



ΕΠΙΣΤΗΜΟΝΙΚΗ ΕΤΑΙΡΕΙΑ ΓΙΑ ΤΗ ΜΥΟΣΚΕΛΕΤΙΚΗ ΥΓΕΙΑ

υβριδικό

13^ο Πανελλήνιο Συνέδριο ΕΠΕΜΥ

Με φυσική παρουσία

2-5
Σεπτεμβρίου
2021 | Χαλκιδική
Ξενοδοχείο Athos



**Διαγνωστική προσέγγιση
παρεγχυματικών
απεικονιστικών ευρημάτων
σε ασθενείς με αυτοάνοσα
νοσήματα**

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Πνευμονολόγος
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Είναι όλες οι υπολογιστικές τομογραφίες ίδιες;



Υπολογιστική τομογραφία υψηλής ευκρίνειας (HRCT)

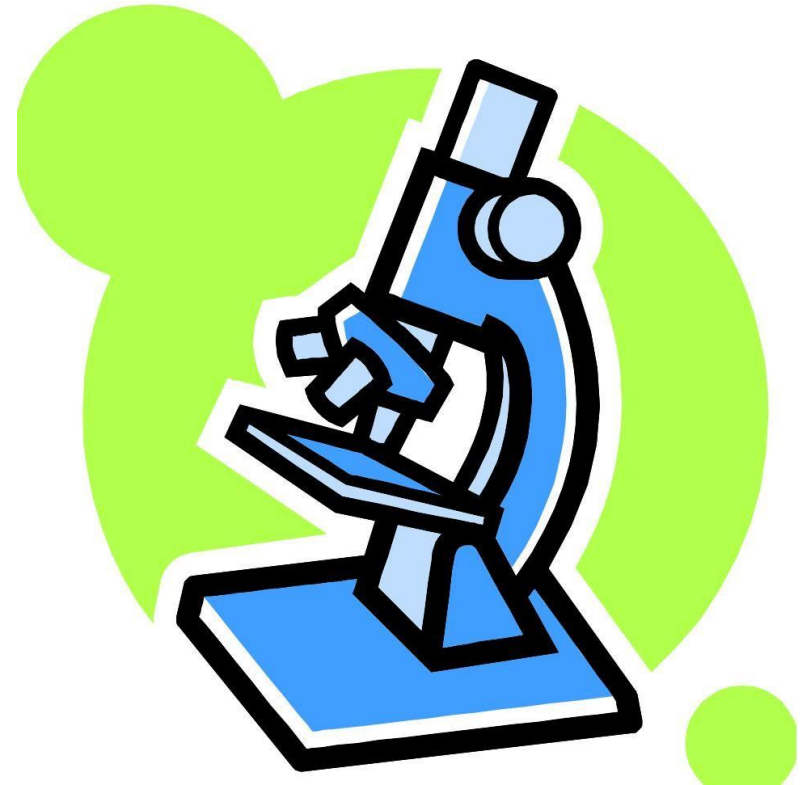
1. Noncontrast examination
2. Volumetric acquisition with selection of:
 - Sub-millimetric collimation
 - Shortest rotation time
 - Highest pitch
 - Tube potential and tube current appropriate to patient size:
 - Typically 120 kVp and 9240 mAs
 - Lower tube potentials (e.g., 100 kVp) with adjustment of tube current encouraged for thin patients
 - Use of techniques available to avoid unnecessary radiation exposure (e.g., tube current modulation)
3. Reconstruction of thin-section CT images (91.5 mm): $\leq 1,3\text{mm}$
 - Contiguous or overlapping
 - Using a high-spatial-frequency algorithm
 - Iterative reconstruction algorithm if validated on the CT unit (if not, filtered back projection)
4. Number of acquisitions:
 - Supine: inspiratory (volumetric)
 - Supine: expiratory (can be volumetric or sequential)
 - Prone: only inspiratory scans (can be sequential or volumetric); optional (see text)
 - Inspiratory scans obtained at full inspiration
5. Recommended radiation dose for the inspiratory volumetric acquisition:
 - 1–3 mSv (i.e., “reduced” dose)
 - Strong recommendation to avoid “ultralow-dose CT” (<1 mSv)

Γιατί χρειαζόμαστε υπολογιστική τομογραφία υψηλής ευκρίνειας;

- Αναζητούμε συγκεκριμένα πρότυπα πνευμονικής προσβολής (lung injury)
- Μπορεί να αναγνωριστούν αξιόπιστα μόνον μέσω της HRCT

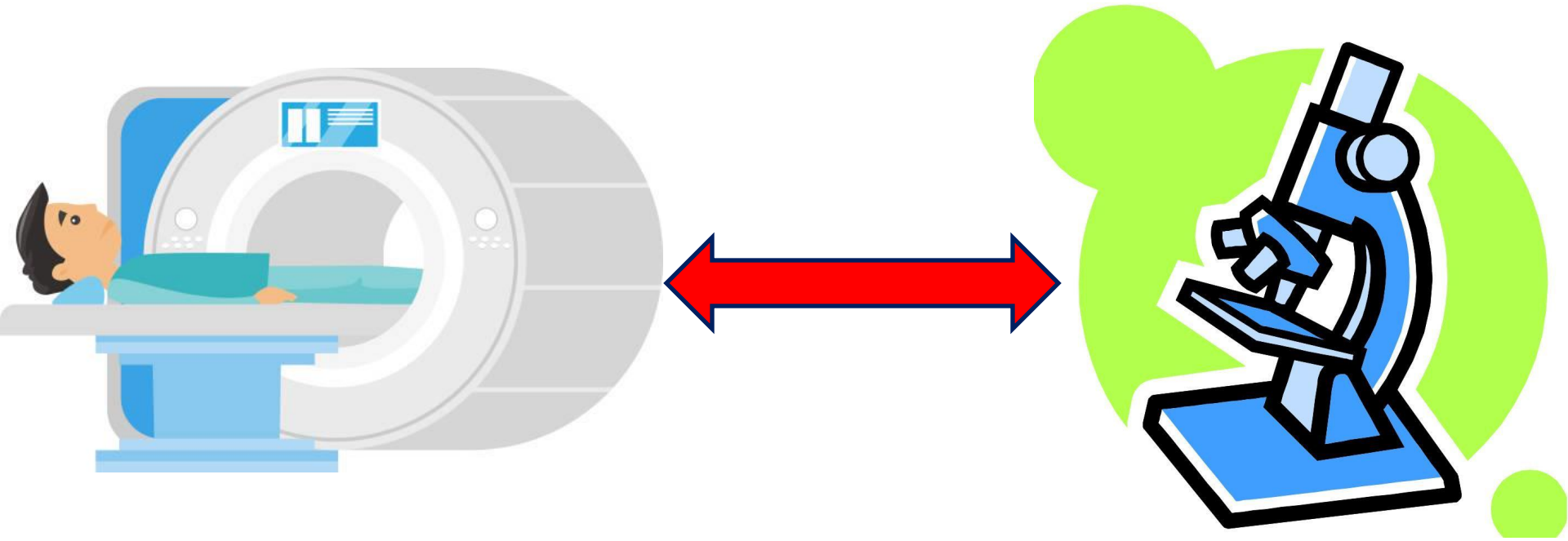
Βασικά πρότυπα πνευμονικής προσβολής

- Usual Interstitial Pneumonia (UIP)
- Non Specific Interstitial Pneumonia (NSIP)
- Organizing Pneumonia (OP)
- Lymphocytic Interstitial Pneumonia (LIP)



Pathology patterns

Radiology-Pathology correlation



HRCT

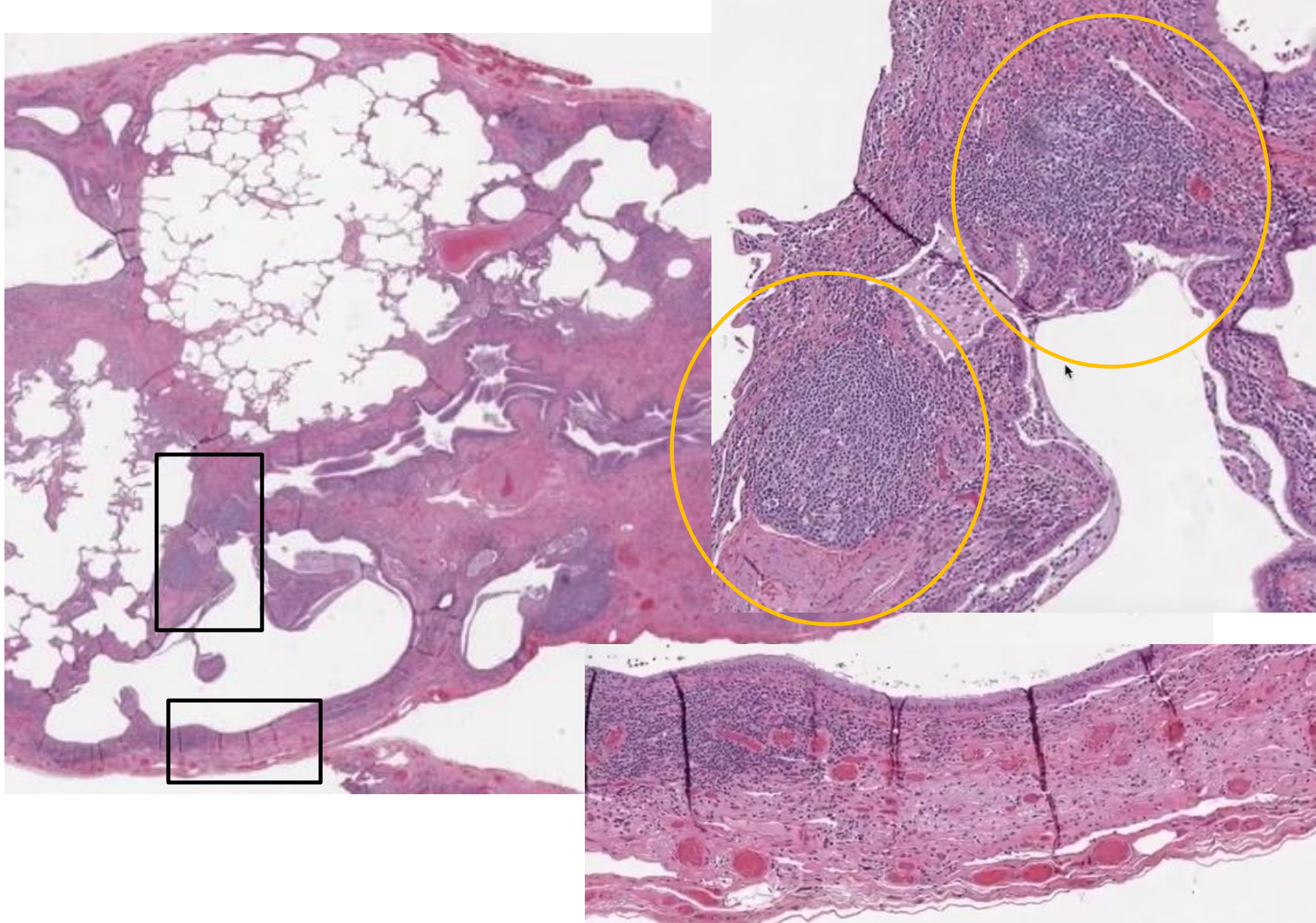
Lung Involvement in CTDs by Anatomical Compartment

- **Airspace**
- **Interstitial**
- **Airways**
- **Pulmonary vasculature**
- **Extra-pulmonary**

Respiratory involvement in CTDs

Manifestation	RA	SLE	SS	DM-PM	Sjögren's syndrome	MCTD	AS
Pleural effusion	++	++	±	-	±	+	-
Pleural fibrosis	+	-	-	-	-	-	-
Pneumothorax	+	-	-	-	±	-	+
Pneumomediastinum	-	-	-	+	-	-	-
Upper airway involvement	+	-	-	-	++	-	+
Bronchiolitis/bronchiectasis	+++	+	+	-	+	+	-/±
<u>UIP</u>	++	+	+	++	-/±	+	+
<u>NSIP</u>	+	+	+++	+++	-/±	++	+
Apical fibrobullous disease	±	-	±	-	-	±	++
<u>LIP</u>	-/±	-/±	-/±	-	+	-	-
Lymphoproliferative disorders	±	-	-	-	+	-	-
CPFE	+	-	±	-	-	±	±
DIP/RB-ILD	+	-	+	-	-	-	-
<u>COP/AEOP</u>	+	+	+	++	+	+	-
Eosinophilic pneumonia	-/±	-	-	-	-	-	-
DAD/ARDS	+	++	+	++	-	+	-
Pulmonary nodules	+	-	-	-	-	-	-
Pulmonary infections	+	+++	+	+	±	+	+
Aspiration pneumonia	-	-	++	++	-	+	±
Lung cancer	-	-	++	++	-	+	-
Pulmonary amyloidosis	-/±	-	-	-	-	-	-
PAH	+	+	++	+	-	++	±
DAH/capillaritis	-/±	+	-/±	-/±	-	±	-
Vasculitis	+	+	-	+	-	+	±
Pulmonary thromboembolism	+	++	+	±	-	+	-
Acute reversible hypoxemia	-	+	-	-	-	-	-
Respiratory muscle dysfunction	-/±	+	-	++	-	-	±
Thoracic cage involvement	±	-/±	-	±	-	-	+
Obstructive sleep apnea	±	-	-	-	-	-	++

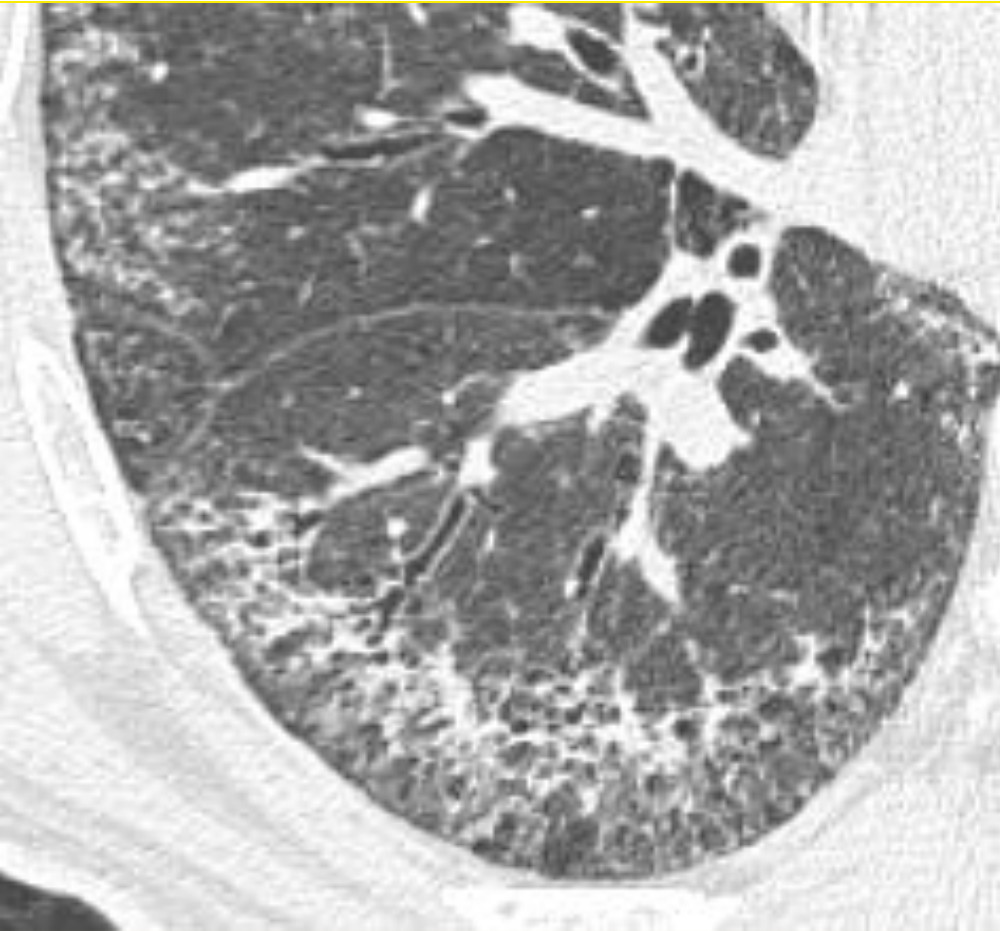
Παθολογοανατομικά ευρήματα υπέρ CTD



Υπάρχουν πρότυπα πνευμονικής προσβολής που θέτουν την υποψία υποκείμενης CTD;

- NSIP pattern (subpleural sparing)
- Exuberant honeycombing
- Four corners sign
- Straight edge sign

NSIP vs UIP



1. Irregular reticular pattern
2. Traction bronchiectasis/bronchiolectasis
3. Relative subpleural sparing

NSIP pattern



Cysts that are:

- ✓Subpleural in location
- ✓Clustered
- ✓Share walls
- ✓In more than one layers

UIP pattern

Πόσο εύκολος είναι ο διαχωρισμός;

70-F

ΣΥΜΠΕΡΑΣΜΑ :

Πάχυνση των ενδολοβίδιων και μεσολοβίδιων διαφραγματίων σε αμφοτέρους τους πνεύμονες ιδία υποϋπεζωκοτικά με διάσπαρτες βρογχιεκτασίες εξ έλξεως στα πλαίσια διάμεσης πνευμονοπάθειας – ίνωσης του τύπου UIP.



Overlap myositis-SSc. Anti-Ku positive

Πόσο εύκολος είναι ο διαχωρισμός;

EXPERT REVIEW OF RESPIRATORY MEDICINE
<https://doi.org/10.1080/17476348.2020.1804363>



REVIEW



Radiological honeycombing: pitfalls in idiopathic pulmonary fibrosis diagnosis

Vasilios Tzilas^a, Simon Walsh^b, Argyrios Tzouvelekis^c and Demosthenes Bouros^a

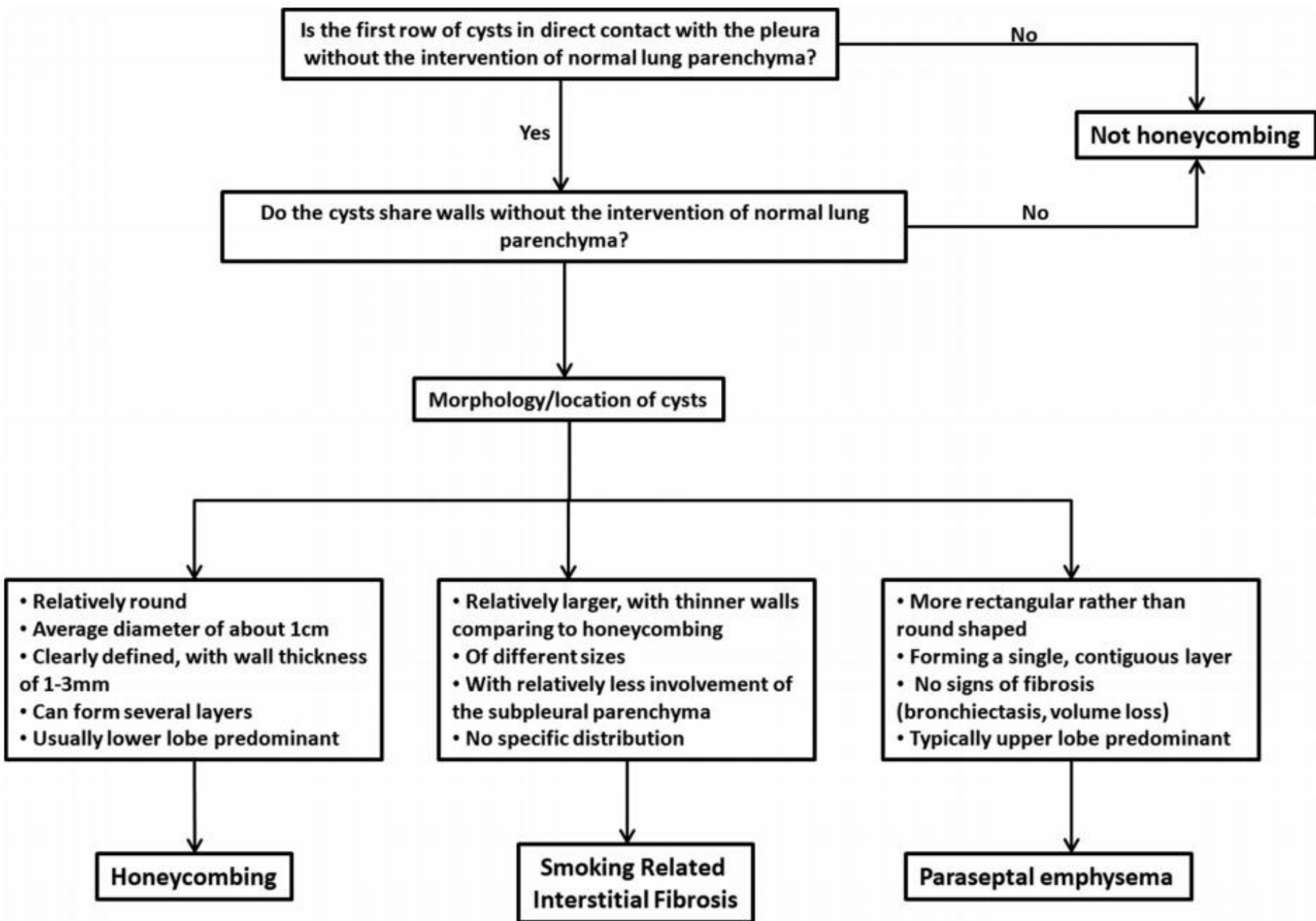
^aFirst Academic Department of Pneumology, Interstitial Lung Diseases Unit, Hospital for Diseases of the Chest, "Sotiria", Medical School, National and Kapodistrian University of Athens, Athens, Greece; ^bNational Heart and Lung Institute, Imperial College, London, UK; ^cUniversity Hospital of Patras, Patras, Greece

ABSTRACT

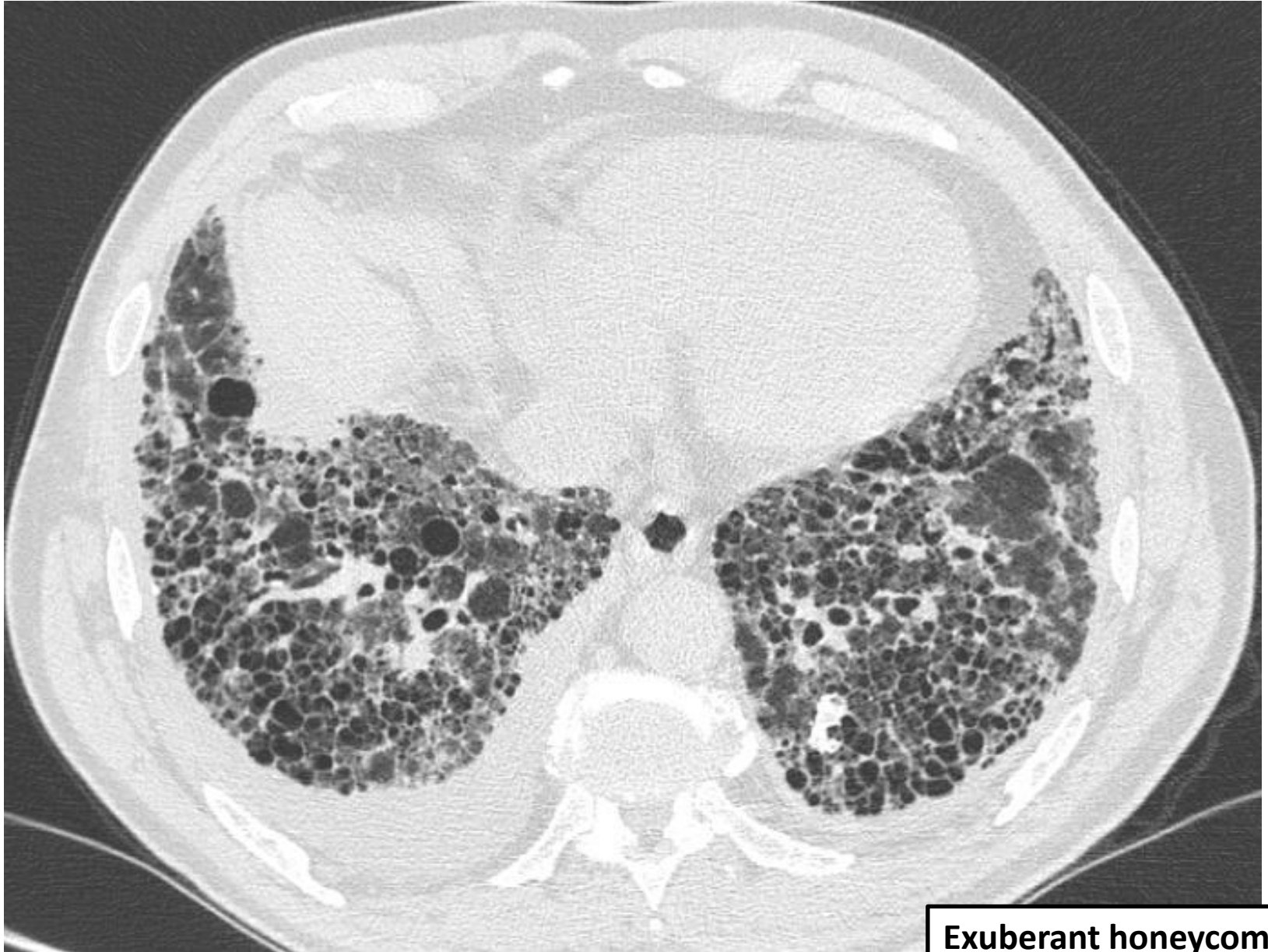
Introduction: High-Resolution Computed Tomography (HRCT) plays a pivotal role in the diagnosis of Idiopathic Pulmonary Fibrosis (IPF). First, it establishes the presence of lung fibrosis. Second, it allows the recognition of specific patterns, namely typical and probable Usual Interstitial Pneumonia (UIP) pattern obviating the need for tissue confirmation in the appropriate clinical context.

Areas covered: Acknowledging the extreme versatility of modern radiology and the heavy burden of knowledge the modern radiologist has to cope with, this review addresses the diagnostic pitfalls of honeycombing in IPF diagnosis. This review focuses on two areas: i) when honeycombing is actually present but there are other findings that should raise suspicion of an alternative diagnosis and ii) when honeycombing is misdiagnosed, focusing on the commonest radiographic patterns that are responsible for this confusion.

Expert opinion: It is pivotal to establish the actual presence of honeycombing. Even then, the distribution of honeycombing or the presence of other findings could be suggestive of alternative diagnoses. Reviewing older images can be extremely helpful in reaching the correct diagnosis.

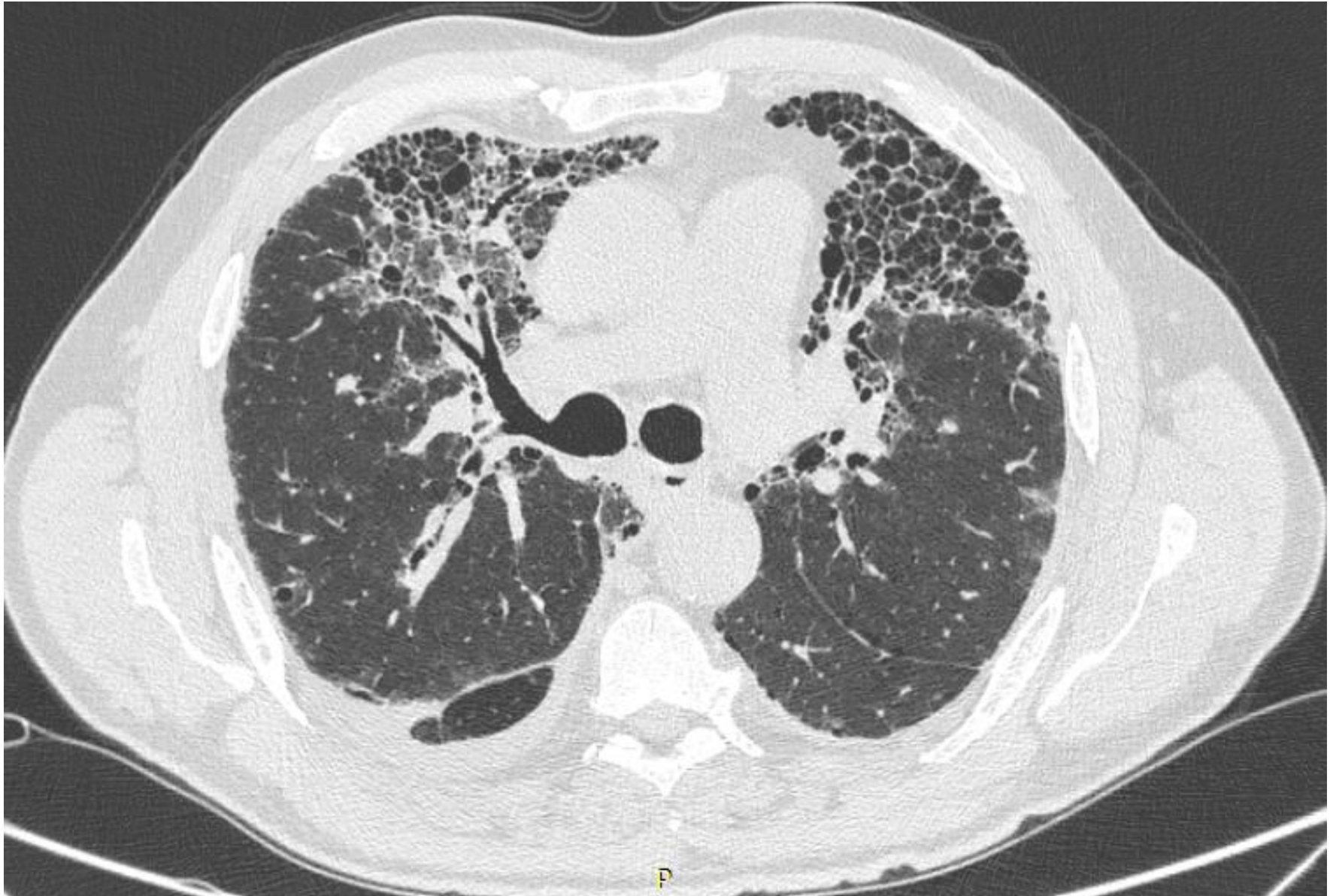


61M, progressive dyspnea on exertion, RA



Exuberant honeycombing

Involvement of the anterior segments of the upper lobes



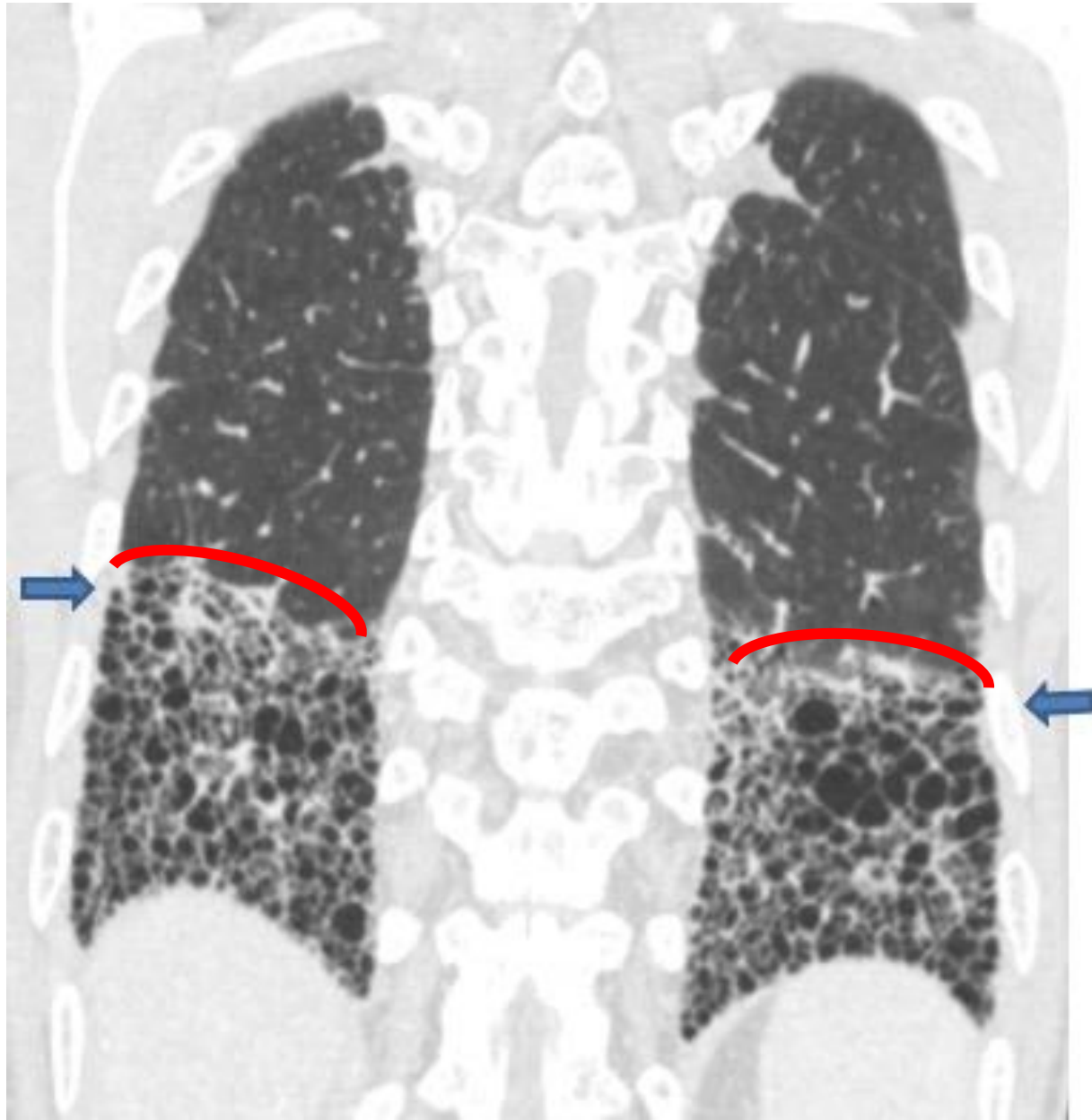
Sagittal reconstruction

4 corner's sign

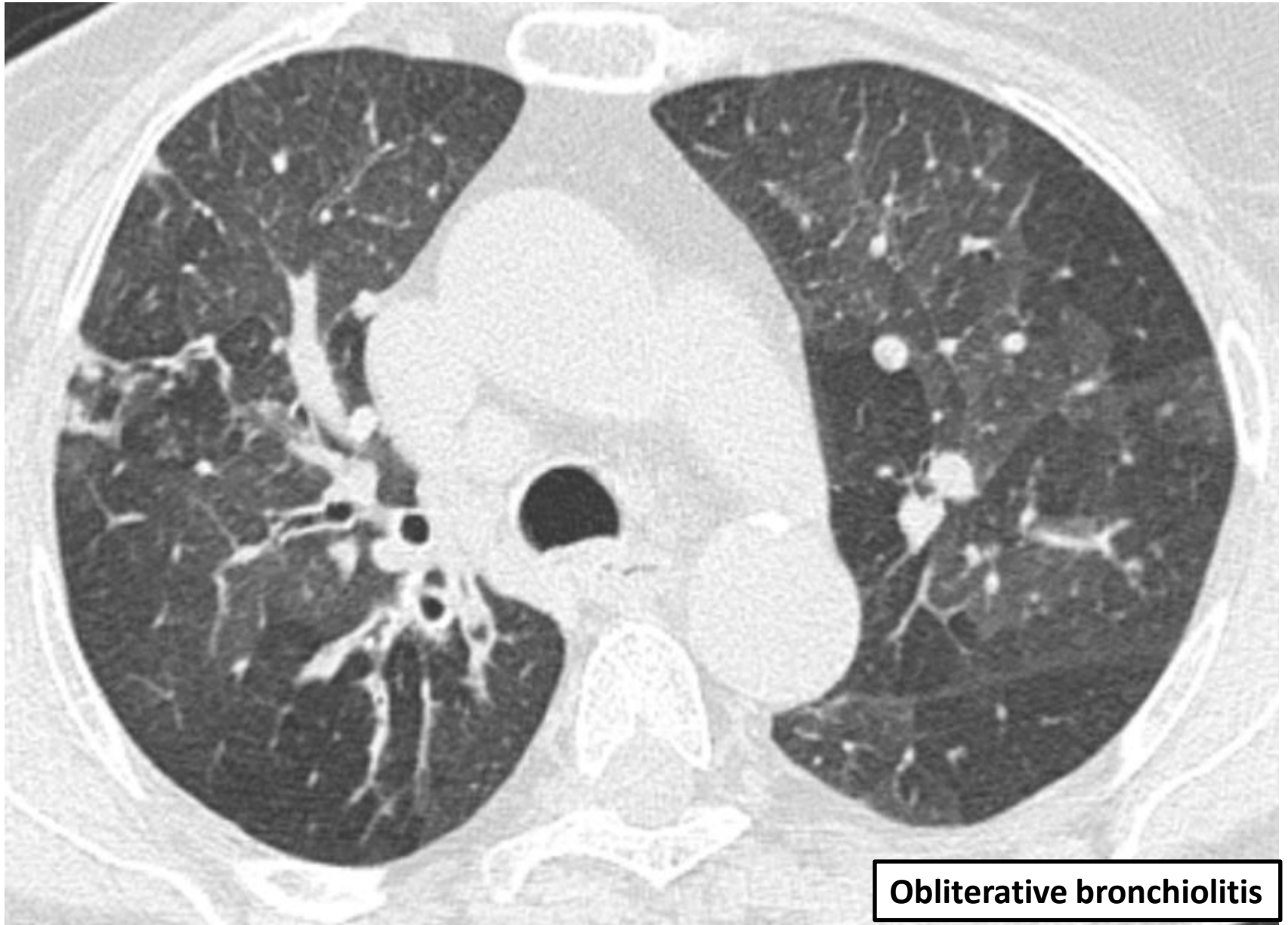
Exuberant honeycombing



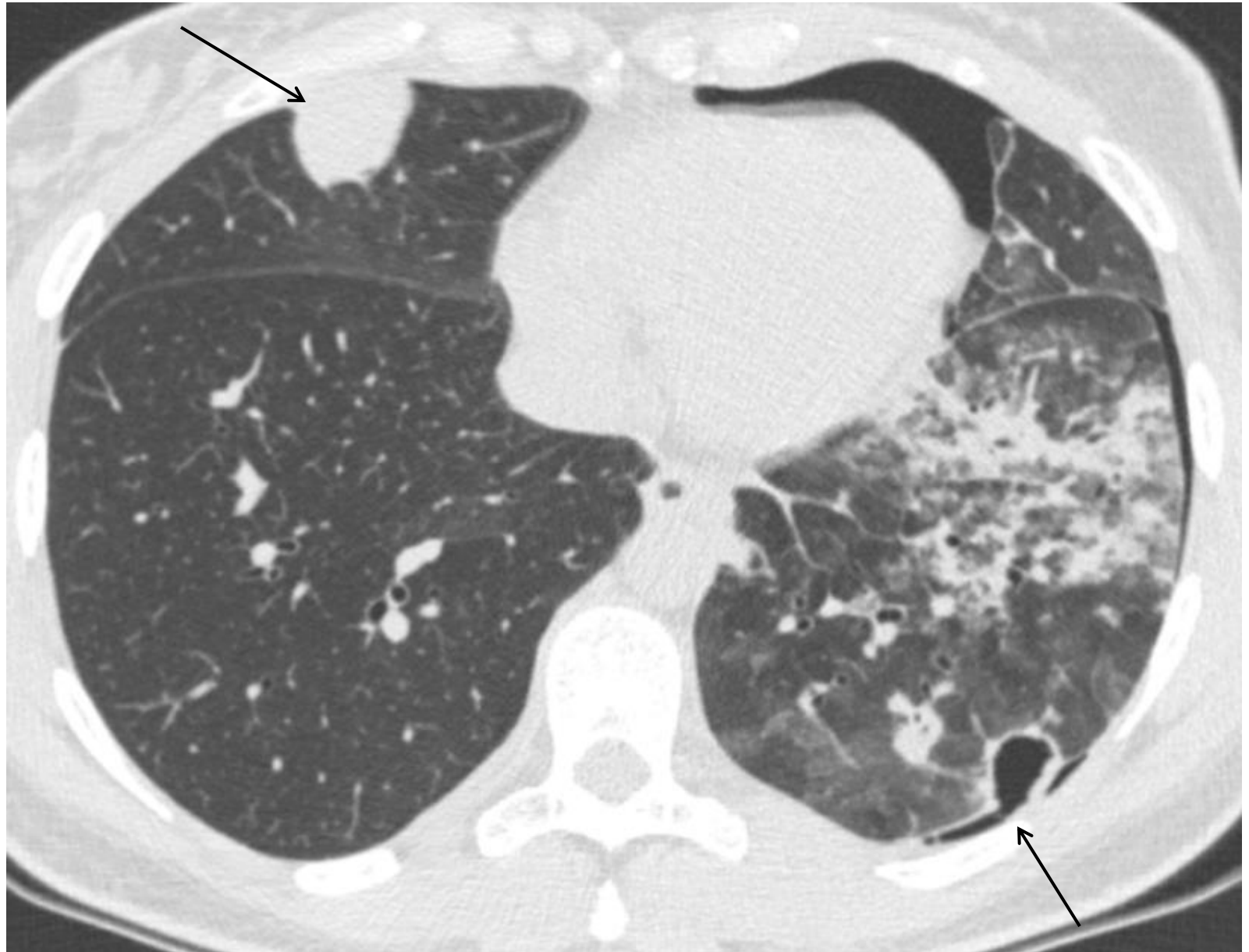
Straight edge sign



77F-RA



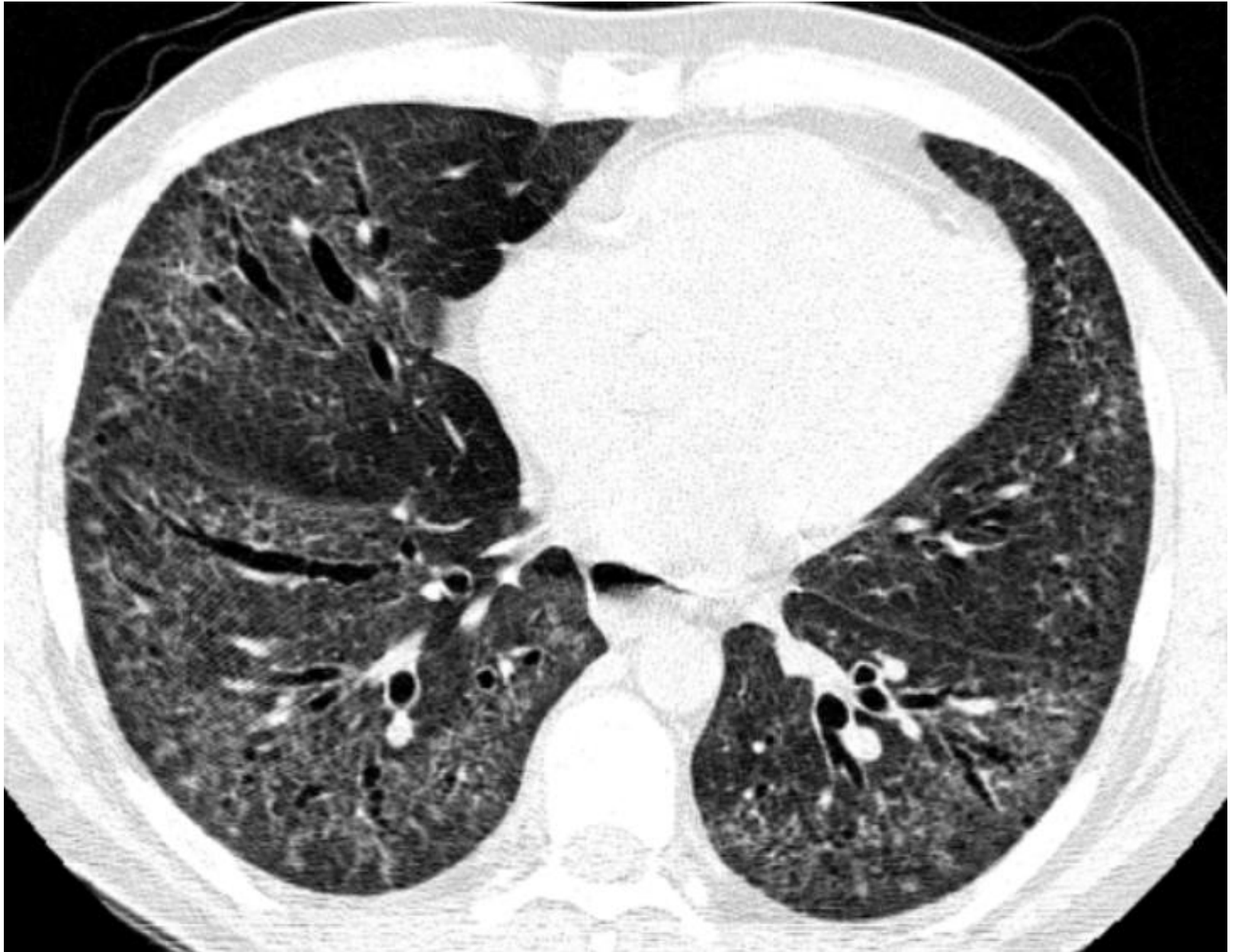
33F-RA



33F-RA. After 1 year



Systemic sclerosis

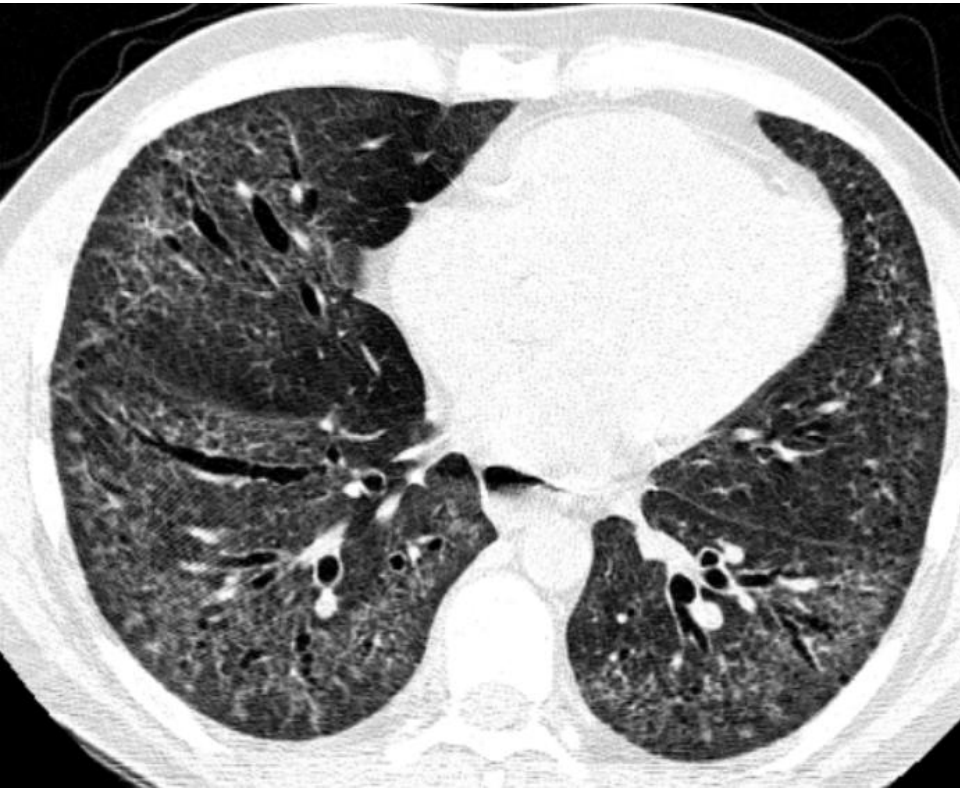


Bouros D, et al. Am J Respir Crit Care Med. 2002 Jun 15;165(12):1581-6.

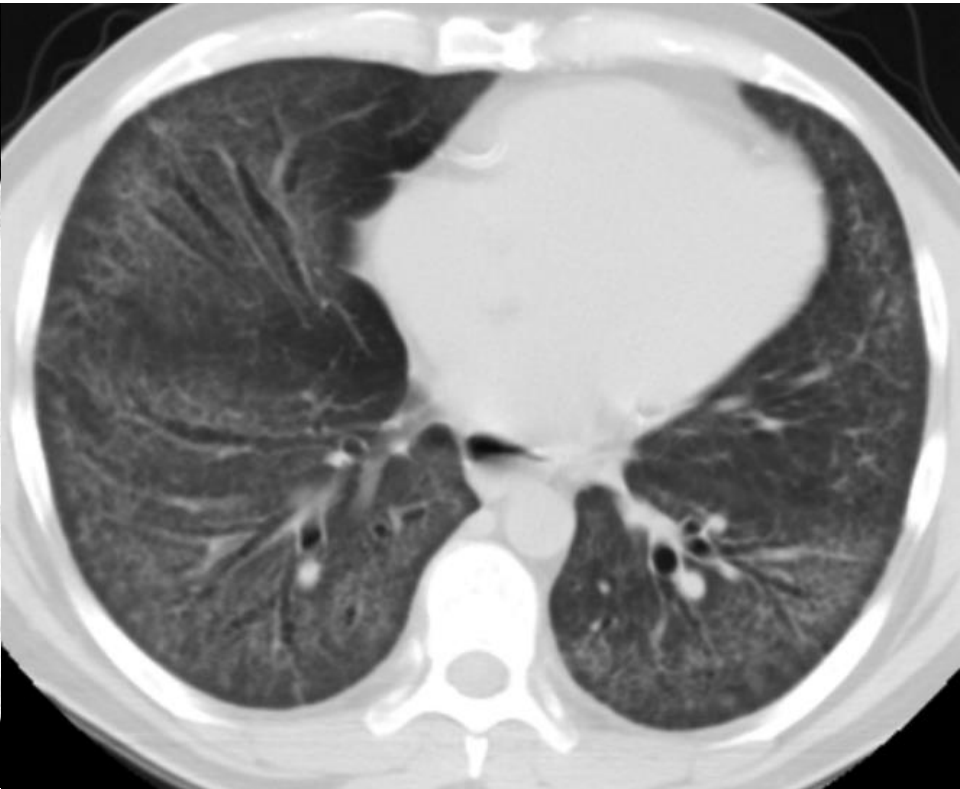
Impact of thickness



Impact of thickness

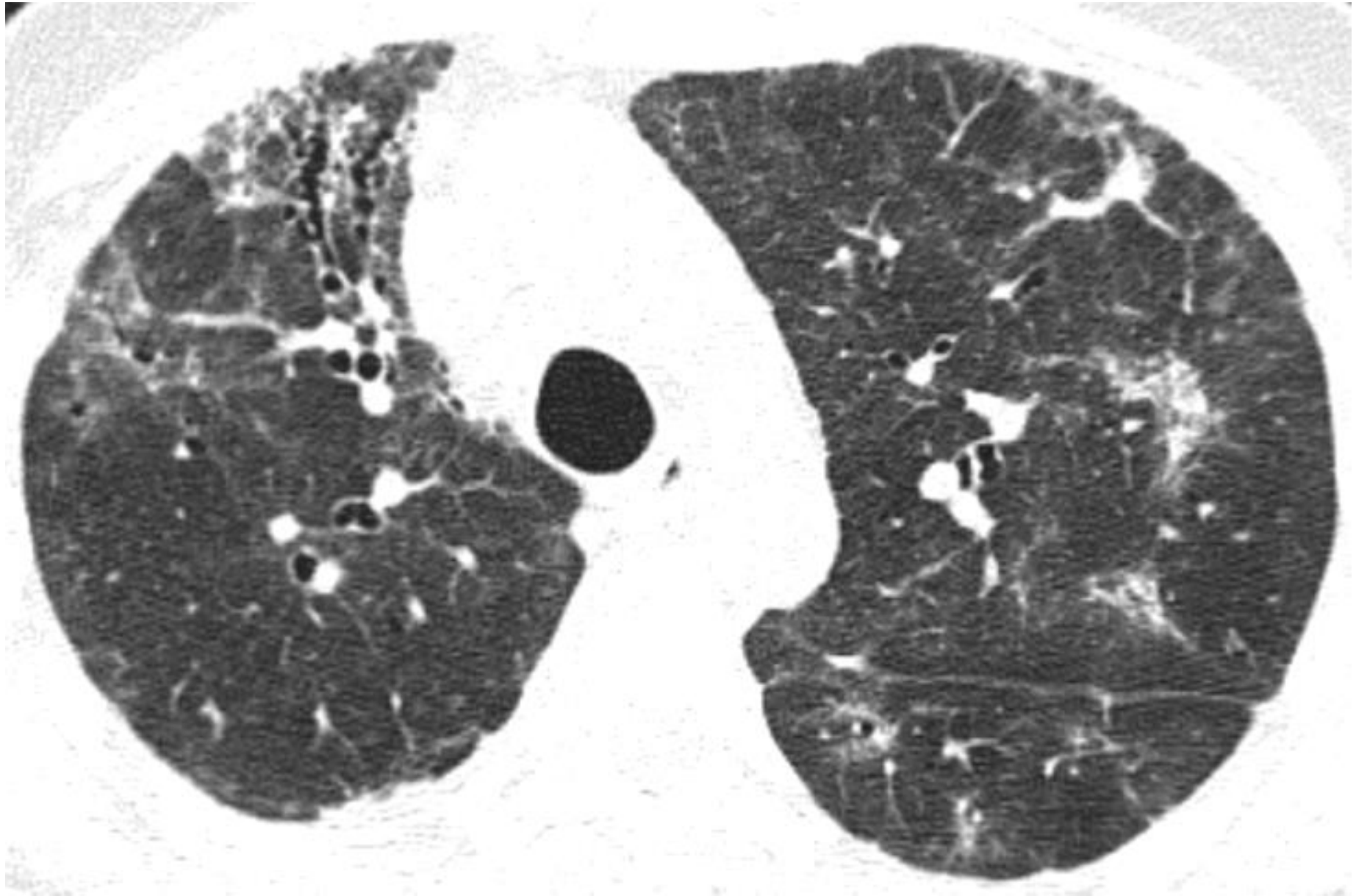


1,3mm

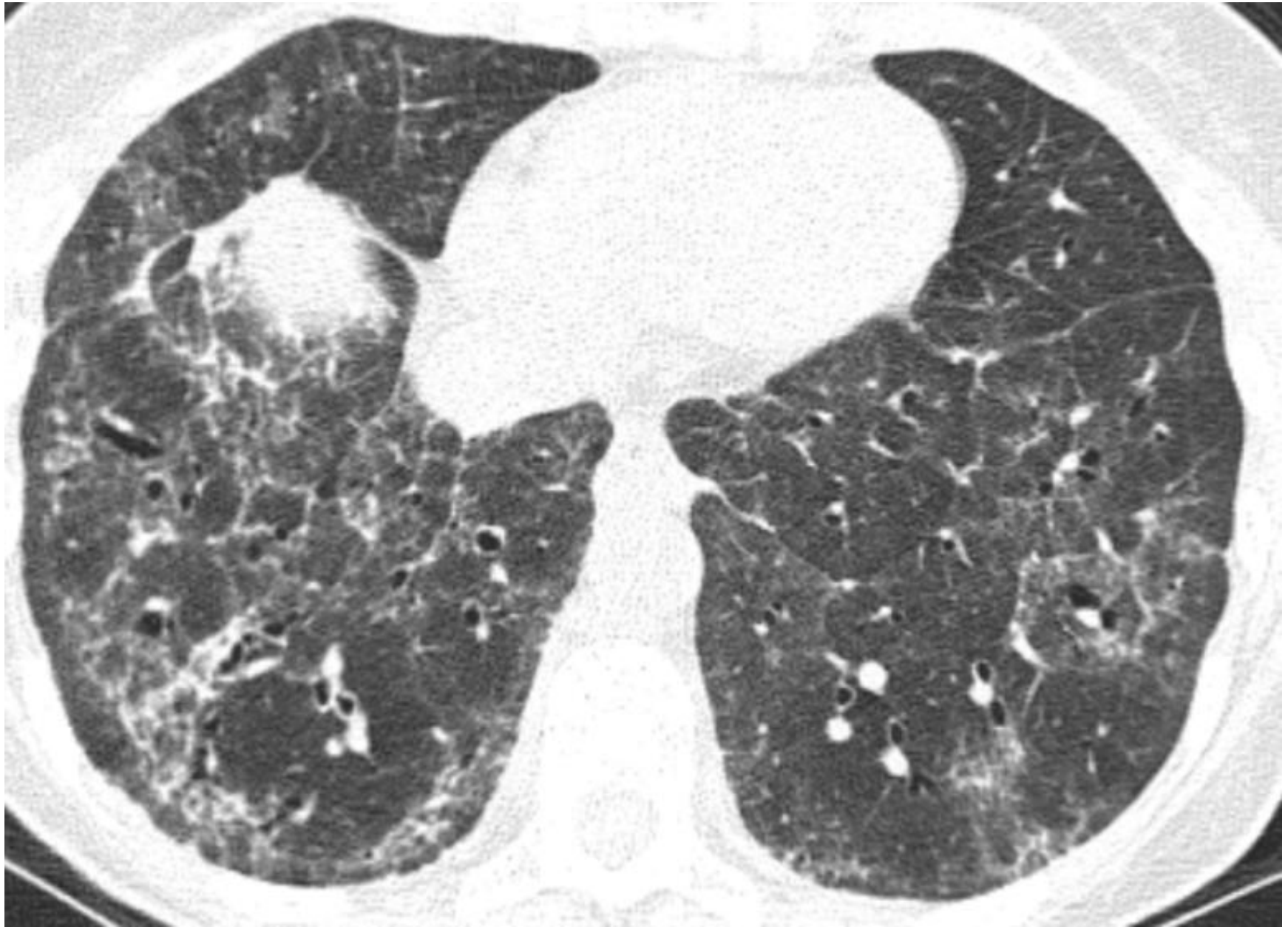


7,5 mm

Dermatomyositis-polymyositis. 65-F



Dermatomyositis-polymyositis. 65-F



70F



In terms of histological pattern I classify th
However, there are areas of bronchocentricity
this being UIP/IPF, I am less convinced (i.e.
and would equally consider chronic hypersensi
interesting case. Your blocks are hereby returne

With best wishes.

Yours sincerely,

Andrew Nicholson

Professor Andrew G. Nicholson, FRCPath, D.
Consultant in Histopathology

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
Εθνικόν και Καποδιστριακόν
Πανεπιστήμιον Αθηνών
— ΙΔΡΥΘΕΝ ΤΟ 1837 —

Μεσογείας Αδελφ 78, 11527, Γκάζι - Αθήνα

ΕΚΔΟΣΗ ΕΠΙΣΤΗΜΟΝΙΚΗΣ - ΙΑΤΡΙΚΗΣ ΕΚΔΟΣΗΣ
ΤΟΜΕΑΣ ΒΑΣΙΚΩΝ ΙΑΤΡΙΚΩΝ ΕΠΙΣΤΗΜΩΝ
ΕΡΓΑΣΤΗΡΙΟ ΦΥΣΙΟΛΟΓΙΑΣ - ΦΥΣΙΟΛΟΓΕΙΟΝ
Μονάδα Μοριακής Φυσιολογίας & Κληνικές Εφαρμογές
Διευθυντής: Αναστασίου - Καθηγητής: Γαβριήλ Νάλλας

Τηλ: 210-740 2007, Fax: 210-740 2071

ΟΝΟΜΑΤΕΠΩΝΥΜΟ: [REDACTED]

ΗΜΕΡΟΜΗΝΙΑ: [REDACTED]

ΑΝΟΣΟΛΟΓΙΚΟ ΠΡΟΦΙΛ

Εξετάζόμενο υλικό: Ορός αίματος

Μέθοδος: Χρήση του αντιδραστηρίου EUROLINE Autoimmune Inflammatory Myopathies 16 Ag (IgG)

ΑΥΤΟΑΝΤΙΣΩΜΑ	ΕΝΤΑΣΗ ΣΗΜΑΤΟΣ	ΑΠΟΤΕΛΕΣΜΑ
Mi-2α	2	ΑΡΝΗΤΙΚΟ
Mi-2β	2	ΑΡΝΗΤΙΚΟ
TIF1γ	2	ΑΡΝΗΤΙΚΟ
MDA5	3	ΑΡΝΗΤΙΚΟ
NXP2	2	ΑΡΝΗΤΙΚΟ
SAE1	4	ΑΡΝΗΤΙΚΟ
Ku	2	ΑΡΝΗΤΙΚΟ
Pm/ScI-100	2	ΑΡΝΗΤΙΚΟ
Pm/ScI-75	2	ΑΡΝΗΤΙΚΟ
Jo-1	2	ΑΡΝΗΤΙΚΟ
SRP	2	ΑΡΝΗΤΙΚΟ
PL-7	65	ΘΕΤΙΚΟ
PL-12	6	ΟΡΙΑΚΗ ΤΙΜΗ
EJ	2	ΑΡΝΗΤΙΚΟ
OJ	2	ΑΡΝΗΤΙΚΟ
Ro-52	2	ΑΡΝΗΤΙΚΟ

ΕΝΤΑΣΗ ΣΗΜΑΤΟΣ	ΑΠΟΤΕΛΕΣΜΑ
0-5: 0	ΑΡΝΗΤΙΚΟ
6-10: (+)	ΟΡΙΑΚΗ ΤΙΜΗ
11-25: +	ΑΣΘΕΝΩΣ ΘΕΤΙΚΟ
≥26: ++, +++	ΘΕΤΙΚΟ

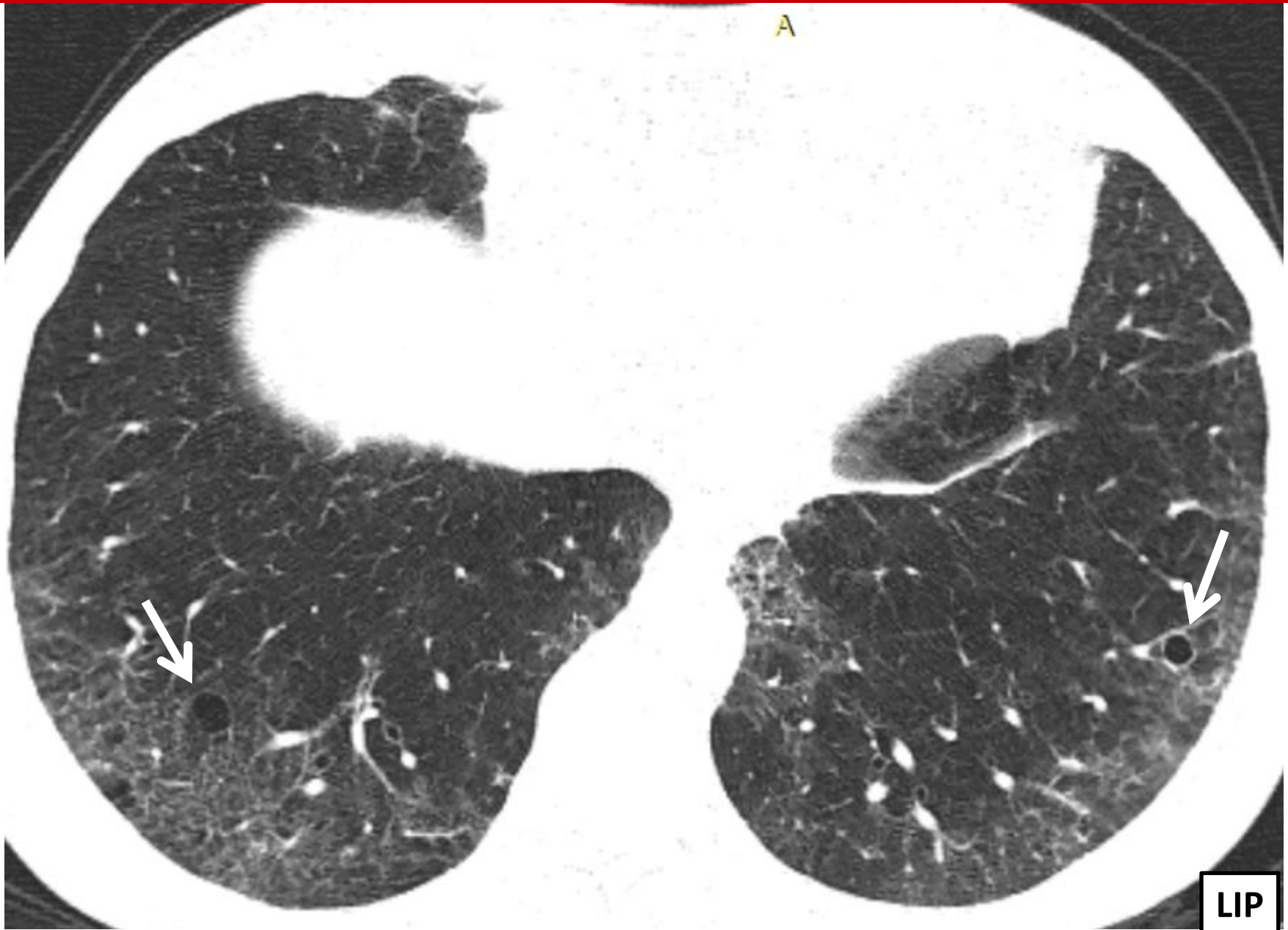
Η αξιολόγηση των αποτελεσμάτων γίνεται βάσει των οδηγιών χρήσης
από την εταιρεία-προμηθευτή EUROIMMUN Medizinische Labordiagnostika AG

Antisynthetase syndrome vs hypersensitivity pneumonitis

Table 1. Ten reasons allowing ASyS to masquerade as HP

Reason	Explanation
Frequency	In an ILD unit, HP is a much more common ($\times 15$) diagnosis than ASyS
Exposure to antigen known to cause HP	Shifts diagnostic consideration toward HP (OR: 38.8), altering the interpretation and meaning of imaging and pathology studies
Absence of muscle weakness and myalgia	In ASyS, lung involvement can be the initial manifestation, or muscle involvement can be subclinical (CADM), especially in the presence of anti-PL-7, anti-PL-12, anti-KS, anti-EJ, and anti-OJ
Absence of extrapulmonary manifestations	Characteristic findings such as mechanic hands, Gottron papules, periorbital edema, and skin erythema can be absent or can go unnoticed, unless there is a high index of suspicion and the necessary expertise
HRCT	HRCT patterns (NSIP, OP, mixed NSIP/OP, and f-NSIP) in ASyS are not specific and do not exclude HP In ASyS, there can be diffuse areas of GGO resulting in a mosaic attenuation pattern, which can be misleading favoring a diagnosis of HP
Normal muscle enzymes	In the absence of myositis or in CADM, muscle enzymes (CK and aldolase) are within normal limits
Negative ANA testing	It does not exclude the diagnosis of myositis, DM, or ASyS
Negative ENA testing	It does not exclude the diagnosis of myositis, DM, or ASyS as it includes only anti-Jo-1
BAL	In ASyS, there can be pronounced lymphocytosis (>30 – 40%), which can be misleading favoring the more common diagnosis of HP
Pathology	It can mimic probable HP pattern

Sjogren syndrome. 62M



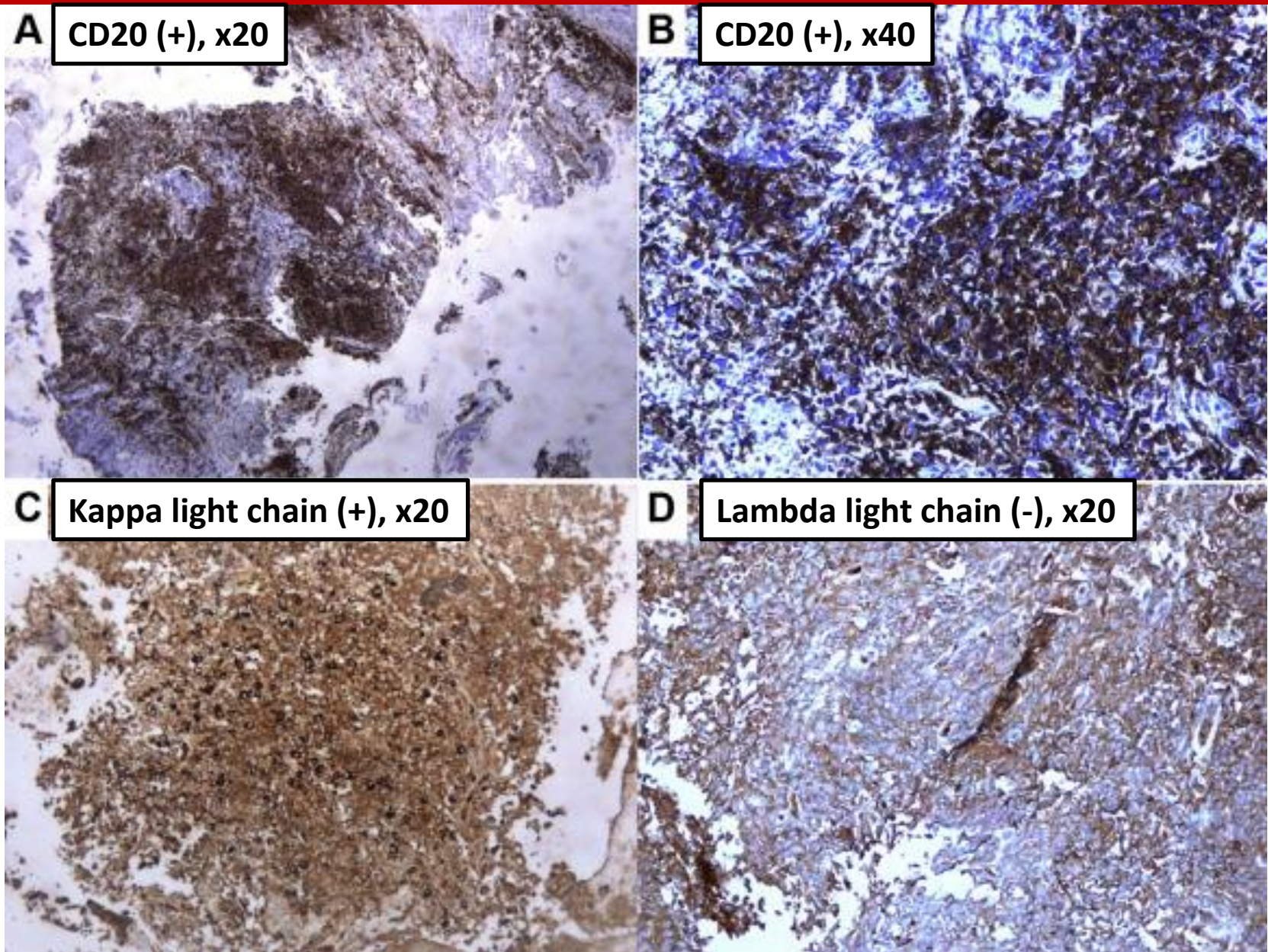
Sjogren syndrome. 77F



Sjogren syndrome. 77F



Sjogren syndrome. 77F



Συμπεράσματα

- Τα νοσήματα του συνδετικού ιστού μπορεί να προσβάλλουν τον πνεύμονα ποικιλοτρόπως
- Η υπολογιστική τομογραφία θώρακος υψηλής ευκρίνειας είναι εξαιρετικά χρήσιμο εργαλείο
- Επιτρέπει τη συσχέτιση με παθολογοανατομικά ευρήματα
- Συνεργασία ρευματολόγων και πνευμονολόγων

- **Ευχαριστώ!**