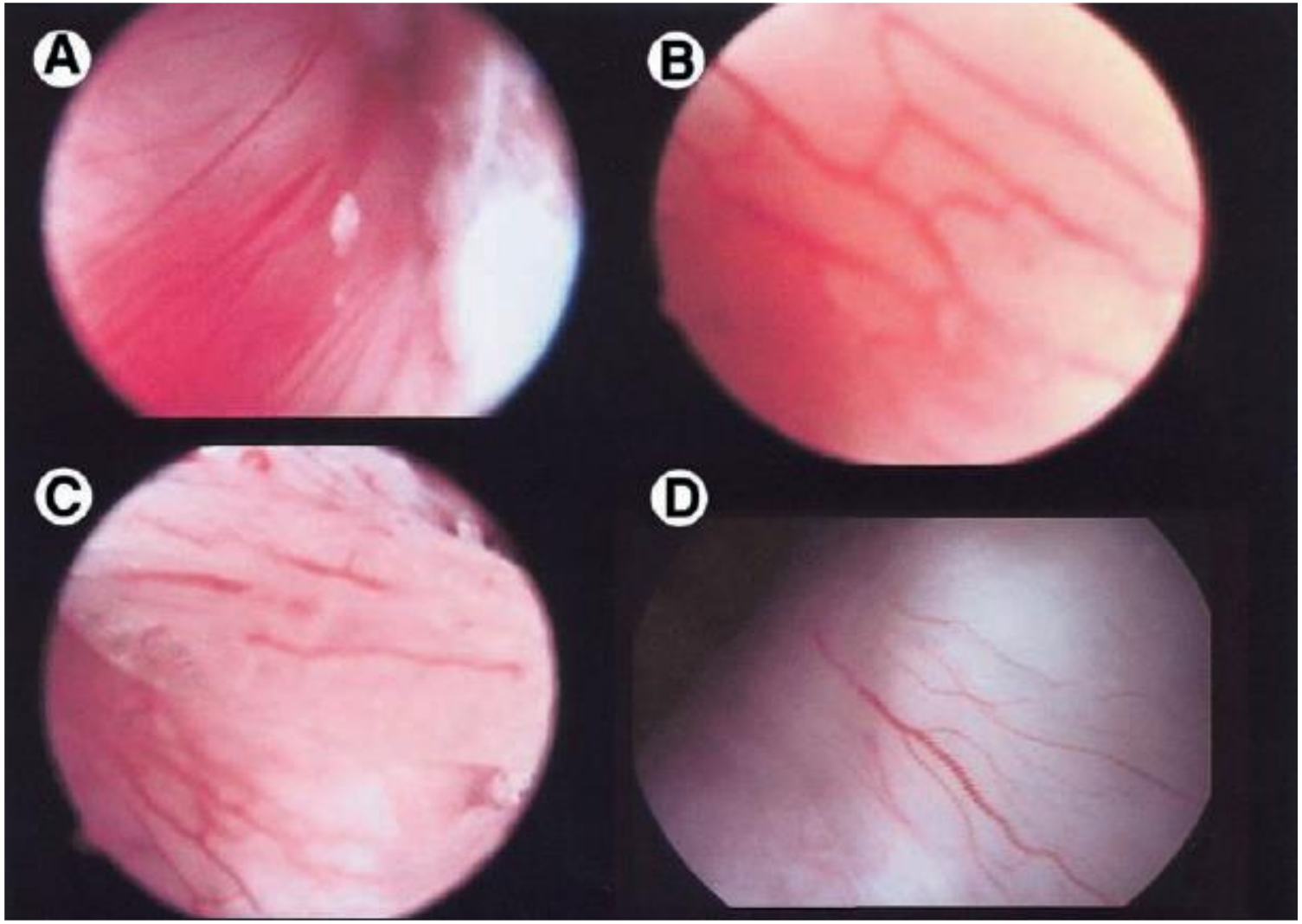


Differential diagnosis between rheumatoid arthritis and psoriatic arthritis: the value of ultrasound findings at metacarpophalangeal joints level

Marwin Gutierrez, Emilio Filippucci, Fausto Salaffi, Luca Di Geso, Walter Grassi

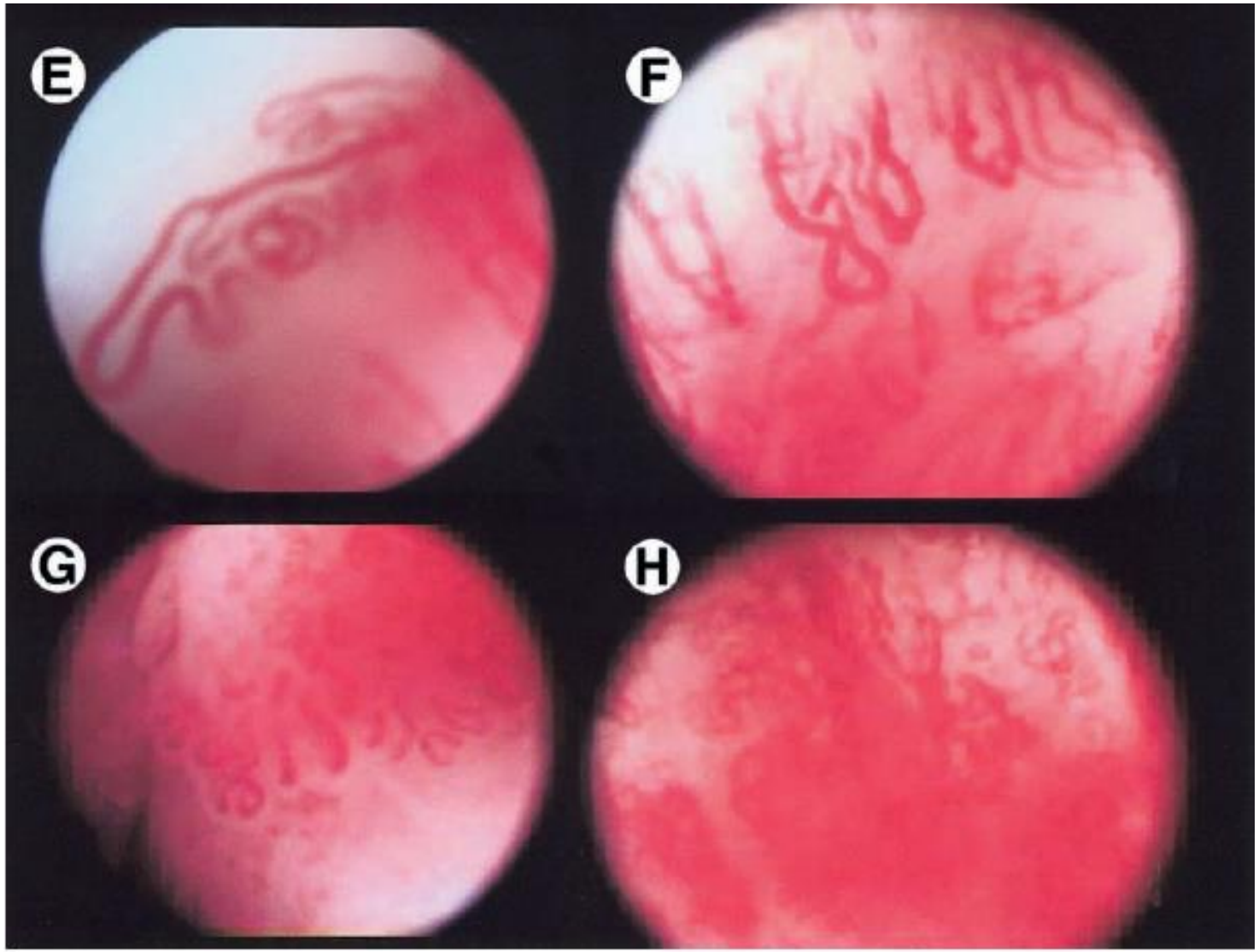
Ann Rheum Dis 2011;**70**:1111–1114. doi:10.1136/ard.2010.147272

Rheumatoid Arthritis



Cortesía del Dr Cañete

Psoriatic Arthritis



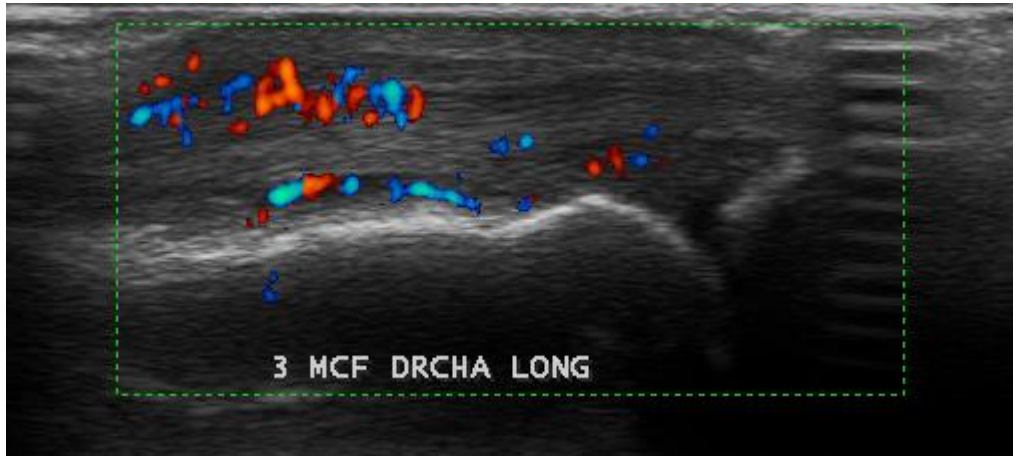
Cortesía del Dr Cañete

Clin Exp Rheumatol. 2016

Differentiation between early rheumatoid and early psoriatic arthritis by the ultrasonographic study of the synovio-entheseal complex of the small joints of the hands.

Zabotti A[1], Salvin S[1], Quartuccio L[1], De Vita S[2].

	Early AR (34)	Early Aps (26)	p
US sinovitis	91.1%	59.6%	0.0001
Peritendon inflammation	2.5%	54.1%	0.0001
Soft tissue oedema	1.8%	72.6%	0.0002



J Ramírez, JD Cañete (archivo de imágenes de la Unidad de Artritis, del Hospital Clínic.)

Proliferative globular Synovitis, an Ultrasound pattern associated to seropositive Rheumatoid Arthritis.

Ramírez J[I], Azuaga-Piñango AB[I], Frade-Sosa B[I], Gumucio-Sanguino R[I], Cajiao-Sanchez K[I], Mandelikova S[I], Ruiz-Esquide V[I], Castellanos-Moreira Raúl[I], Sanmartí R[I], Cañete JD[I]

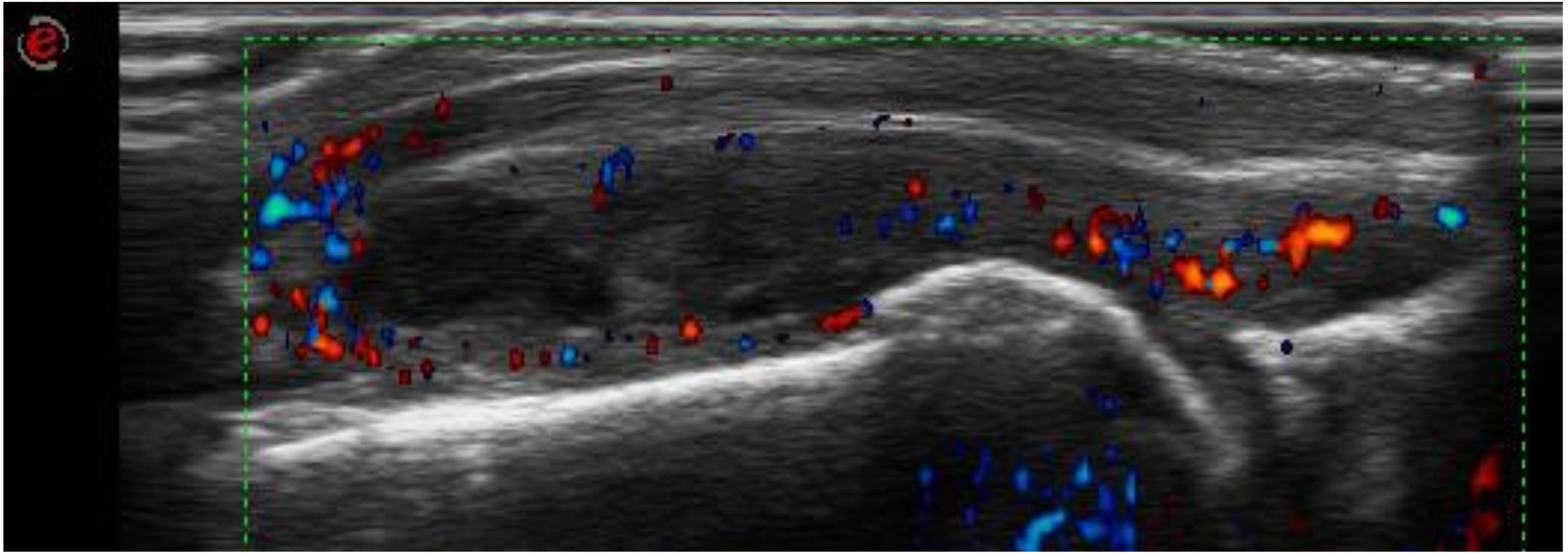
Introduction

The aim of this study was to analyze differences in the US synovial pattern among patients with seropositive and seronegative RA

Secondly, we proposed to assess if proliferative globular synovitis was associated to the presence of autoantibodies

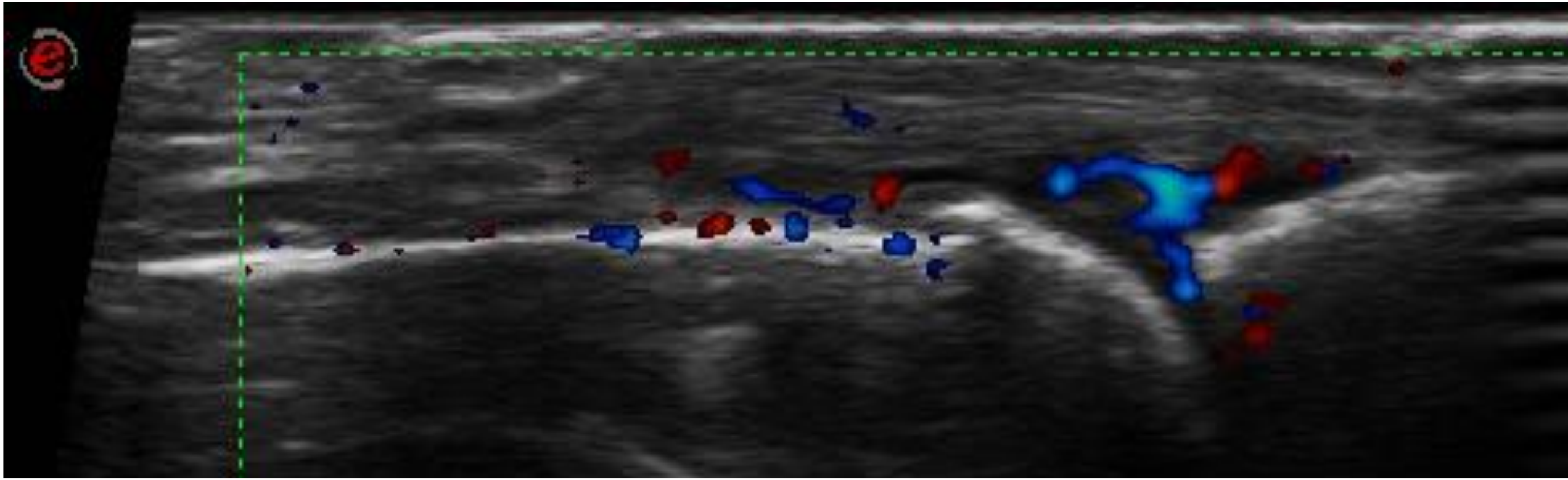
Ramírez J, Azuaga-Piñango AB, et al. Clin Exp Rheumatol. 2022 May;40(5):960-966.

Proliferative/ globular/ balloon-shaped pattern



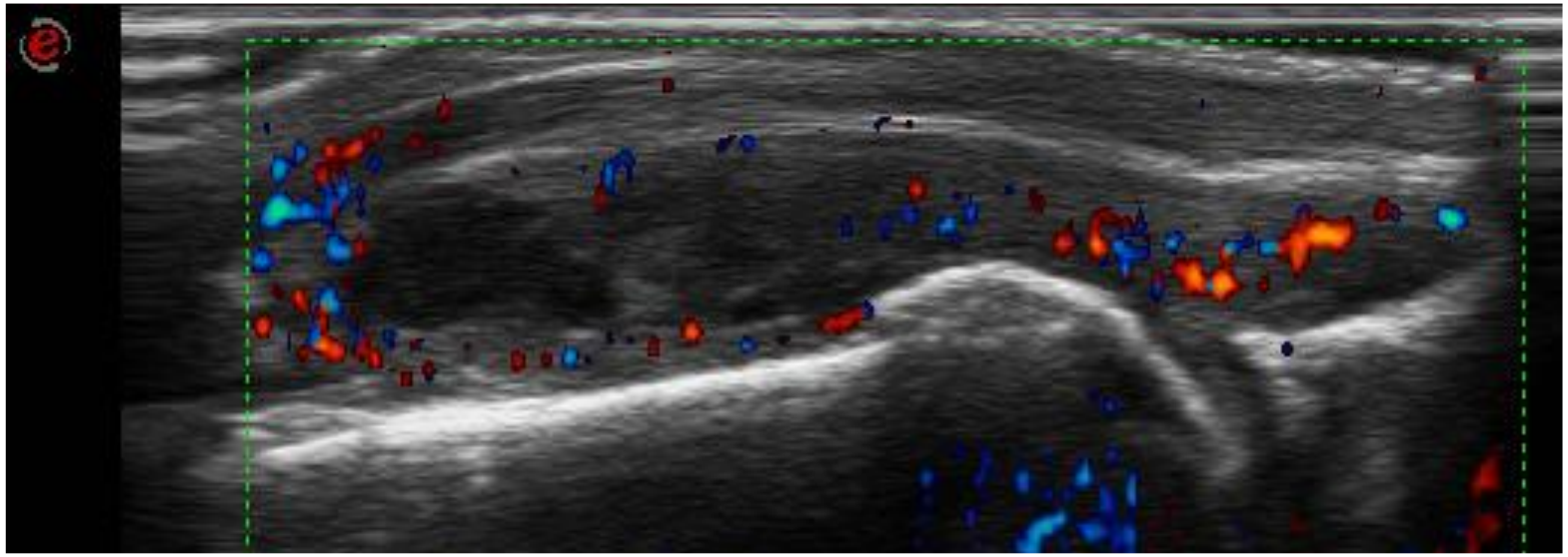
Ramírez J, Azuaga-Piñango AB, et al. Clin Exp Rheumatol. 2022 May;40(5):960-966.

Flat synovial pattern

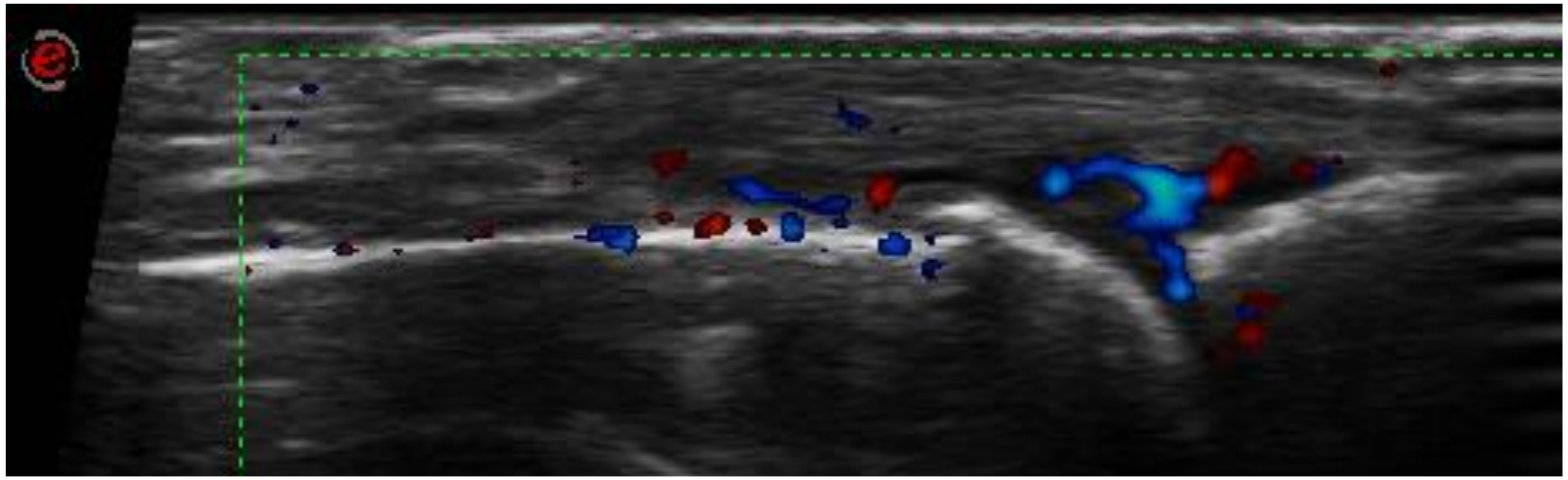


Ramírez J, Azuaga-Piñango AB, et al. Clin Exp Rheumatol. 2022 May;40(5):960-966.

Baseline characteristics: 205 patients



49,2% HS≥2+PD

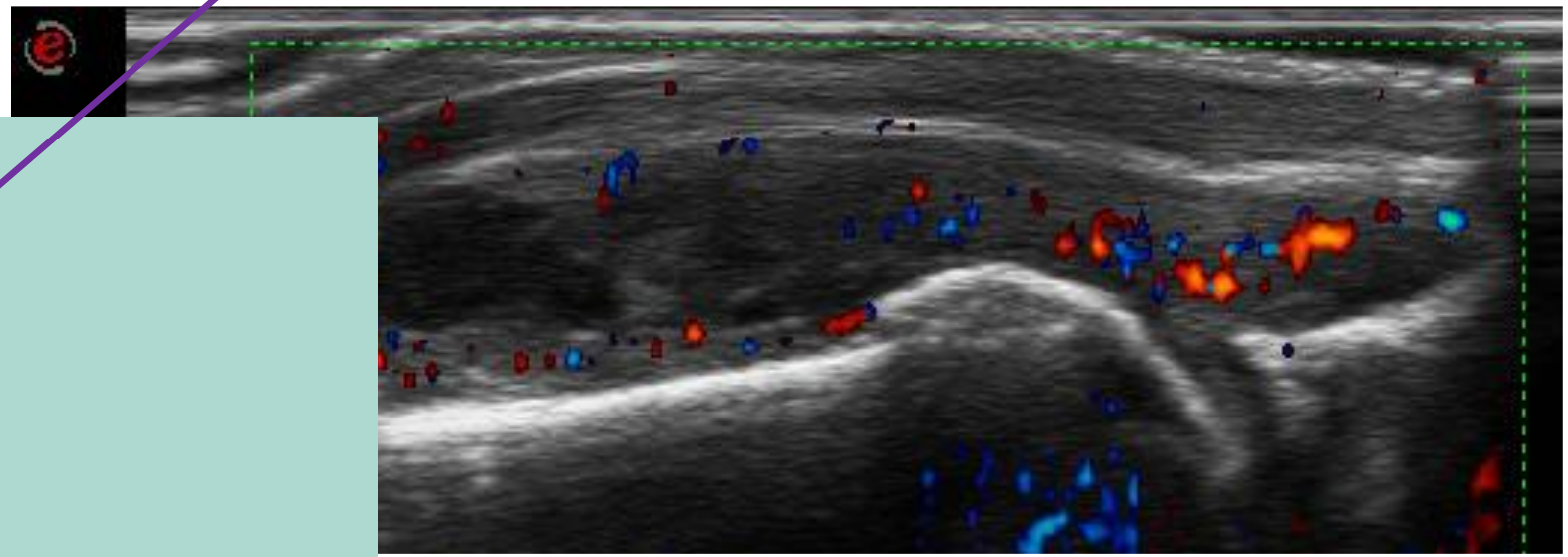


HS≥2+PD

55,5% Sero+RA 16,1% Sero-RA

Ramírez J, Azuaga-Piñango AB, et al. Clin Exp Rheumatol. 2022 May;40(5):960-966.

Proliferative Synovitis (SH≥II+ PD)



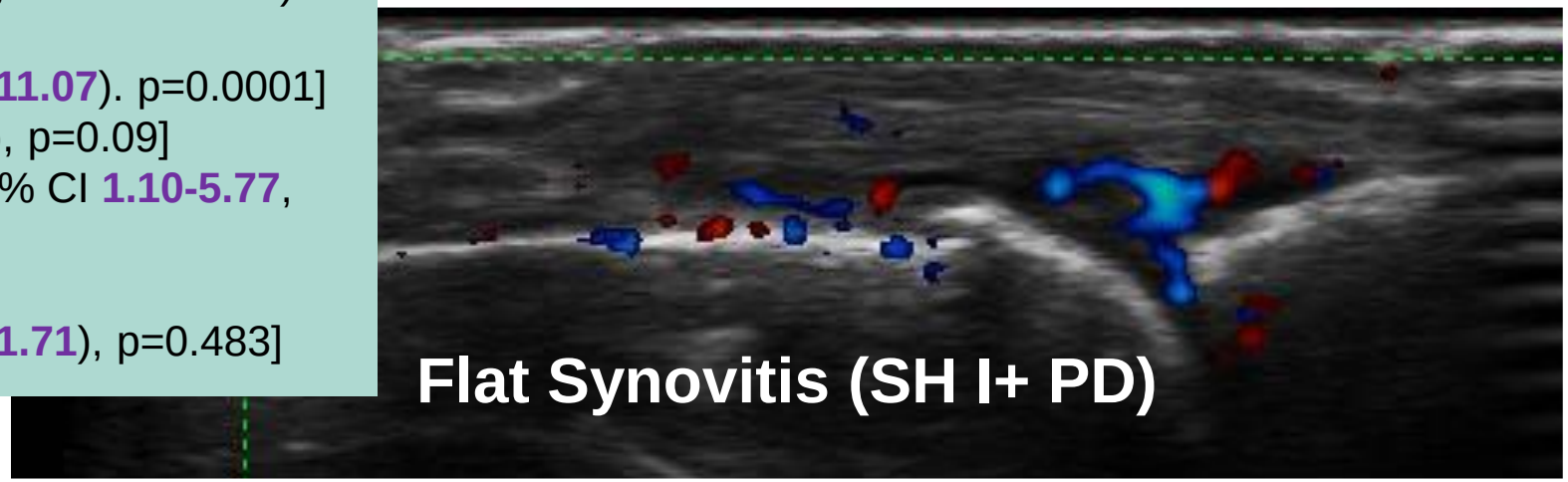
Clinical features
- time of evolution
- smoking
- erosions
- DAS28-CRP

Serological (RF, ACPA, CRP)

Therapy (csDMARDs, bDMARDs,corticosteroids)

Erosions [**OR 4.90** CI 95%(**2.17-11.07**). p=0.0001]
ACPA [**OR 3.5** CI 95%(**1.39-10.7**), p=0.09]
Change of therapy (**OR 2.60**, 95% CI **1.10-5.77**, p=0.018).

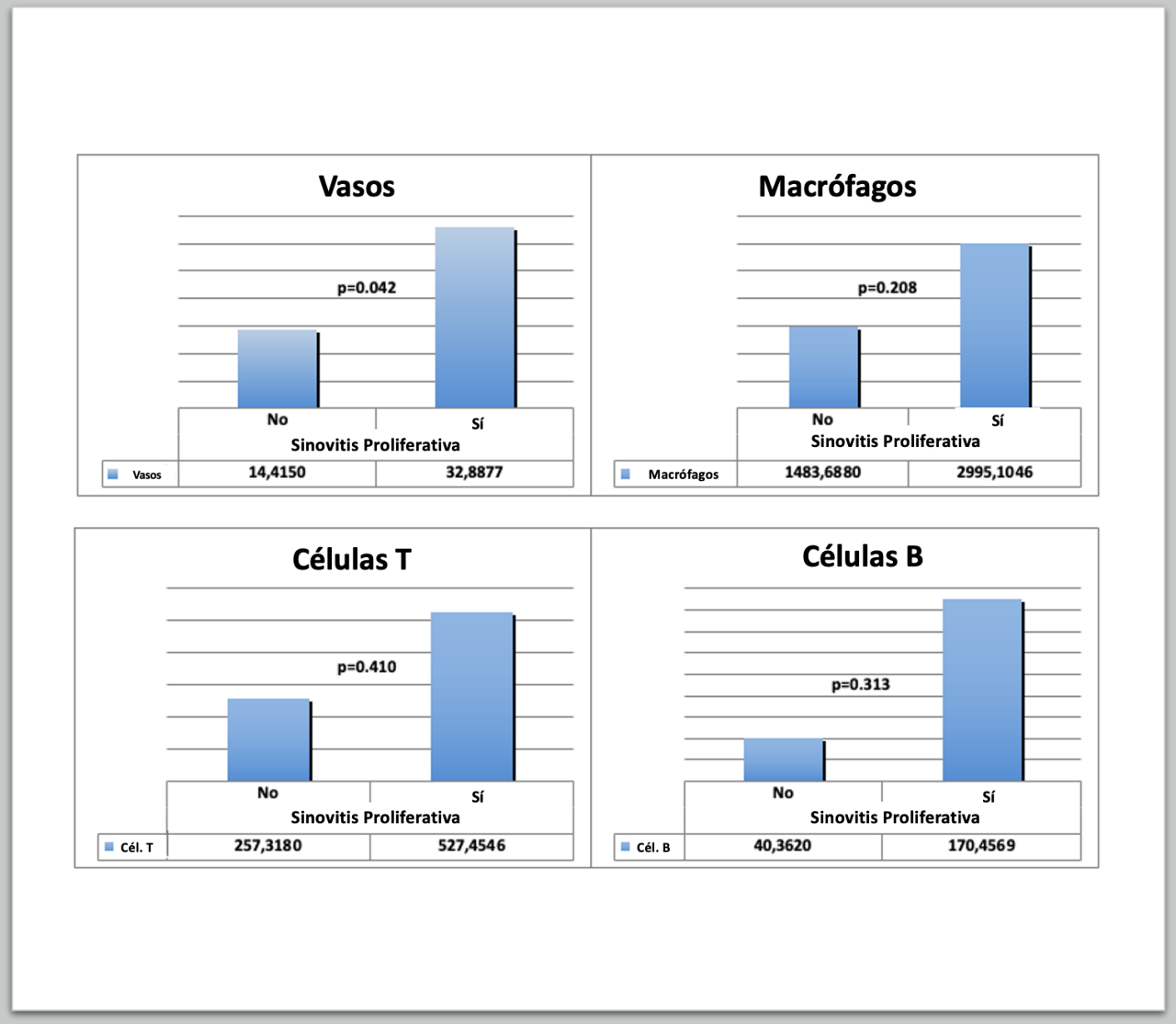
RF status [**OR 0.74** CI 95%(**0.31-1.71**), p=0.483]



Flat Synovitis (SH I+ PD)

Ramírez J, Azuaga-Piñango AB, et al. Clin Exp Rheumatol. 2022 May;40(5):960-966.

Resultados



La sinovitis proliferativa se asocia a una mayor densidad de vasos sinoviales e infiltrados de células sinoviales

- Se realizaron biopsias sinoviales a 23 pacientes.

Evaluación por RM

- 42 pacientes se sometieron a RM de la mano dominante: 17 (40,4%) tenían SP.
- Todas las articulaciones con sinovitis proliferativa excepto una tenía sinovitis por RM de grado 2 (58,8%) o 3 (35%).

Ramírez J, Azuaga-Piñango AB, et al. Clin Exp Rheumatol. 2022 May;40(5):960-966.

AR sero+

AR sero-

AR anciano

APs

Quién?

Conectivopatías

SpA periférica

PROYECTO MULTICÉNTRICO DE CARACTERIZACIÓN DE LAS ARTRITIS SERONEGATIVAS

Qué?

US MANOS

Active hand inflammation. Differing clinical and ultrasound patterns in patients with rheumatoid arthritis and psoriatic arthritis. A Cross-Sectional and Multicenter Study.

Julio Ramírez1*, Vicenç Torrente-Segarra2, Andrea Cuervo3, Mireia Moreno4, Ana Belén Azuaga1, Lourdes Mateo5, Beatriz Frade1, Andrea Zacarías1, Noemí Busquets3, Susana Holgado5, Paula Estrada6, Delia Reina6, Juan José De Agustín7, Carme Moragues8, María Bonet2, Sandra Farietta1, Patricia Corzo1, Andrés Ponce1, Virginia Ruiz-Esquide1, Lucía Alascio1 and Juan D Cañete1.

Objectives

To define ultrasound (US) characteristics of patients with Rheumatoid Arthritis (RA) and Psoriatic Arthritis (PsA) with active hand inflammation.

Methods

Cross-sectional and Multicenter study.

Joint Bone Spine 2025, Major Revision

Results

292 patients were included:

57% women
Mean age of 56.1 years (SD±18.2)
Mean disease duration 105.4 months (SD±131.1)

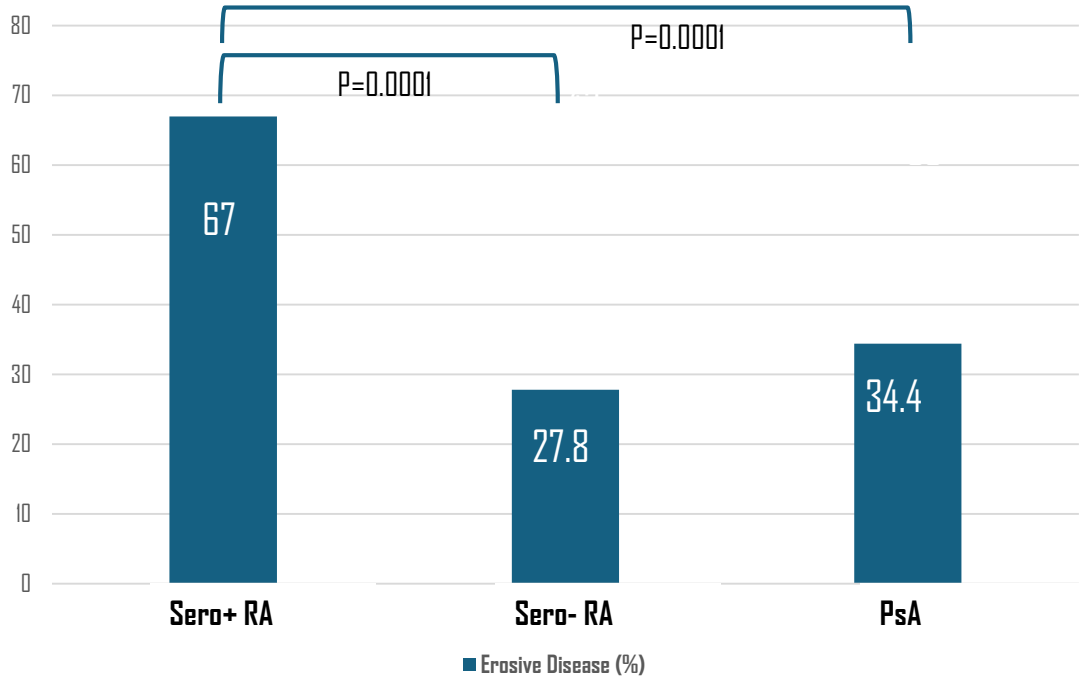
91p (31.1%) seropositive RA
79p (27%) seronegative RA
122p (41.7%) PsA

125 p (42.8%) erosive disease
103p (35.2%) targeted therapies.
Mean SDAI 29.5, SD±25.3
Mean DAPSA 22.3, SD±11.8.

No MUS-CPPD
No Early Arthritis (<6m)

Joint Bone Spine 2025, Major Revision

Joint Bone Spine 2025, Major Revision



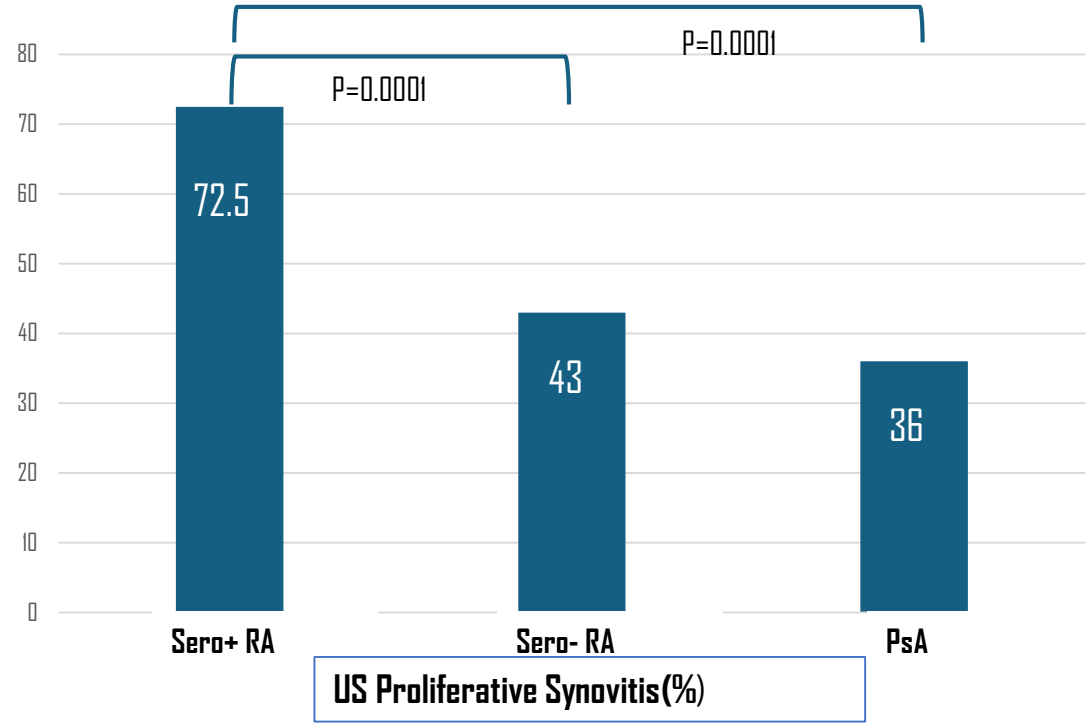
Erosive Disease (%)

125 p (42.8%) erosive disease

Disease duration [OR 1.0 (1.0-1.0), p=0.001]

ACPA positivity [OR 2.6 (1-6.7), p=0.045]

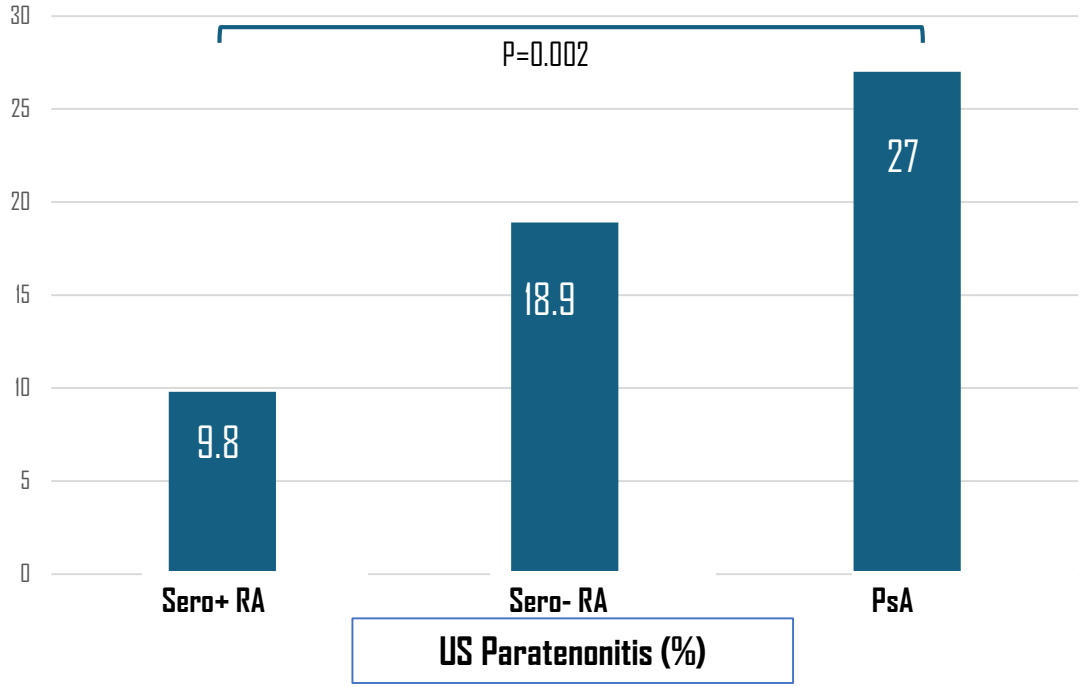
USPS [OR 5.9 (3.2-10.9), p=0.001].



144p (**42.7%**) had **Synovial Hypertrophy (SH)≥2+Power Doppler (PD)**

Erosive disease [OR 8.4 (3.9-18), p=0.0001]
US total score [OR 1.1 (1-1.1), p=0.0001]
US tendon involvement [OR 0.1 (0-0.3), p=0.0001]
Rx finger ankylosis [OR 0.07 (0-0.8), p=0.035]

Joint Bone Spine 2025, Major Revision



Extensor paratenonitis (57p, **19.5%**) significantly more frequent in PsA (33 patients, 27) (p=0.009) although not exclusive

- SJC [OR 1.1 (1-1.2), p=0.0001]
- **Finger ankylosis [OR 4.3 (1.1-16.9), p=0.034]**
- CRP [OR 0.6 (0.5-0.8), p=0.005]

Joint Bone Spine 2025, Major Revision

Conclusions

In a cohort of patients with active hand arthritis, **increased synovial pannus and paratenon inflammation were characteristics of RA and PsA, respectively,** although **not exclusive**.

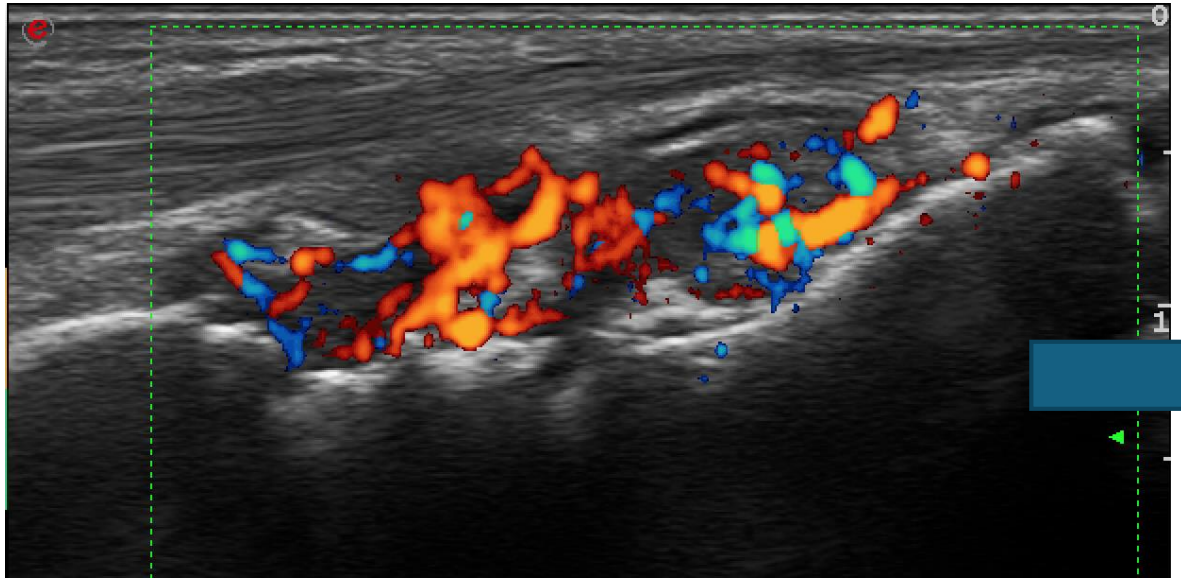
Bilateral association

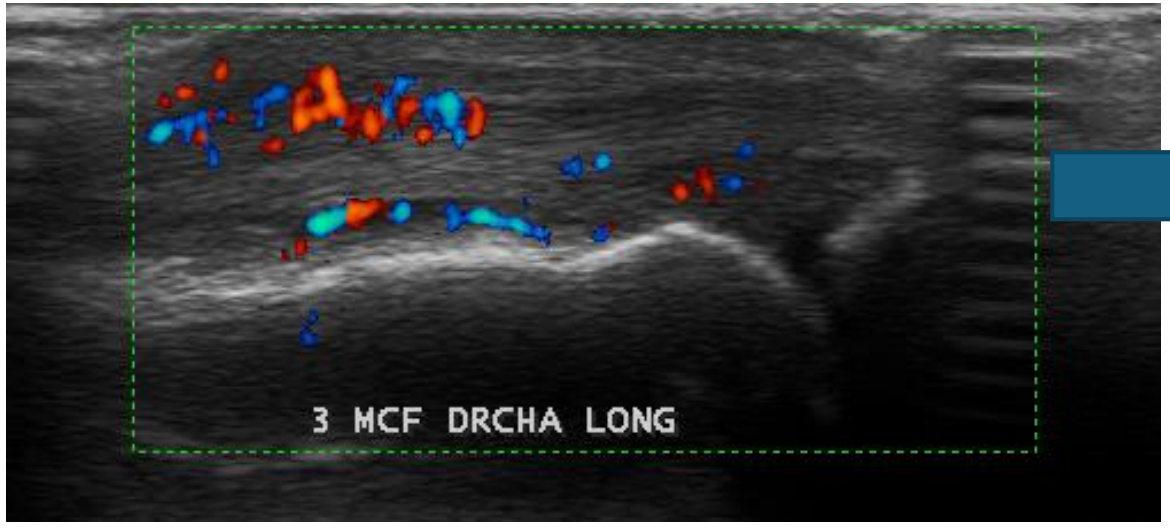
USPS (SH≥2+PD)----> erosive disease

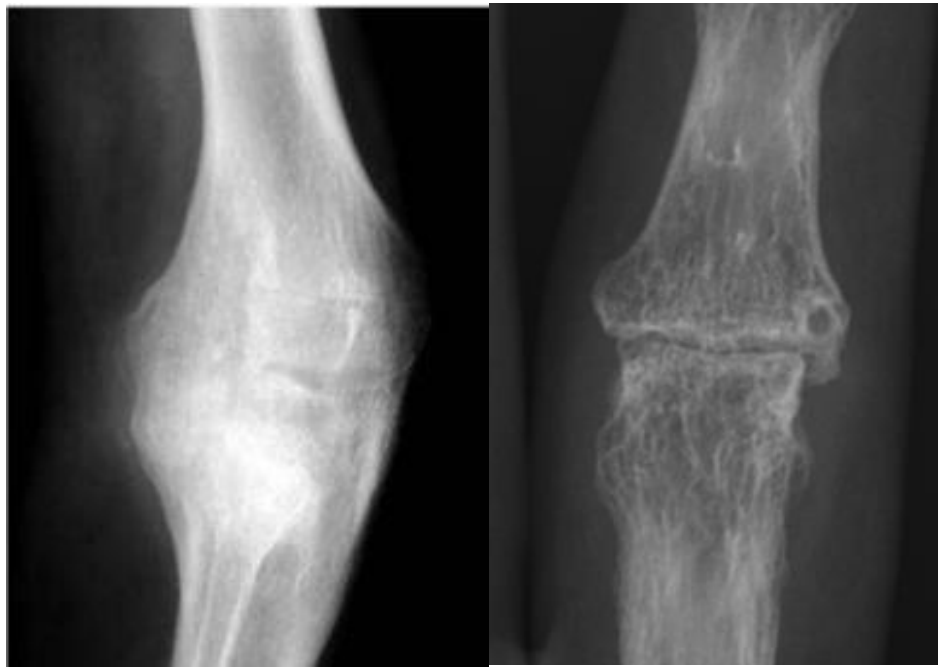
Paratenon inflammation----> ankylosis.

ACPA status, disease activity and treatment were not related to US findings.

Ramírez J, et al, ECOCAT group. Joint Bone Spine 2025, Major Revision







Ramírez J, et al, ECOCAT group. Joint Bone Spine 2025, Major Revision

Incorporating Imaging Goals into Treat-to-Target Goals in RA

Step 1: **Establish that subclinical inflammation can be detected by MRI and/or US**

Step 2: **Establish that subclinical inflammation detected by MRI or US is clinically important**

- Document that MRI and/or US findings of subclinical inflammation **predict any or all of: subsequent structural damage progression; clinical flares during continued therapy; and clinical flares in patients who taper** or discontinue therapy
- Document that **absence of** MRI and/or US findings of **subclinical inflammation predict** any or all of: **absence of subsequent structural damage** progression; absence of **clinical flares** during continued therapy; and absence of clinical flares in patients who taper or discontinue therapy

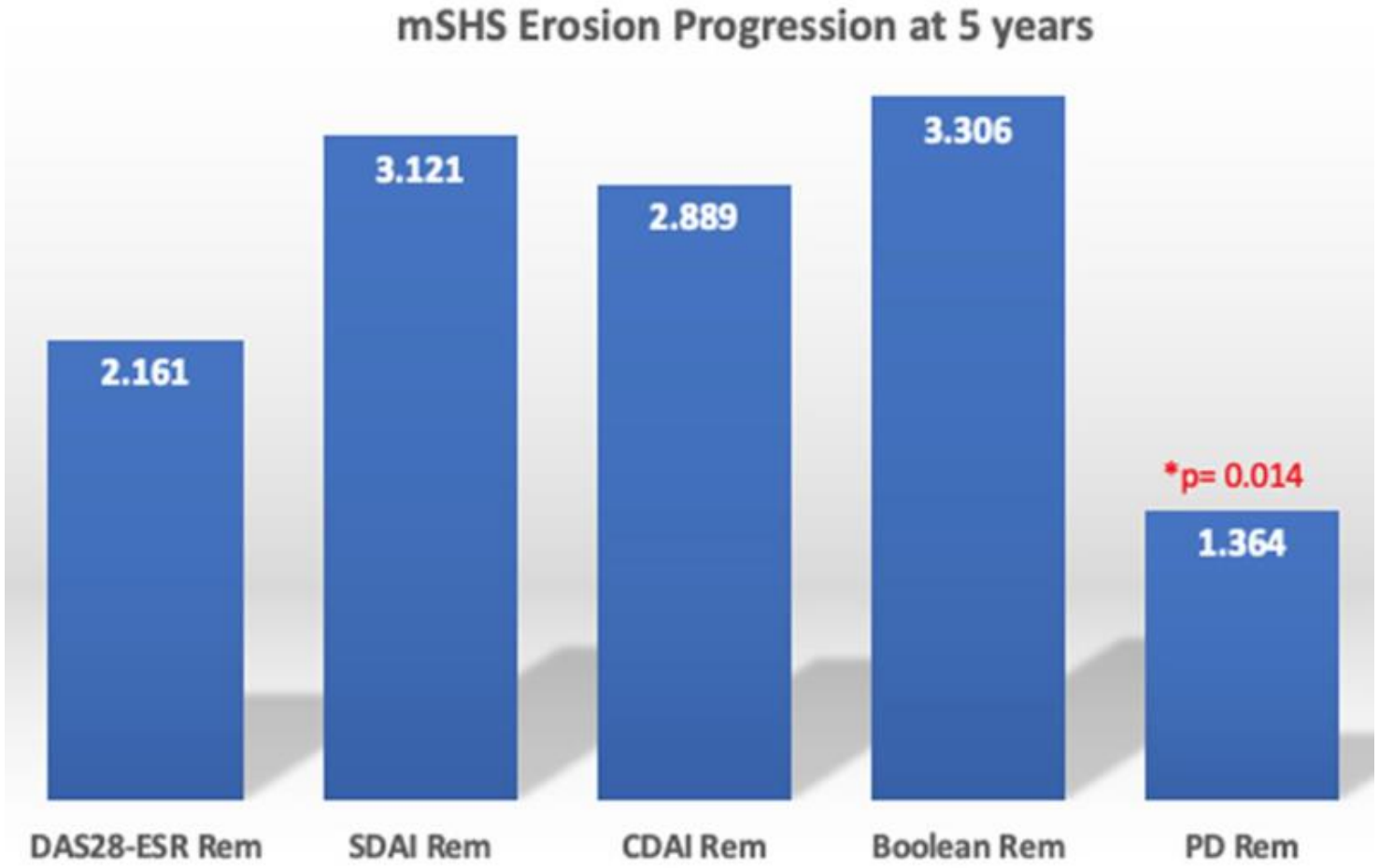
Step 3: **Demonstrate that subclinical MRI or US detected inflammation can be improved by treatment and that the use of this improves key endpoints**

Journal of Inflammation Research 2021:14 2547–2555

Clin Rheumatol. 2021 Jul;40(7):2665-2672.

Comparable long-term outcomes between DAS28-ESR remission criteria and ACR/EULAR definitions in patients with established rheumatoid arthritis

Julio Ramírez[1] · José Inciarte-Mundo[1] · Andrea Cuervo[1] · Raquel Celis[1] · Virginia Ruiz-Esquide[1] · Raul Castellanos-Moreira[1] · Andrés Ponce[1] · José A. Gómez-Puerta[1] · Raimon Sanmartí[1] · Juan D. Cañete[1]



RHEUMATOLOGY

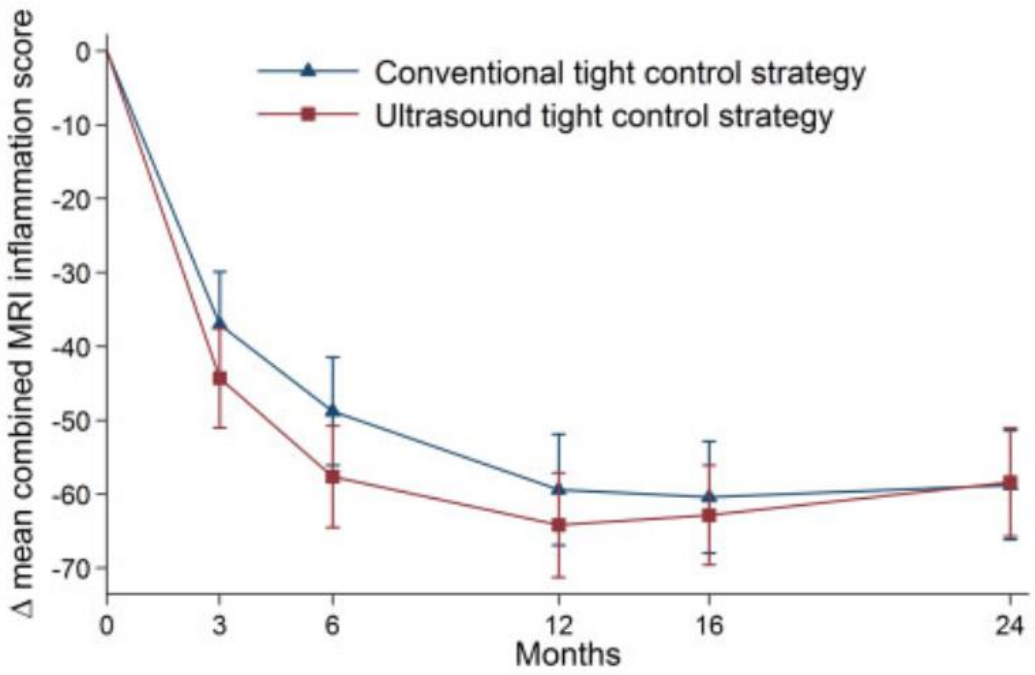
Rheumatology 2020;59:2550–2555
doi:10.1093/rheumatology/kez674
Advance Access publication 30 January 2020

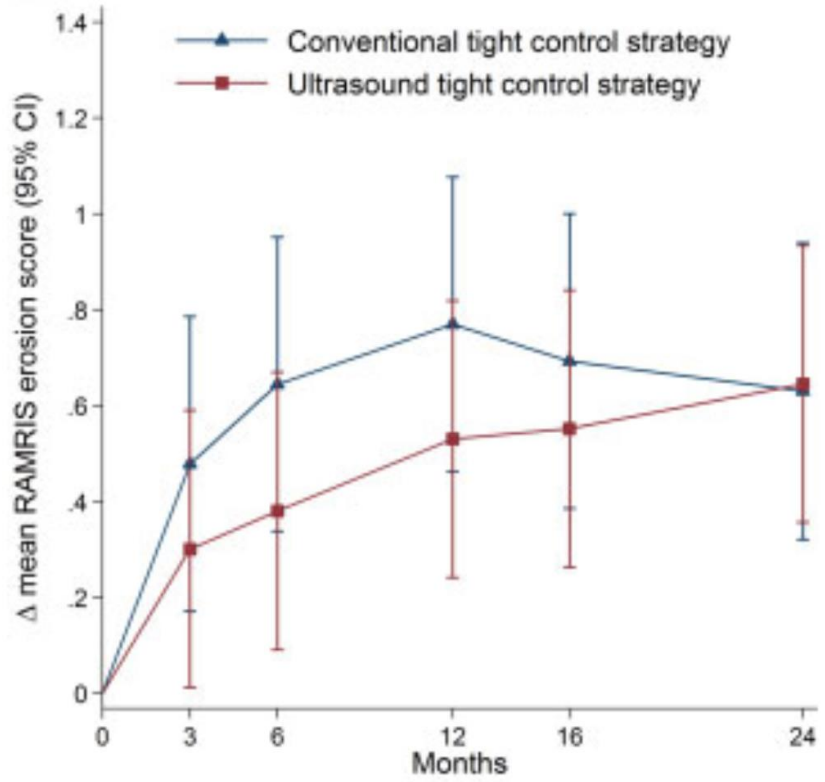
Concise report

Conventional versus ultrasound treat to target: no difference in magnetic resonance imaging inflammation or joint damage over 2 years in early rheumatoid arthritis

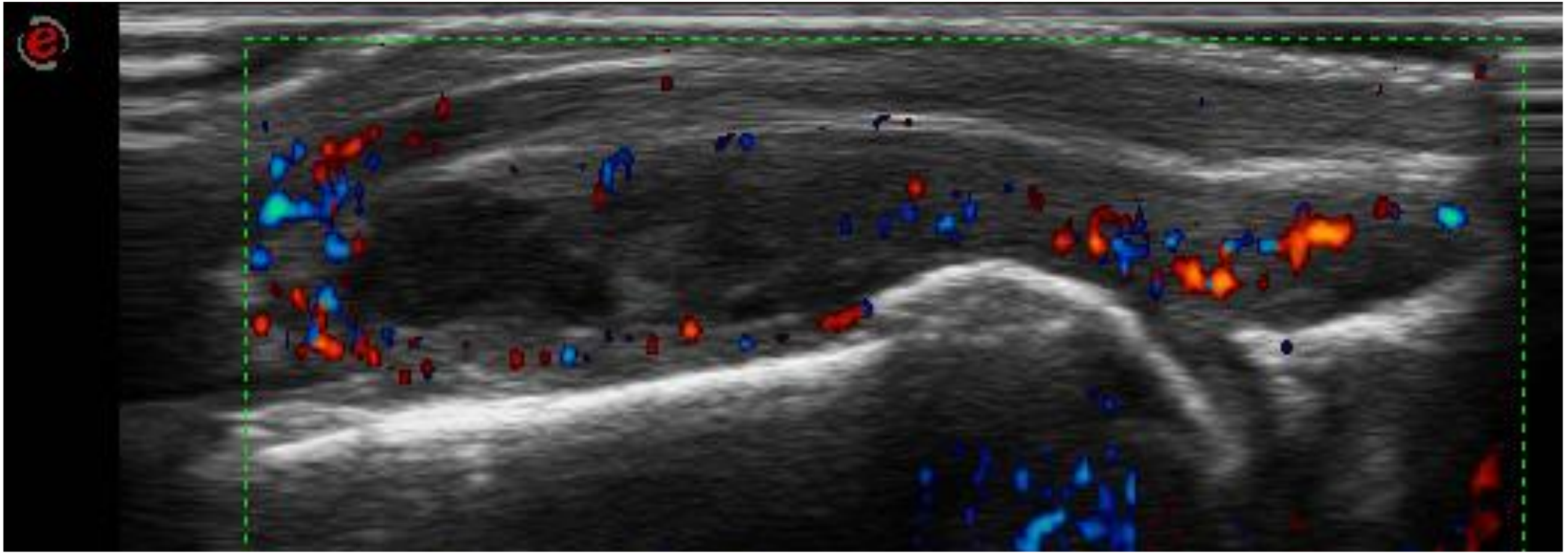
Ulf Sundin [1,2], Anna-Birgitte Aga[1], Øivind Skare[1], Lena B. Nordberg[1,2], Till Uhlig[1,2], Hilde B. Hammer[1], Désirée van der Heijde[1,3], Tore K. Kvien[1,2], Siri Lillegraven[1,*] and Espen A. Haavardsholm[1,2,*]; and the ARCTIC study group

¿Es US PD el mejor target?

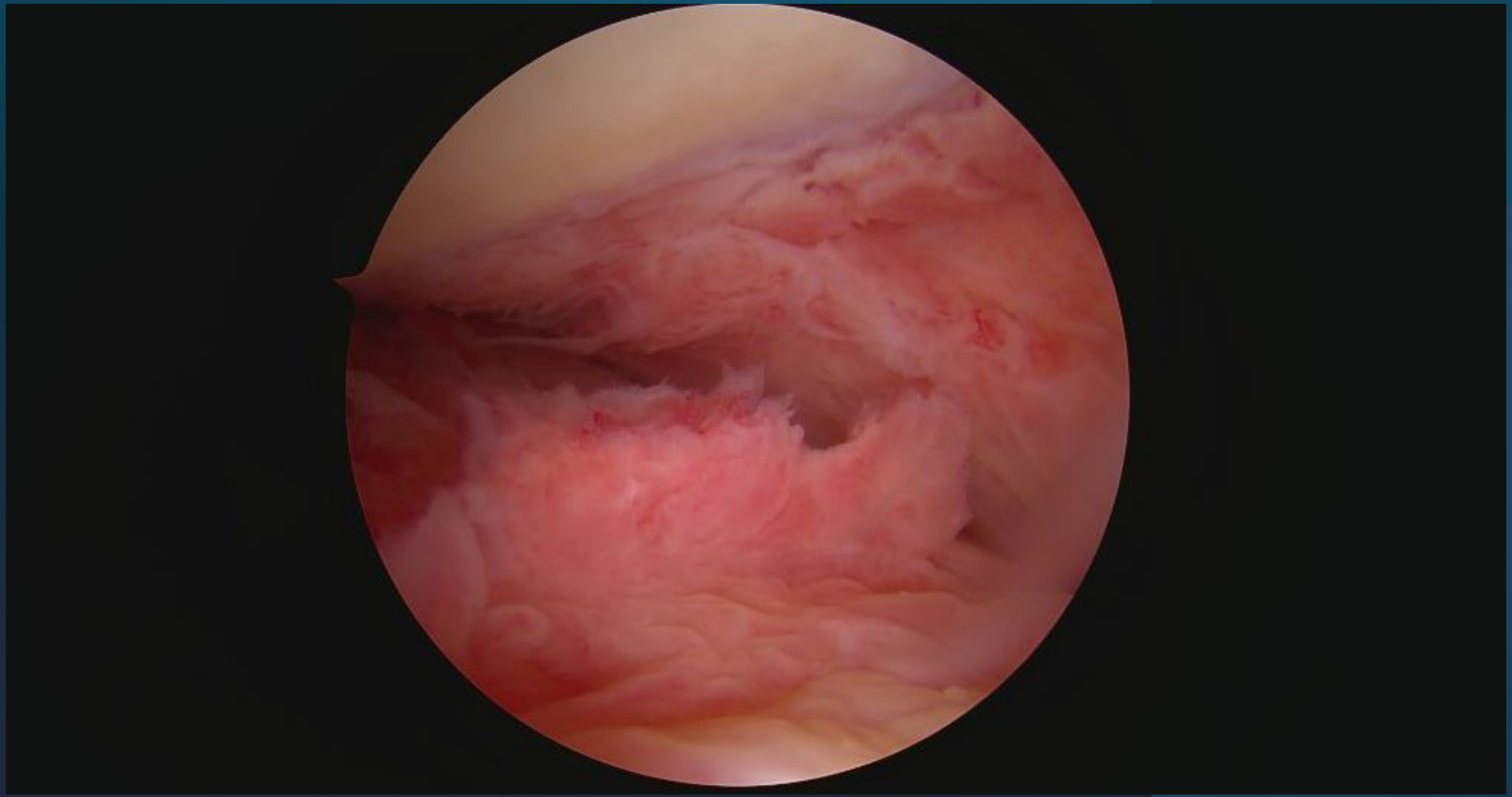




Proliferative/ globular/ balloon-shaped pattern: SH≥2+PD



Ramírez J, Azuaga-Piñango AB, et al. Clin Exp Rheumatol. 2022 May;40(5):960-966.



Ramírez et al. Arthritis Research & Therapy 2014, 16:R5
http://arthritis-research.com/content/16/1/R5

arthritis research&therapy

RESEARCH ARTICLE Open Access

Patients with rheumatoid arthritis in clinical remission and ultrasound-defined active synovitis exhibit higher disease activity and increased serum levels of angiogenic biomarkers

Julio Ramírez[1], Virginia Ruiz-Esquide[1], Isaac Pomés[2], Raquel Celis[1], Andrea Cuervo[1], Mª Victoria Hernández[1], Jaume Pomés[2], José L Pablos[3], Raimon Sanmartí[1] and Juan D Cañete[1*]

- 45.4% de los pacientes con AR en remisión clínica tienen sinovitis activa definida por ecografía **(hipertrofia sinovial (HS) grado ≥2 + PD)**

- Mayor actividad de la enfermedad (DAS28)

- Menos corticoides a dosis bajas (≤5 mg/dia)

- Concentraciones séricas más elevadas de varios factores angiogénicos, especialmente FGFb

1 Año

Risk factors associated with joint damage progression (delta-erosion score after 12 months follow-up) ($N = 42$)

Baseline risk factors	Coefficient
Higher baseline erosion score	0.44
Higher BMI	0.1
Longer disease duration	0.02
No biologic therapy	−0.01
No csDMARD treatment	−4.55
Prednisone treatment	3.82
UdAS (PD + SH ≥ 2)	1.58

J. Ramírez et al. / Seminars in Arthritis and Rheumatism 47 (2017) 303–309

5 Años

Tras 5 años de seguimiento, 14 (23.3%) progresaron desde el punto de vista radiográfico.

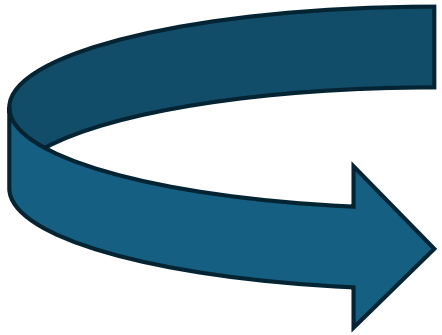
Los pacientes con sinovitis ecográfica según nuestro criterio estricto (SH≥2+PD) tuvieron mayor progresión radiográfica (p=0.014).

Esto no ocurrió, sin embargo, para los pacientes que únicamente presentaron señal PD.

Ramírez J, et al. Rheumatology (Oxford) 2021;60(2):667-674.

Future Directions

- USPS in early disease stages?
- Potential reversibility with treatment?
- USPS and paratenonitis as prognostic factors?



Prospectives Studies

MEMÒRIA DE SOL·LICITUD PER A PROJECTES DE RECERCA INDIVIDUAL I COL.LABORATIVA

SOCIECAT CATALANA DE REUMATOLOGIA 2024

TÍTOL: Biomarcadores pronóstico en Artritis de Inicio. Papel de la ecografia y la biopsia sinovial.	
DURACIÓ:	24 meses

Objetivos

- Caracterización clínica, ecográfica e inmunohistoquímica de la artritis de inicio.
- **Analizar si la sinovitis proliferativa ecográfica y el patotipo sinovial linfomieloide se relacionan con el desarrollo de erosiones o el inicio de terapias avanzadas y si son reversibles una vez el paciente entra en remisión clínica.**

Estudio prospectivo, unicéntrico, de 2 años de duración (1 año reclutamiento, 1 año seguimiento).

- Se reclutarán pacientes con artritis de ≤2años de evolución naive a terapias avanzadas.
- Serán excluidos pacientes con artropatía microcristalina.

Cronograma del estudio

	Visita Basal	Visita 6 meses	Visita 12 meses	Visita Remisión
Anamnesis	X	X	X	X
PROs	X	X	X	X
Pruebas Laboratorio	X	X	X	X
Radiografías	X		X	
Ecografía	X	X	X	X
Biopsia sinovial	X		(x)*	X

(x)*: Biopsia sinovial sólo si no se ha hecho en la visita de remisión (en pacientes donde la remisión no fue alcanzada)

Conclusiones

- La ecografía es una herramienta útil para la evaluación del paciente con Artritis
  - Más sensible que la exploración física
  - Diferencia lo normal de lo patológico
  - Ayuda en el Diagnóstico Diferencial
  - Predice Rebrotes de la enfermedad y correlaciona con daño estructural
  - Pero…
    - No debe tratarse de manera aislada
    - Aún no sabemos cuál es el mejor punto de corte que anticipe desenlaces clínicos relevantes como enfermedad erosiva o inicio de terapia biológica.

Autofeedback from ultrasound **images provides rapid improvement in palpation skills for identifying** joint **swelling in** rheumatoid arthritis

Ogasawara M, et al. J Rheumatol 2012 Jun;39(6):1207-14.

OBJECTIVO:
Evaluar la utilidad de la Ecografía articular en las habilidades en la exploración clínica

MÉTODOS:
1944 articulaciones evaluadas en 108 pacientes con AR.
Exploración clínica-Ecografía articular-Feedback.

RESULTADOS:
La correlación entre exploración clínica y la ecografía aumentó aproximadamente un 50% a lo largo del estudio.

CONCLUSIONES:
El Autofeedback procedente de la ecografía articular proporciona una rápida mejoría en las habilidades exploratorias para la identificación de articulaciones inflamadas en pacientes con AR

Indications for Ultrasound in Rheumatology

- Is it trauma or inflammation?
- Does my patient have gout or CPPD?
- How can I correctly place a needle for aspiration and injection?
- Does my patient have polymyalgia rheumatica or GCA?
- Is this Sjögren's syndrome?
- Can we assess the lungs with ultrasound?

Clin Rheumatol (2010) 29:133–142
DOI 10.1007/s10067-009-1292-y

ORIGINAL ARTICLE

A sonographic spectrum of psoriatic arthritis: “the five targets”

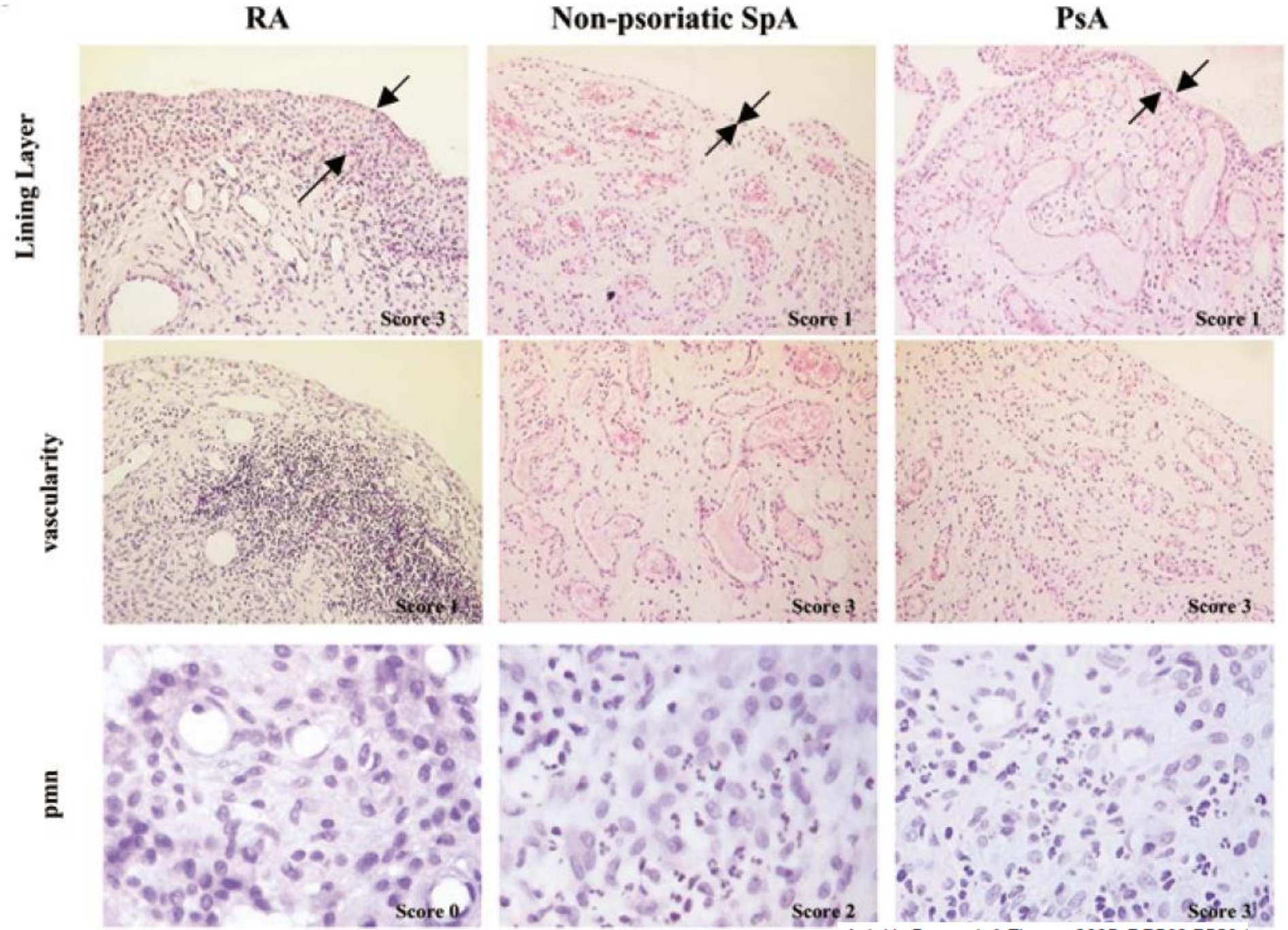
Marwin Gutierrez · Emilio Filippucci · Rossella De Angelis · Giorgio Filosa David Kane · Walter Grassi

Heterogeneous disease

Synovitis
Tendon and enthesopathy
Osteolysis
Bone Neoformation

Psoriasis (Skin, nail)

Joint
Tendon
Entheses
Psoriasis vulgaris
Onychopathy



Arthritis Research & Therapy 2005, **7**:R569-R580 (

Clinical and treatment differences Joint Bone Spine 2025, Major Revision

Seropositive RA patients exhibited significantly
- longer disease duration
- higher frequency of erosive disease

Seronegative RA patients demonstrated elevated disease activity levels and higher CRP serum levels

PsA patients had significantly lower joint counts and CRP serum levels.
- History of dactylitis (40.9%)
- 21 patients had enthesitis (17.2%)
- 37 patients exhibited onychopathy (30.3%)

Therapeutic differences:
- Greater use of cDMARDs (p=0.0001) and targeted therapies (p=0.007) among seropositive RA patients.
- Glucocorticoids was reported in 50% of both seropositive and seronegative RA patients, 24.5% of PsA (p=0.0001).
- Combined therapy (cDMARDs + targeted therapy): Sero+ RA (20.8%) Sero- RA (13.9%) and PsA (8.1%), (p=0.029).

Notably, 52 patients **(17.8%) were receiving only glucocorticoids** at the time of assessment, with 25 being seronegative RA patients (31.6%), 16 PsA patients (13.1%), and 11 seropositive RA patients (12%), (p=0.001).

Monotherapy with targeted therapies was significantly more frequent in PsA patients (29.5%) and seropositive RA patients (24.1%) compared to seronegative RA patients (6 patients, 7.5%) (p=0.0001)

Ultrasound tendon involvement

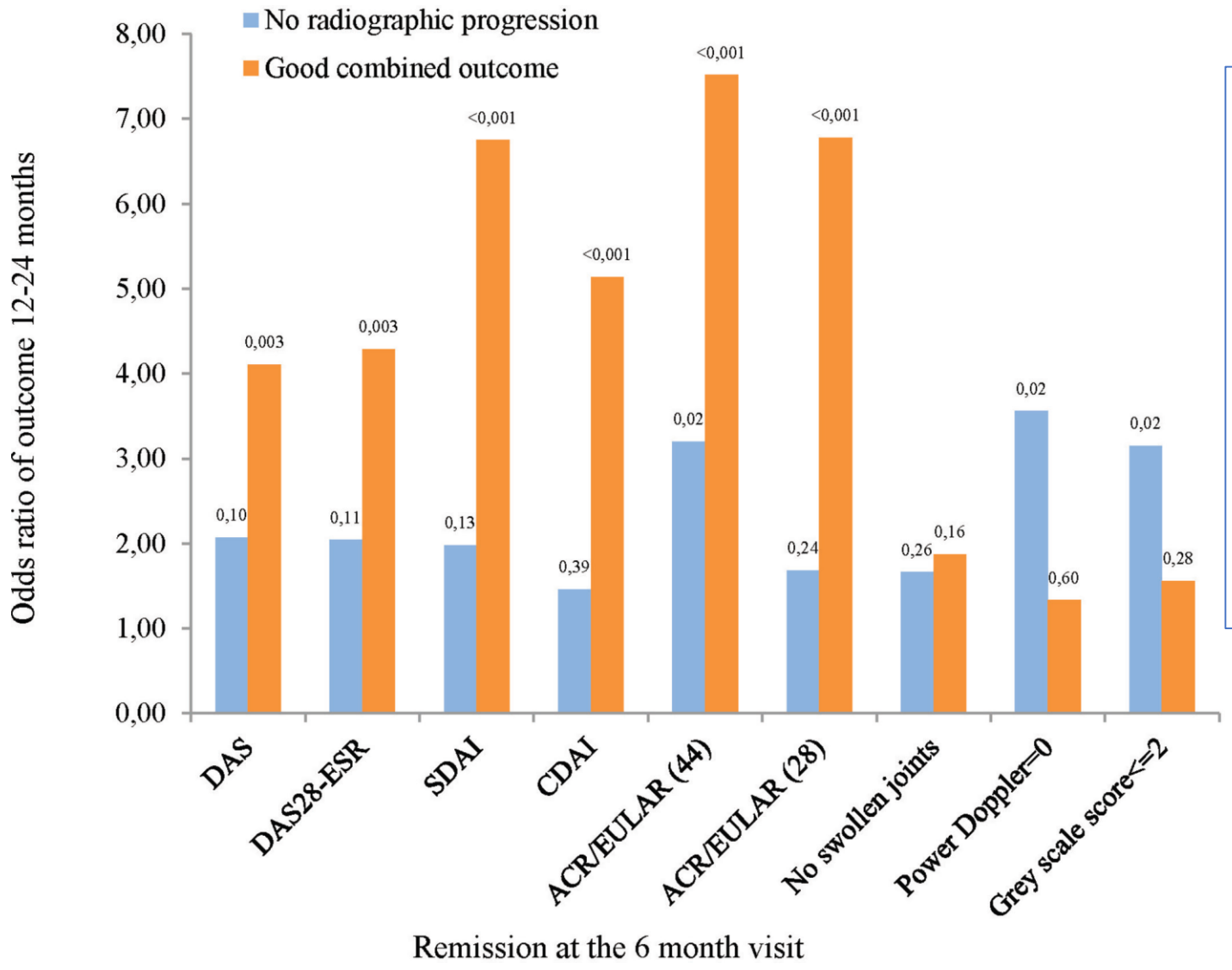
- 145 patients (49.6%) exhibited tendon involvement
- No significant differences were observed based on the initial diagnosis

In multivariable analysis, the following were independently associated with US tendon involvement:

- **Dactylitis [OR 5.9 (2.7-12.8), p=0.0001]**
- **US global score [OR 1.1 (1.1-1.2), p=0.0001]**
- **TJC [OR 1.2 (1.1-1.4), p=0.0001]**

Conversely, **the presence of USPS was inversely associated with tendon inflammation [OR 0.3 (0.1-0.6), p=0.001].**

Being in US remission did not capture the functional aspects of the disease as well as the clinical criteria



Paulshus Sundlisaeter N, et al. Ann Rheum Dis 2018; 0:1-5

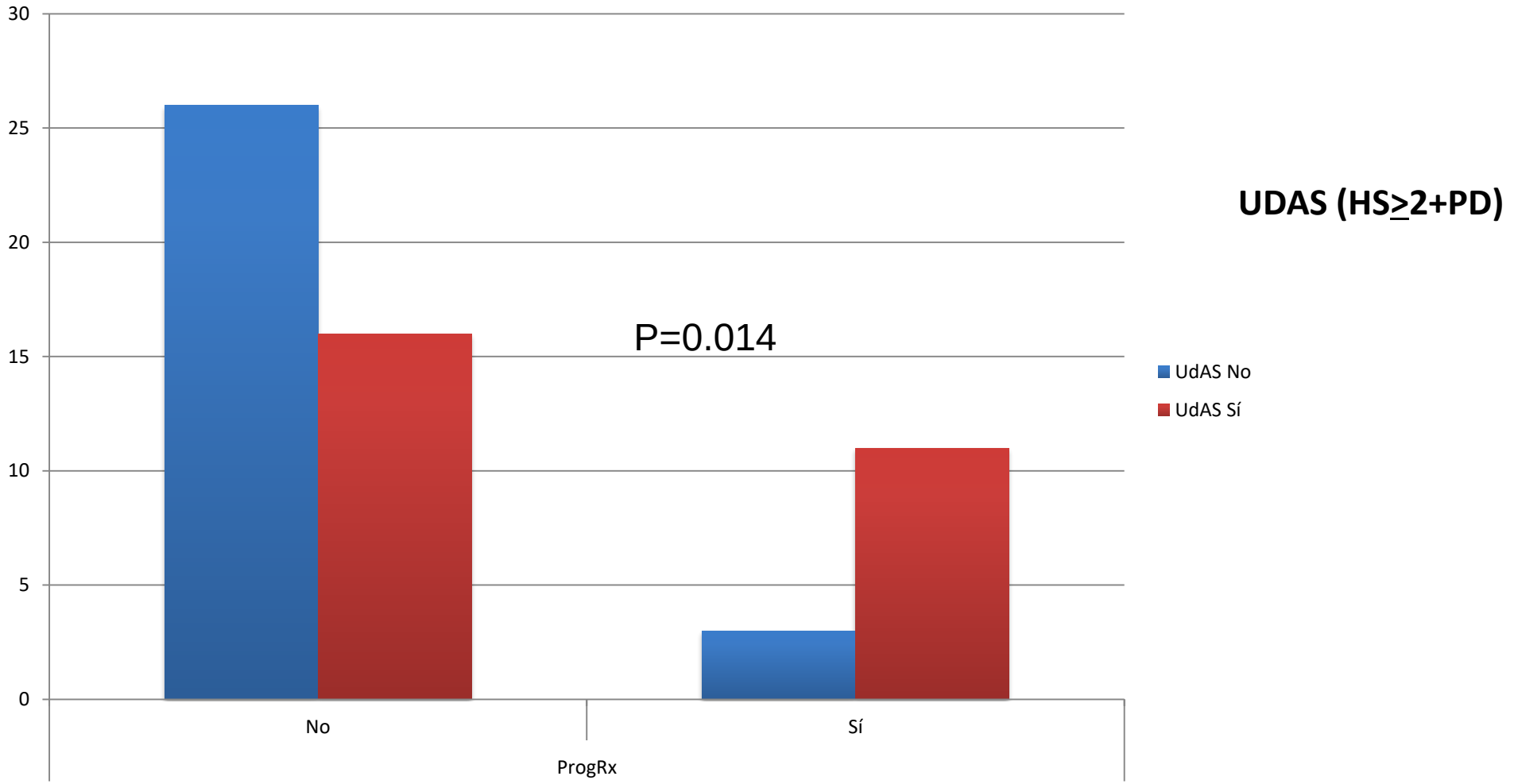
103 RA patients

42%–82% remission at 6m

71% no X-Ray progression

37% had good outcome

Seguimiento a 5 años



UDAS (HS≥2+PD)

Ramírez J, et al. Rheumatology (Oxford) 2021;60(2):667-674.

Is it rheumatoid arthritis (RA) or osteoarthritis (OA)?