



مرکز آموزشی پژوهشی درمانی
حضرت رسول اکرم (ص)



Internal Medicine CPC

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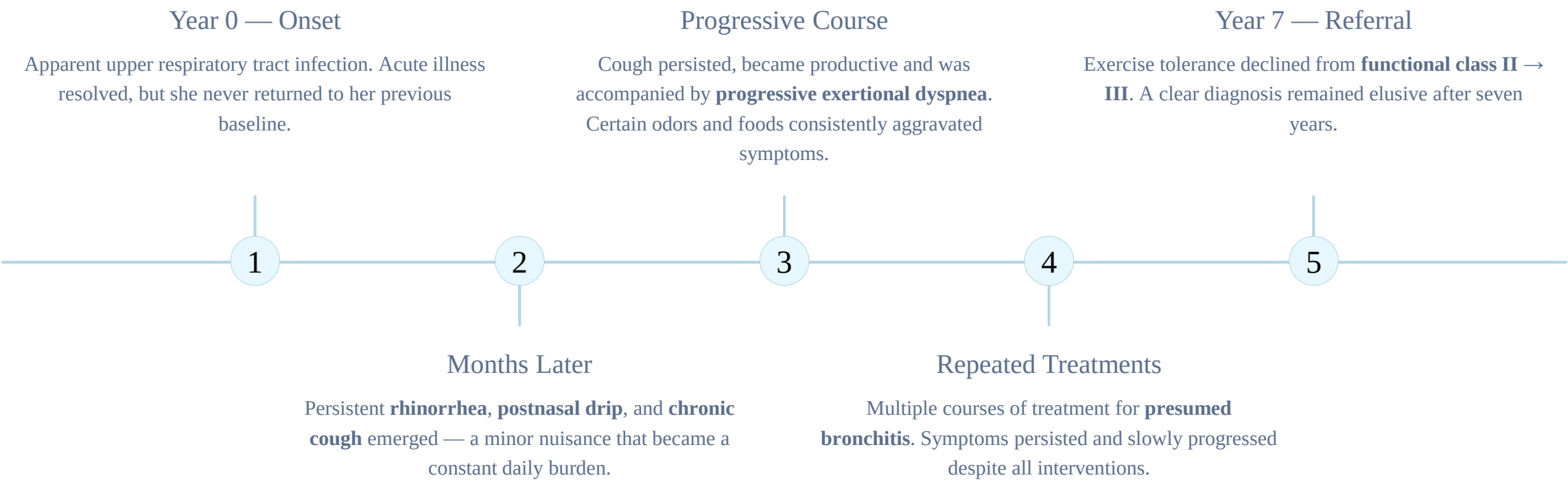
This case rewards patience.

Watch closely as the pieces come together.

History of Present Illness

CHIEF COMPLAINT

A **27-year-old woman** was referred to our pulmonary clinic because of persistent respiratory symptoms including **cough**, **PND** and **dyspnea** that had progressively worsened despite multiple medical evaluations and treatments.



⚠ Seven years had passed since symptom onset — yet no clear explanation had been established.

Cont.

1

PMHx

Recurrent Sinusitis

2

Cardiac, Renal, Hepatic Hx

Unremarkable

3

FHx

Similar respiratory symptoms in sisters

4

DHx

Different antibiotics and symptom therapy was prescribed.

5

HHx

C/s–, waterpipe–, baking–

Physical Examination

GENERAL & VITALS

Comfortable at rest, **no acute distress**. Vital signs stable. O₂ saturation **95% on room air**.

HEAD & NECK

JVD — | LAD — | Pallor — | Icterus — | Sinus tenderness —

📋 **Post-nasal drip (PND)** was observed on examination.

ABDOMEN & EXTREMITIES

Abdomen soft, non-distended, no organomegaly. Extremities warm with full symmetric pulses. Edema — | Cyanosis —

CHEST FINDINGS

Inspection

Normal tracheal position and **symmetric chest expansion**.

Auscultation — Lungs

Bilateral basilar **fine crackles**. Bilateral diffuse **coarse crackles**, predominantly **right-sided**.

Auscultation — Heart

Normal S1 & S2. Gallop — | Murmur —

So...

What is your leading diagnosis at this point?

Take a moment. Form your differential before we proceed.



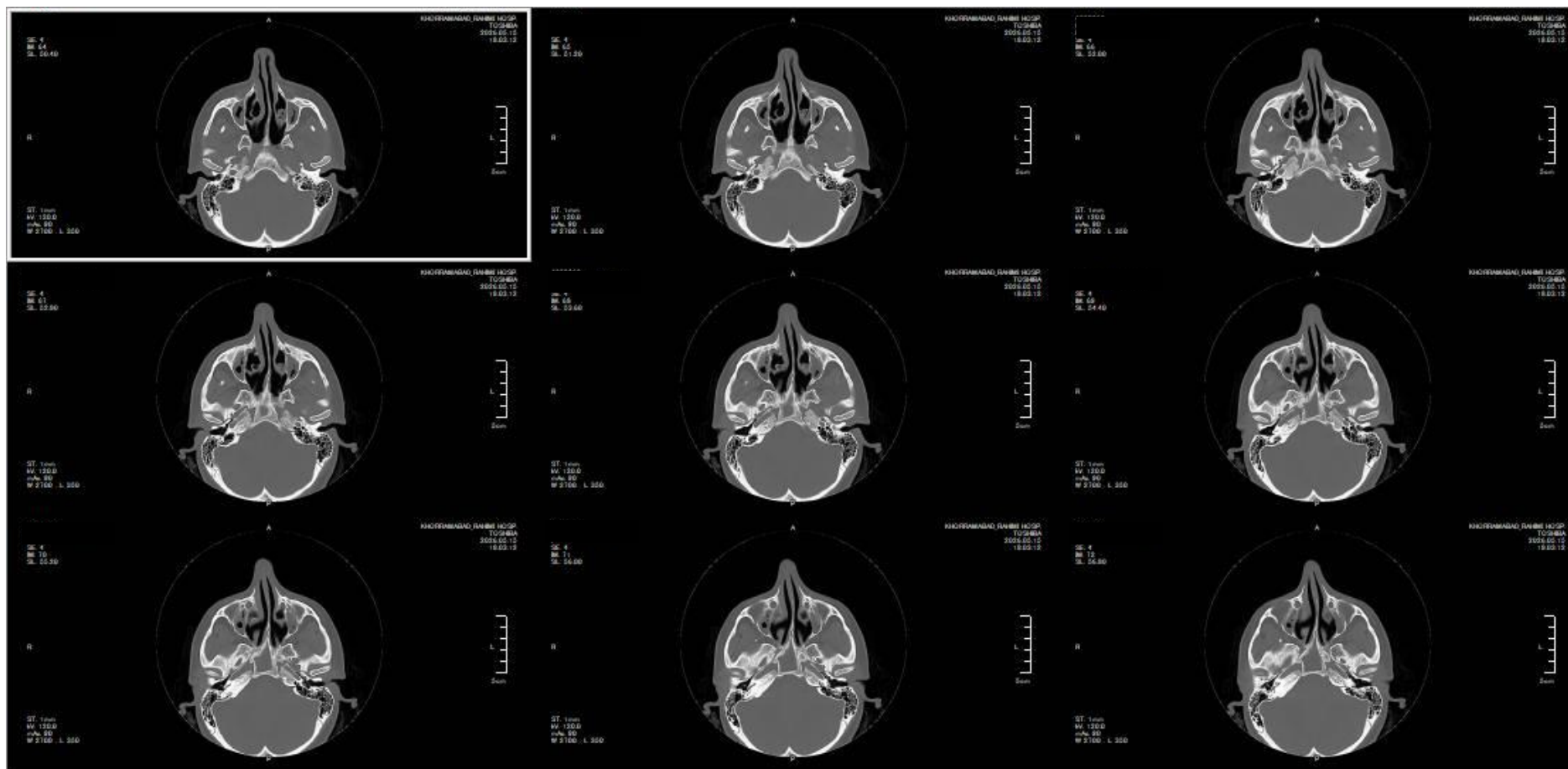
The examination has narrowed our focus. Now let's look at the imaging.

Chest X-ray

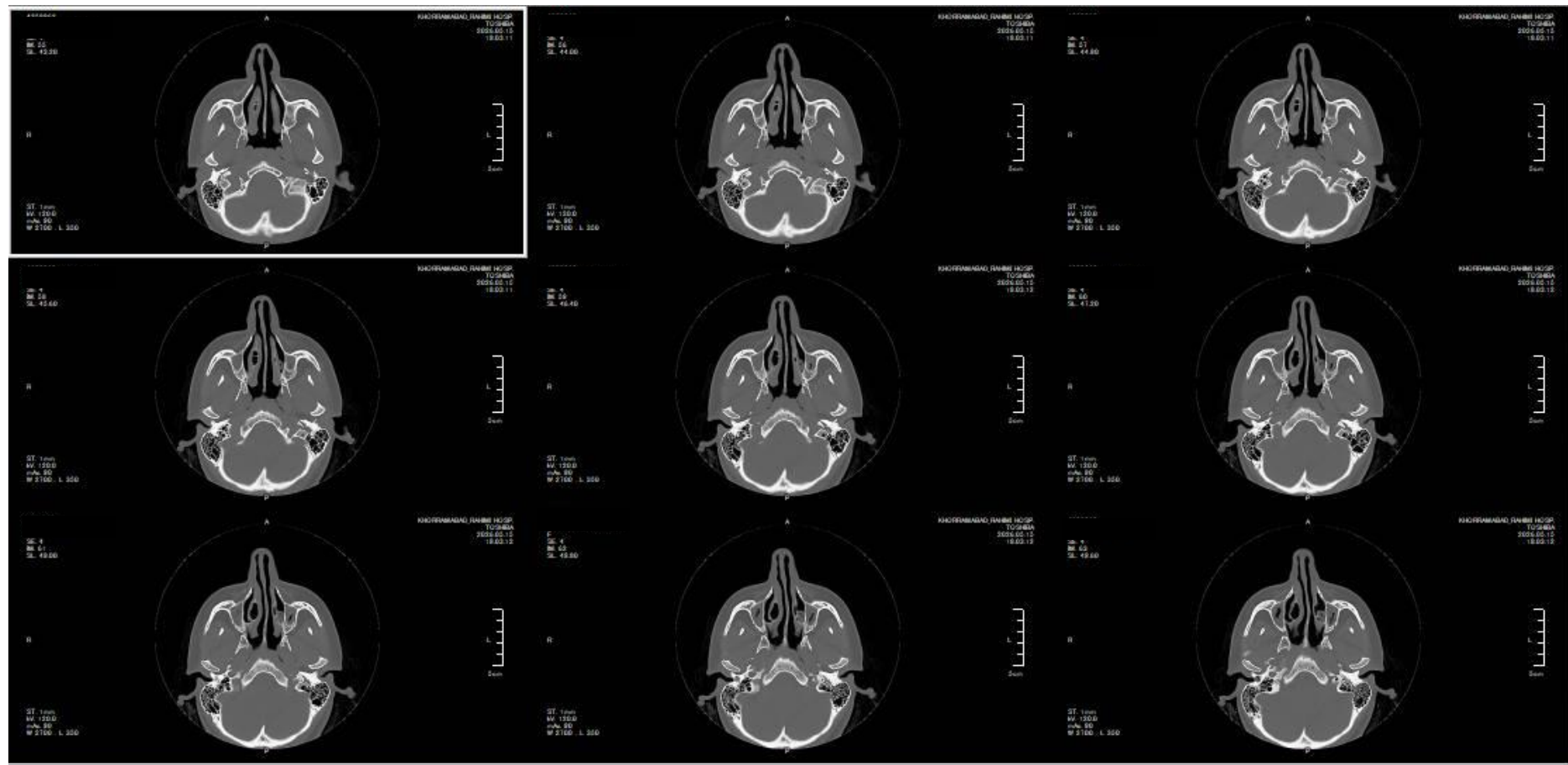
Nothing abnormal, except **hyperinflation**.



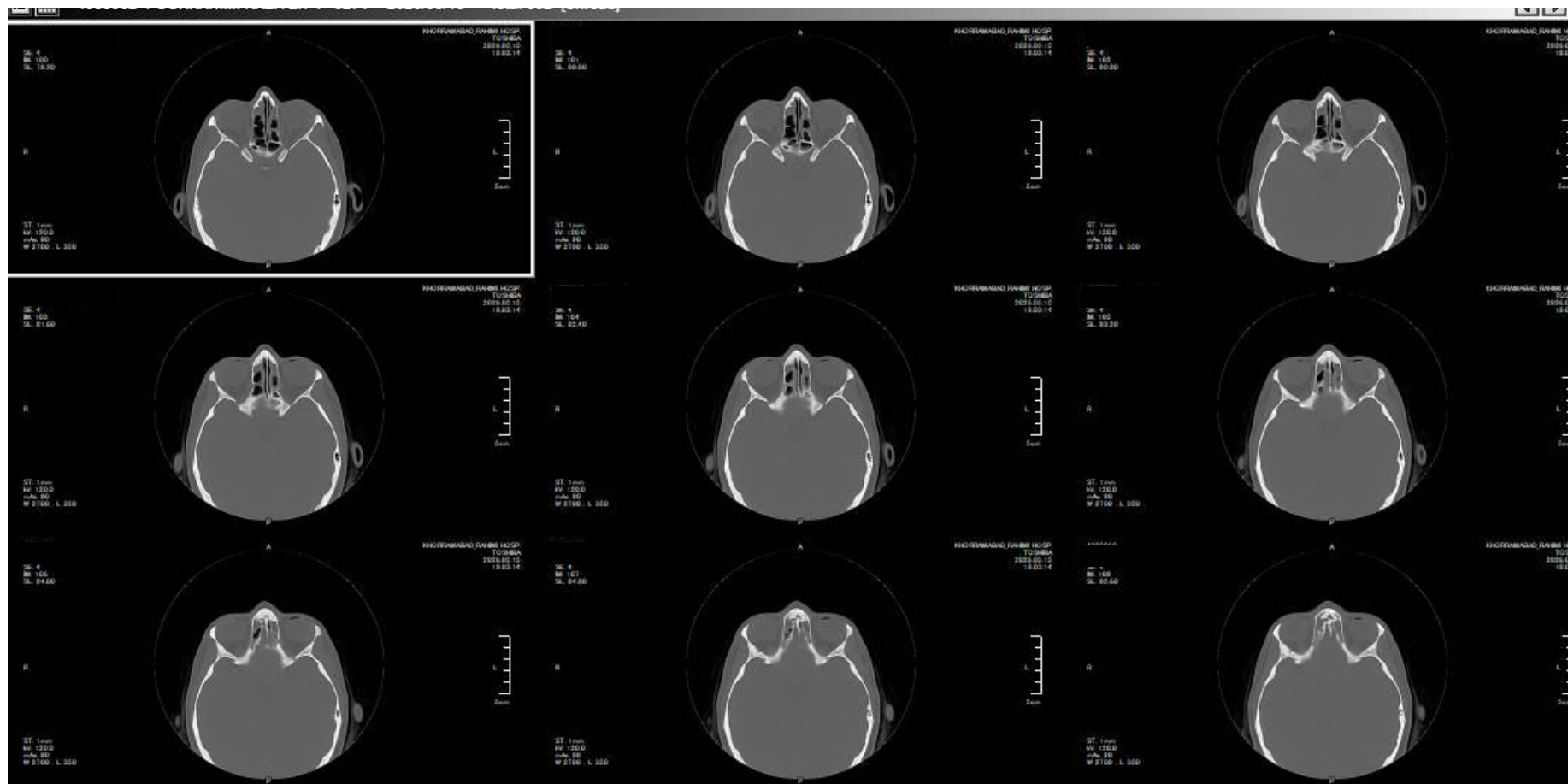
PNS CT scan



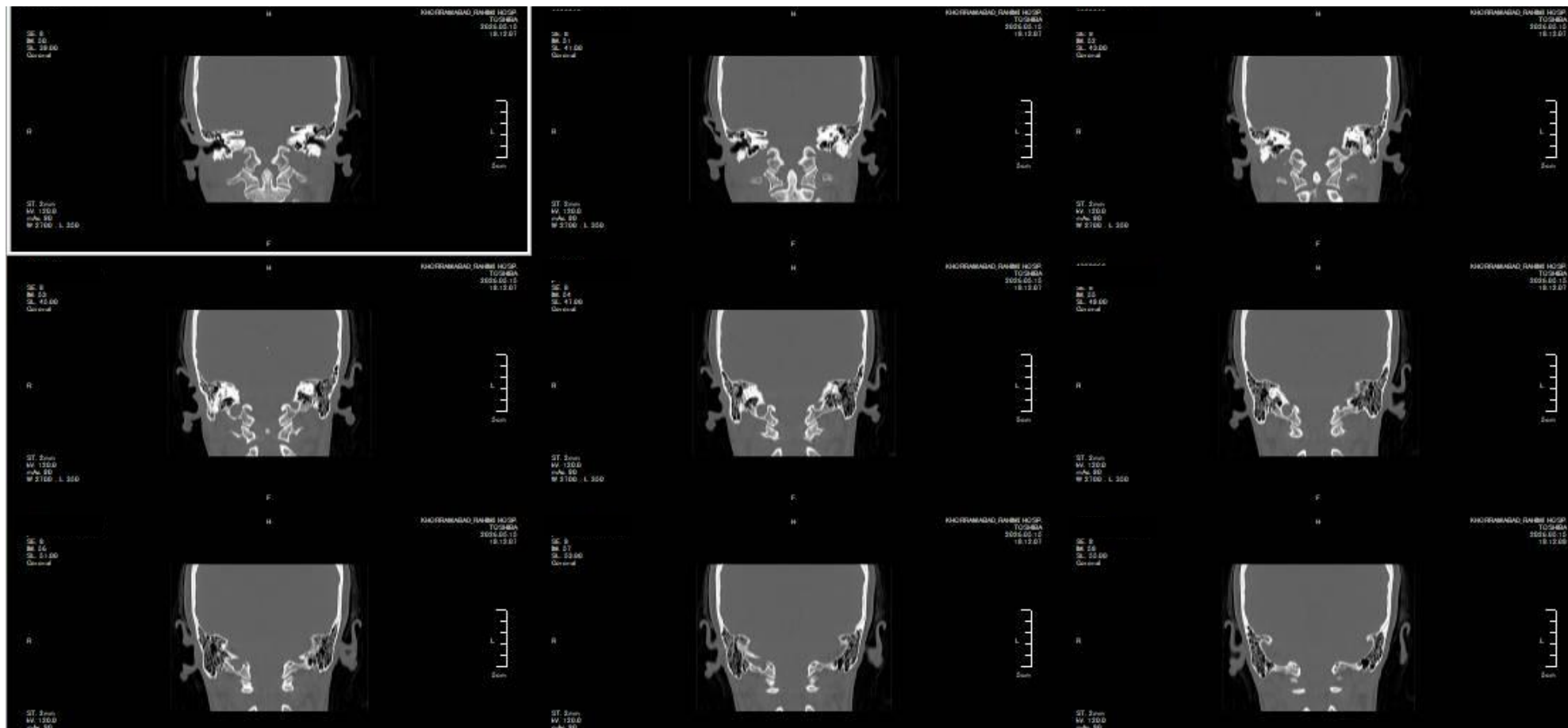
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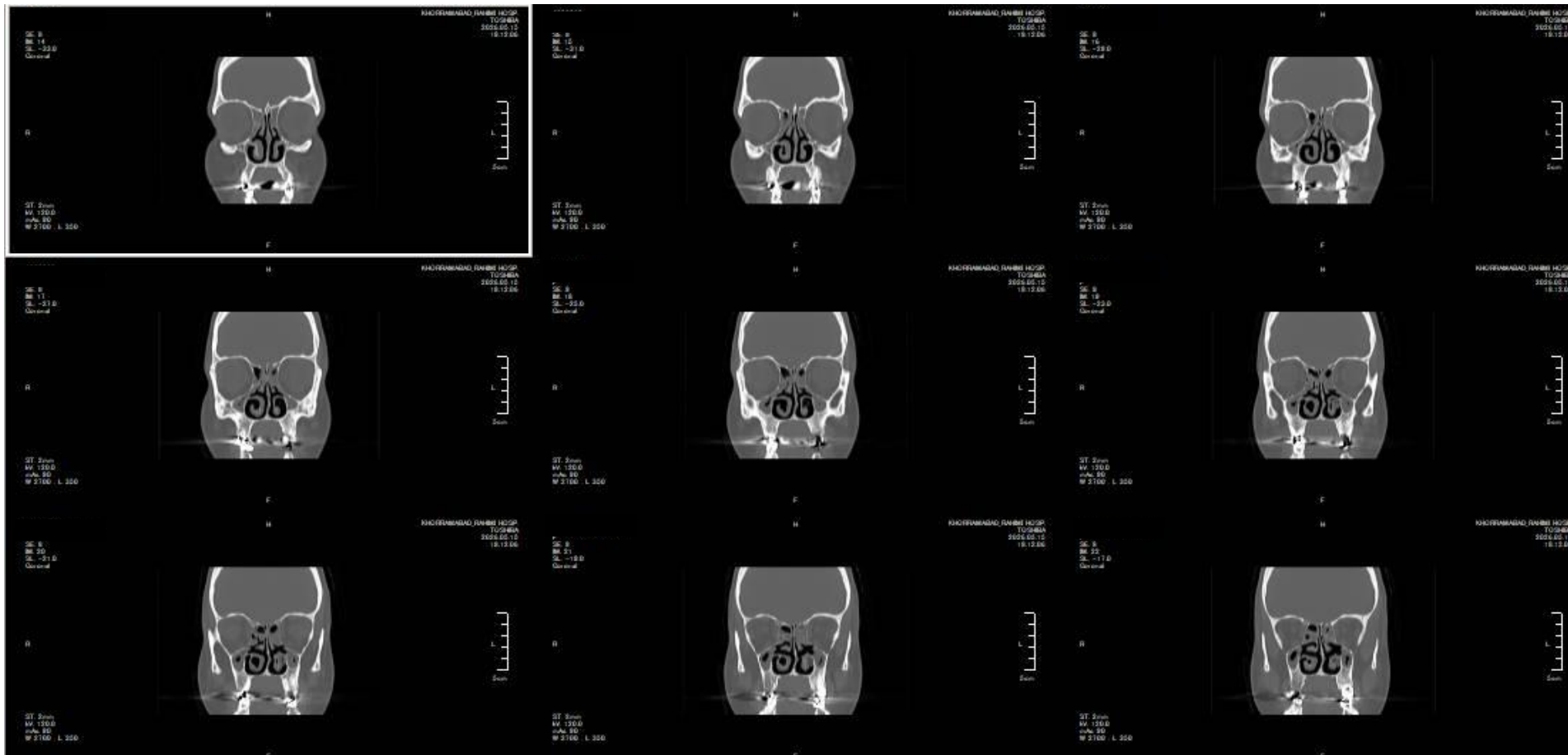
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PNS CT

Mucosal Thickening

Involving all paranasal sinuses.

Chronic Sinonasal Inflammation

Evidence of **long-standing inflammatory changes** throughout the sinonasal cavity.

No Acute Process

No acute air-fluid levels identified — this is a chronic, not acute, picture.

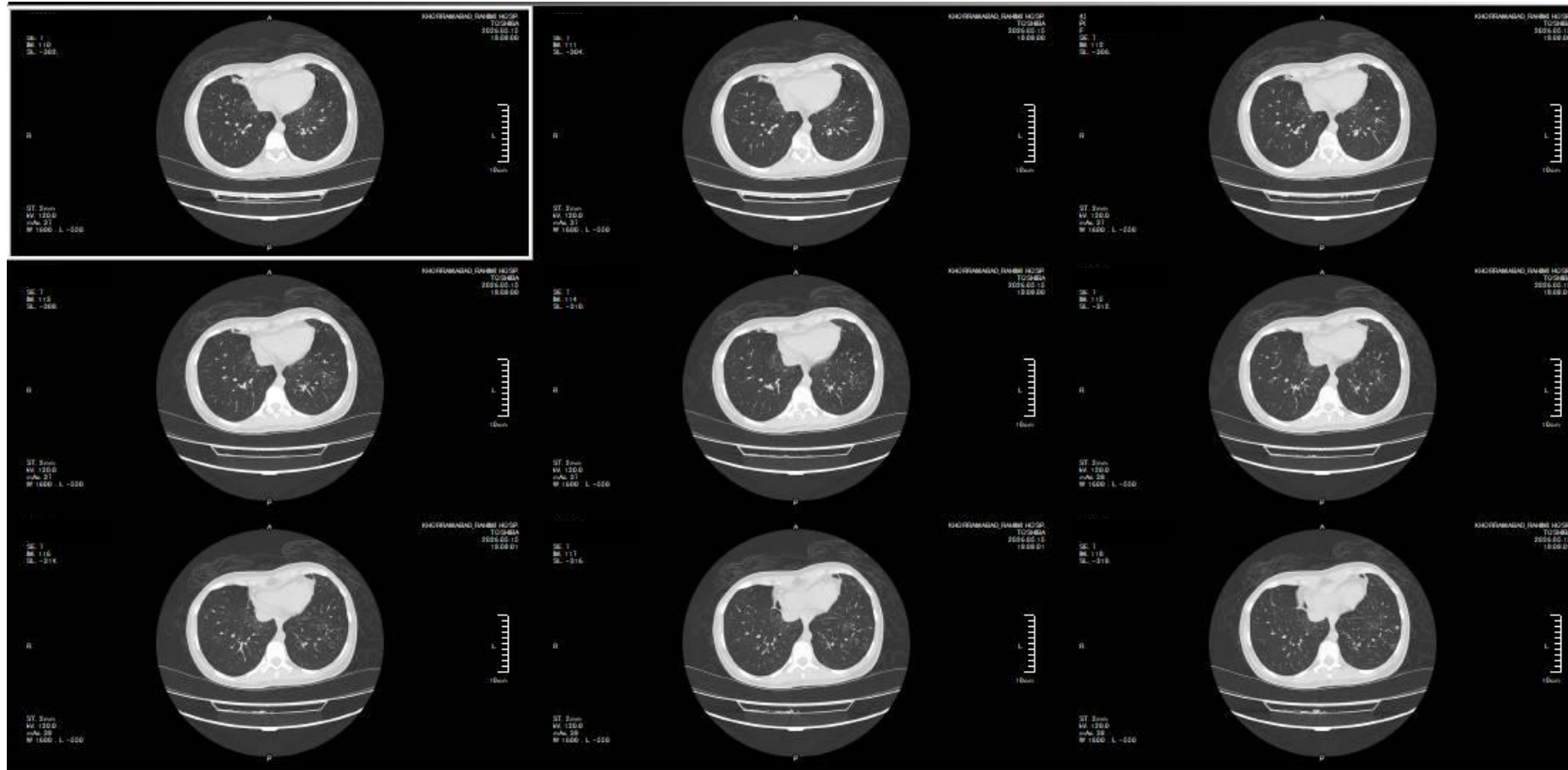


The upper airway findings are consistent with **chronic rhinosinusitis**. But the story doesn't end here.

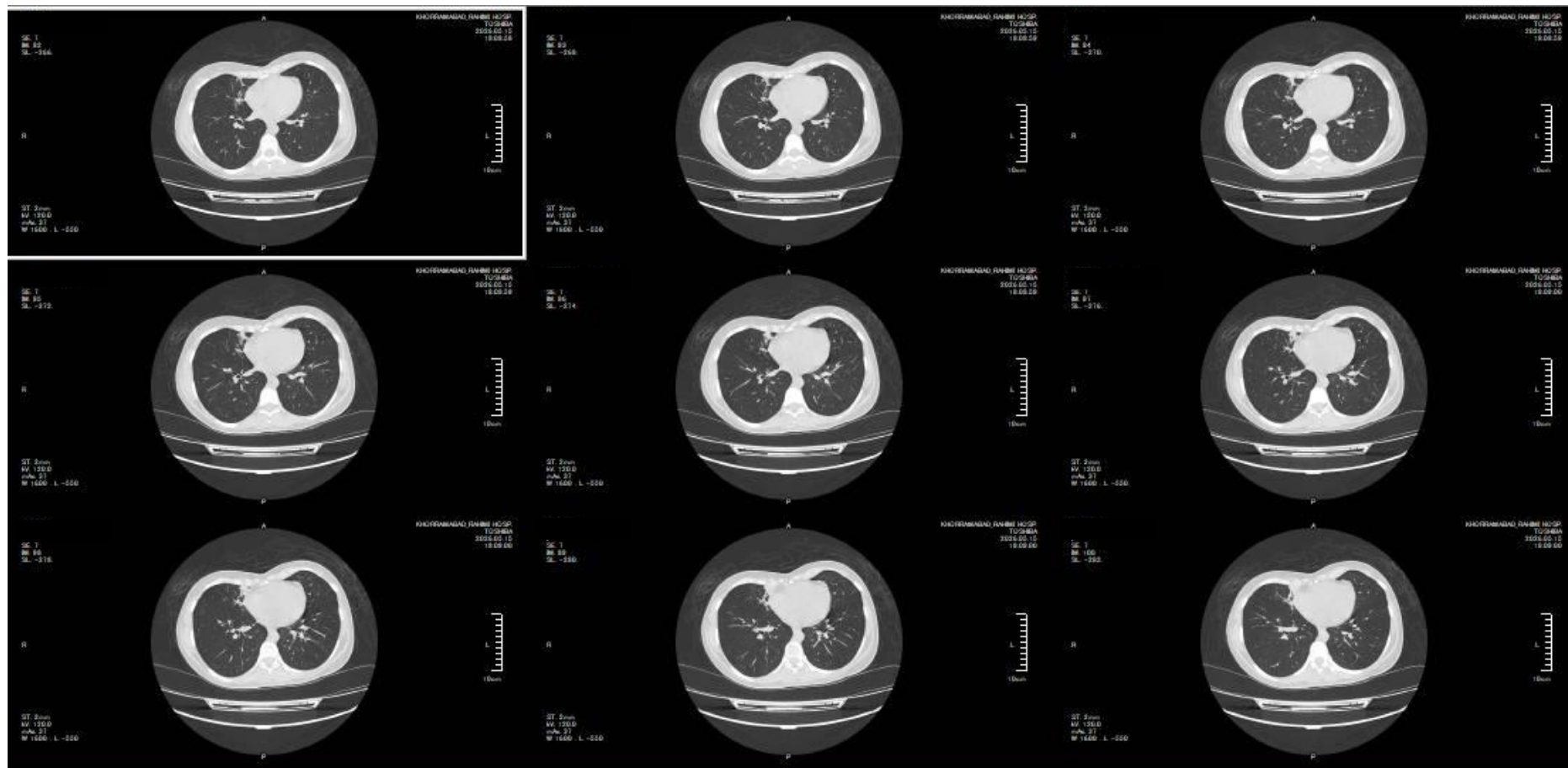
❏ **Pan-sinusitis**

At this point, we expanded our evaluation to the **lower respiratory tract**.

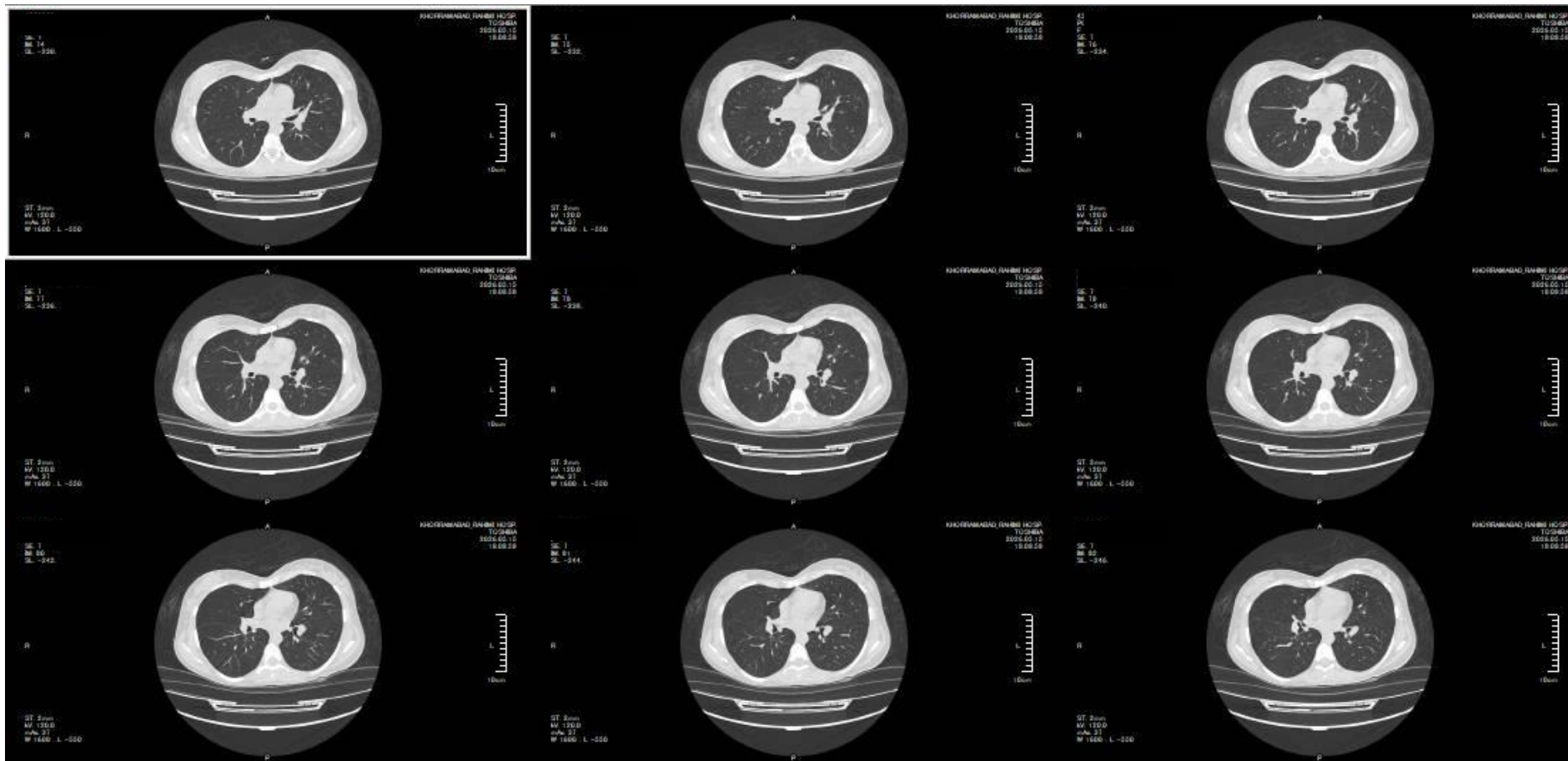
Chest CT scan



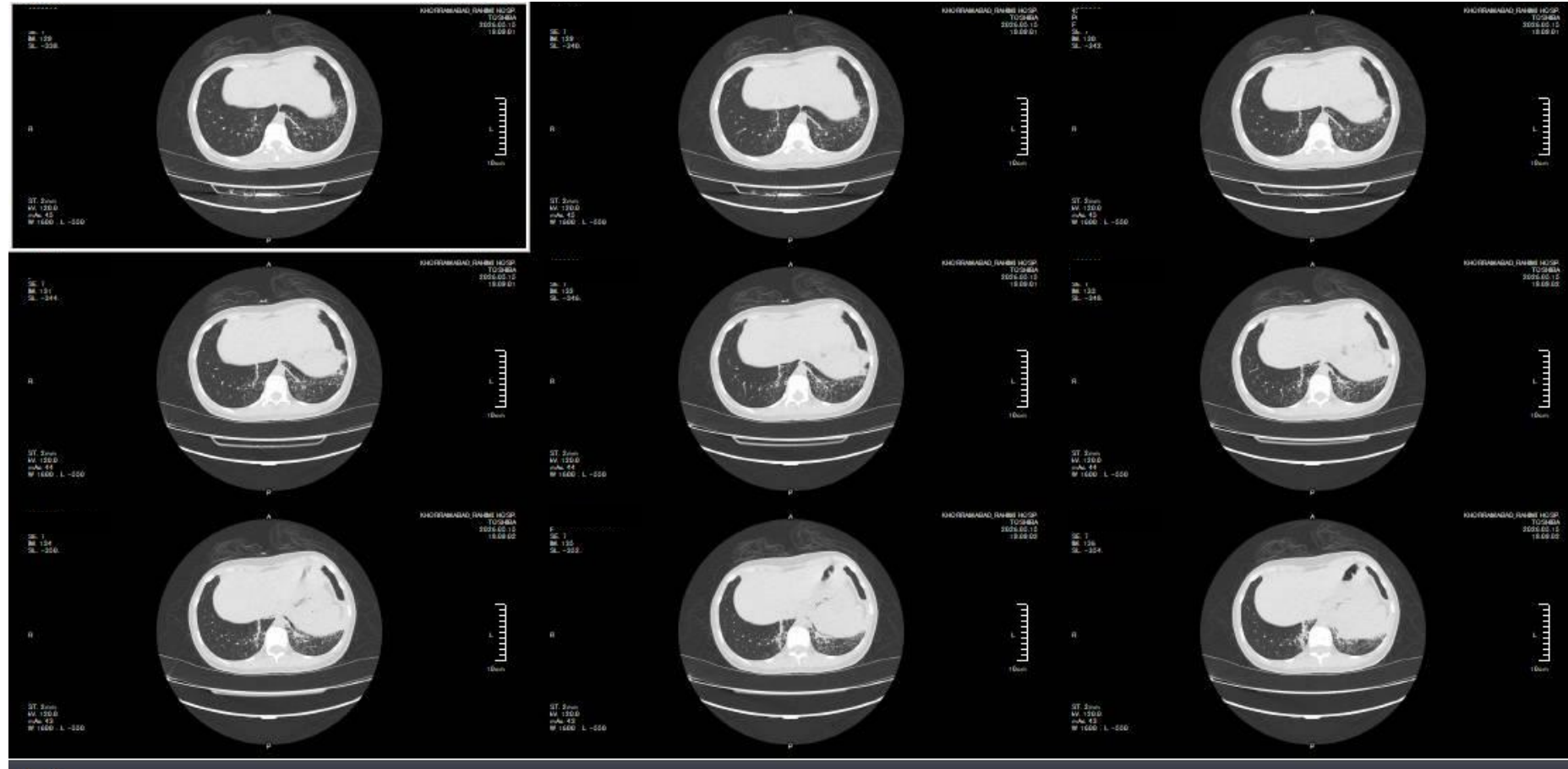
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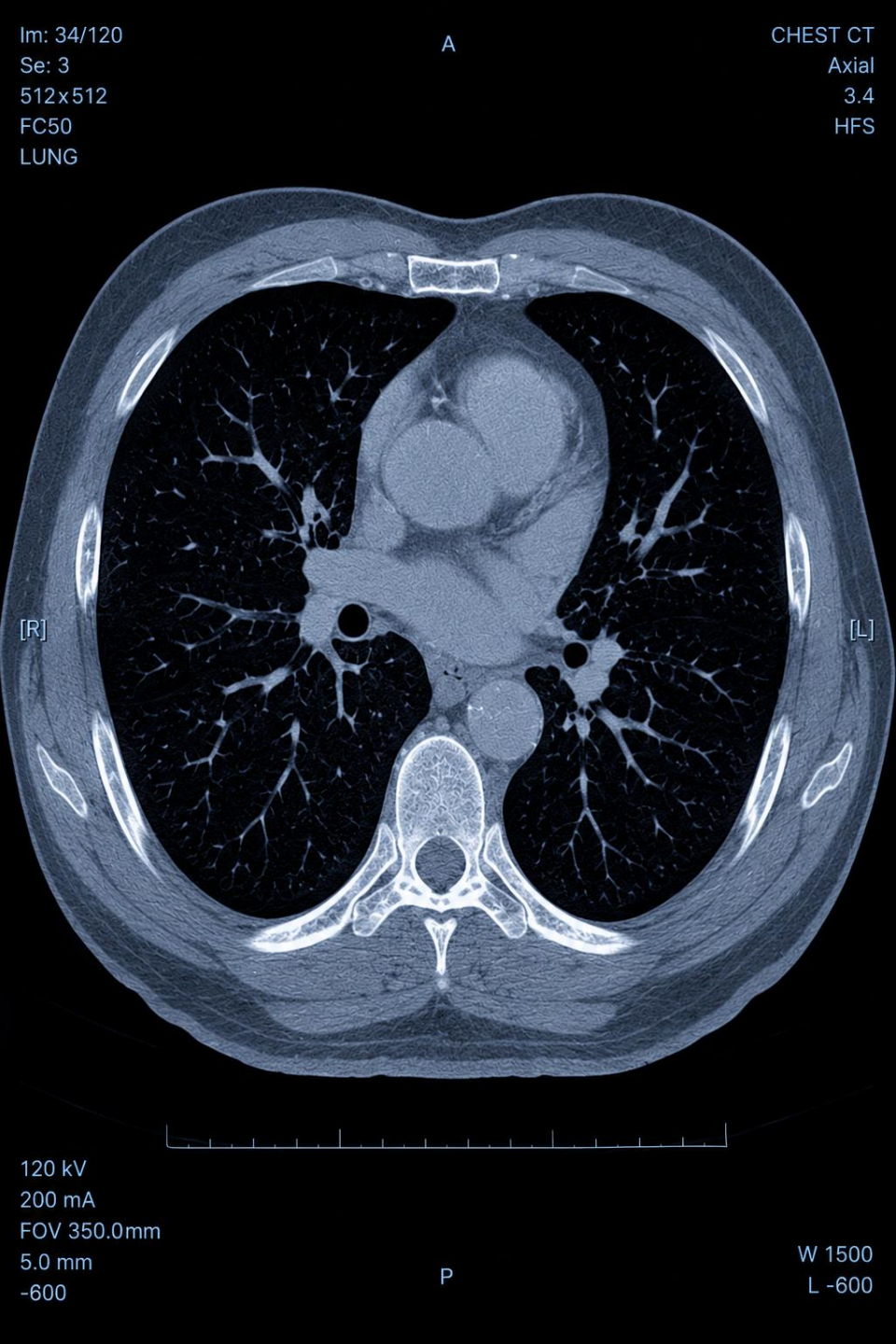


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IMAGING RESULT

Chest CT

Bronchiectatic Changes

Bilateral bronchiectasis —
abnormal and permanent
dilation of the bronchi.

Distribution

Right middle lobe
Right lower lobe
Left lower lobe

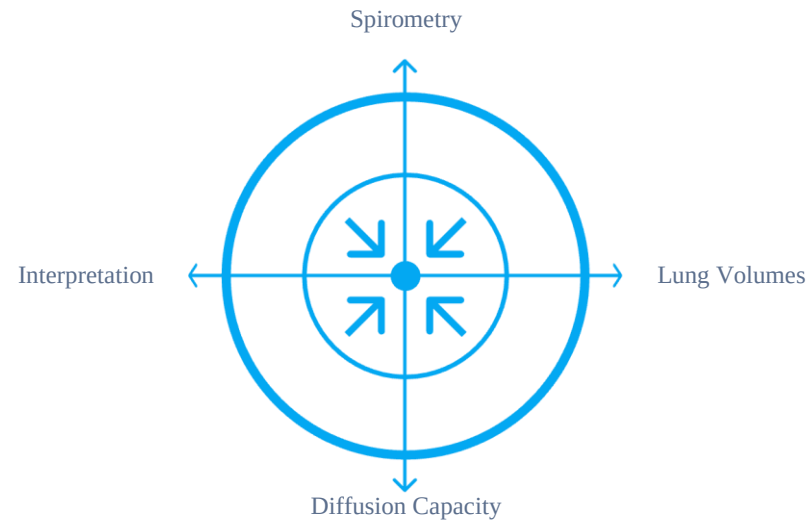
Airway Wall Thickening

Mild airway wall thickening
— reflecting chronic airway
inflammation.



Bilateral bronchiectasis in a 27-year-old demands a thorough etiologic workup.

Pulmonary Function Tests



PFT results provide critical functional context to the structural findings seen on chest CT — helping characterize the pattern and severity of airway disease.

Baseline Spirometry

FVC: 4.52 L (96% predicted)
FEV1: 3.08 L (82% predicted)
FEV1/FVC: 68%
PEF: 6.9 L/s (79% predicted)
FEF25–75: 2.05 L/s (58% predicted)
TLC: 6.45 L (104% predicted)
RV: 2.05 L (118% predicted)
RV/TLC: 32%
DLCO: 25.4 mL/min/mmHg (102% predicted)

Post-bronchodilator

FVC: 4.64 L (99% predicted)
FEV1: 3.54 L (94% predicted)
FEV1/FVC: 76%
PEF: 8.0 L/s (92% predicted)
FEF25–75: 3.10 L/s (88% predicted)

LAB DATA

A comprehensive laboratory workup was initiated to identify the underlying etiology of this patient's chronic sinonasal disease and bilateral bronchiectasis.

CBC with Differential

WBC	$7.2 \times 10^3/\mu\text{L}$
RBC	$4.86 \times 10^6/\mu\text{L}$
Hb	14.5 g/dL
Hct	43.2%
MCV	88.9 fL
MCH	29.8 pg
MCHC	33.5 g/dL
RDW	12.6%
Platelet	$268 \times 10^3/\mu\text{L}$
MPV	9.8 fL

Neutrophils	58%
Lymphocytes	32%
Monocytes	7%
Eosinophils	2%
Basophils	1%

CMP

Glucose	92 mg/dL
BUN	14 mg/dL
Creatinine	0.88 mg/dL
Sodium	140 mmol/L
Potassium	4.2 mmol/L
Calcium	9.4 mg/dL
Phosphorus	3.6 mg/dL
Magnesium	2.0 mg/dL
AST	22 U/L
ALT	24 U/L
ALP	84 U/L
Total Bilirubin	0.8 mg/dL
Direct Bilirubin	0.2 mg/dL
Albumin	4.5 g/dL
TSH	3 mIU/L
FT4	1 ng/dL

VBG

pH	7.38
pCO2	47 mmHg
pO2	34 mmHg
HCO3	27.5 mEq/L
BE	2
O2 sat	65%
Lactate	1.2 mmol/L

Cont.



Tuberculosis Workup

PPD 2.5 mm



Immunodeficiency Panel *

Unremarkable



Viral Studies

All negative



Rheumatologic Screen *

Unremarkable

* As reported by the patient

A Complex Clinical Picture

Chronic Sinus Disease

Persistent sinonasal involvement
with no clear resolution

Structural Lung Disease

Bronchiectasis confirmed on
imaging

No Systemic Explanation

Underlying etiology remains undetermined

⚠️ We are now facing a patient with chronic sinus disease, structural lung disease (bronchiectasis), and no clear systemic explanation yet.



Let's Re-Evaluate

On further targeted questioning, a more nuanced clinical picture emerged.

Constitutional Symptoms — Absent

The patient **denied fever, night sweats, or unintentional weight loss**, making active infectious or malignant processes less likely as primary drivers.

Peripheral Edema — **Notable Finding**

She reported a history of **lower extremity swelling, unilateral**, with a fluctuating course — sometimes partially improving and at other times becoming more pronounced. She denied associated pain, erythema, or features suggestive of acute venous thrombosis.

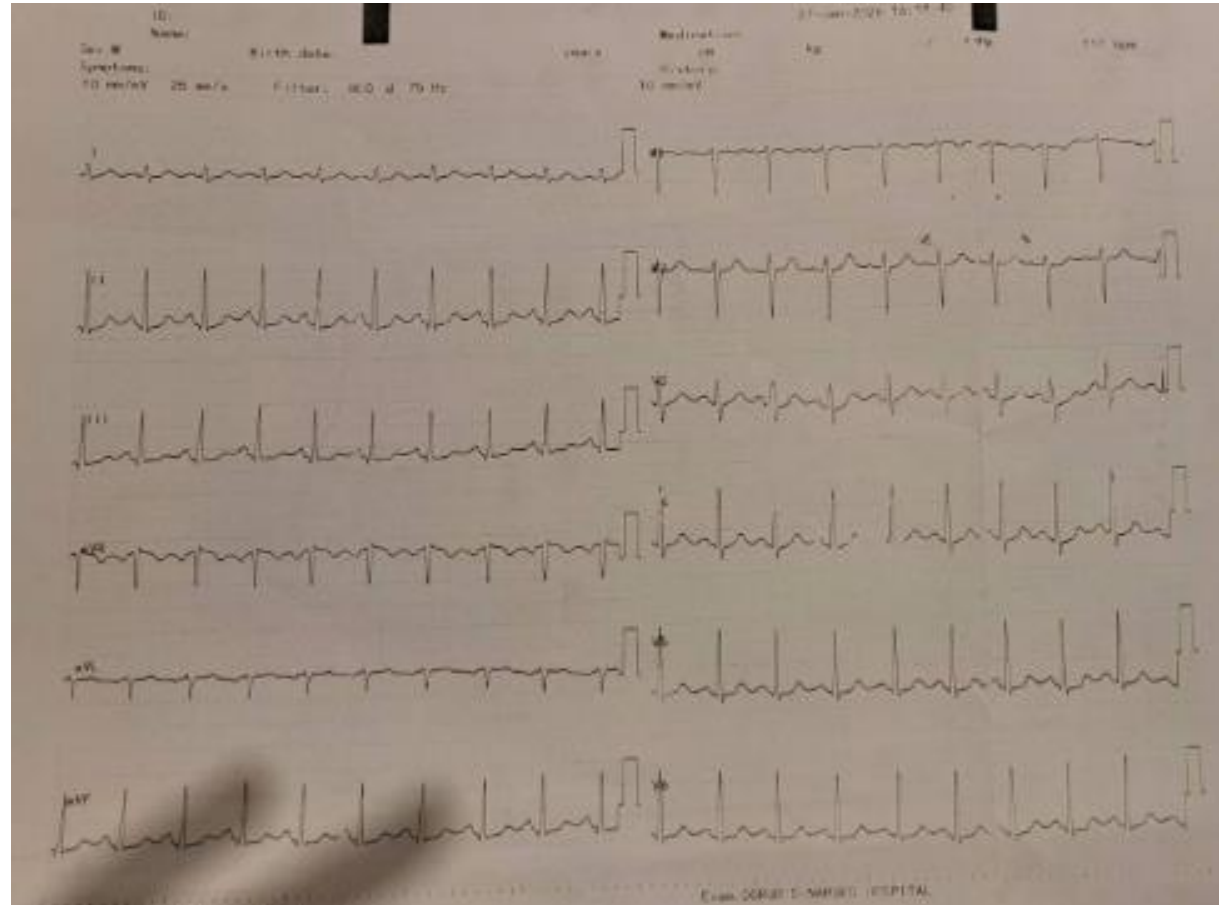
Allergic Asthma — Unlikely

She also **denied symptoms suggestive of significant allergic asthma**, including episodic wheezing or acute attacks of dyspnea.

Other Histories — Negative

No history of **recurrent otitis media, infertility, or known childhood-onset chronic respiratory disease** was reported.

ECG



The ECG was reviewed for evidence of right heart strain, arrhythmia, or other findings that might contextualize the patient's cardiopulmonary presentation.

Echocardiography

Normal LV size with normal systolic function (EF:55%), no RWMA, no LVH, no LV clot

Normal RV size (RVID: 3cm) with normal systolic function (TAPSE: 22mm)

Normal bi-atrial sizes

Normal MV, no MS, mild MR

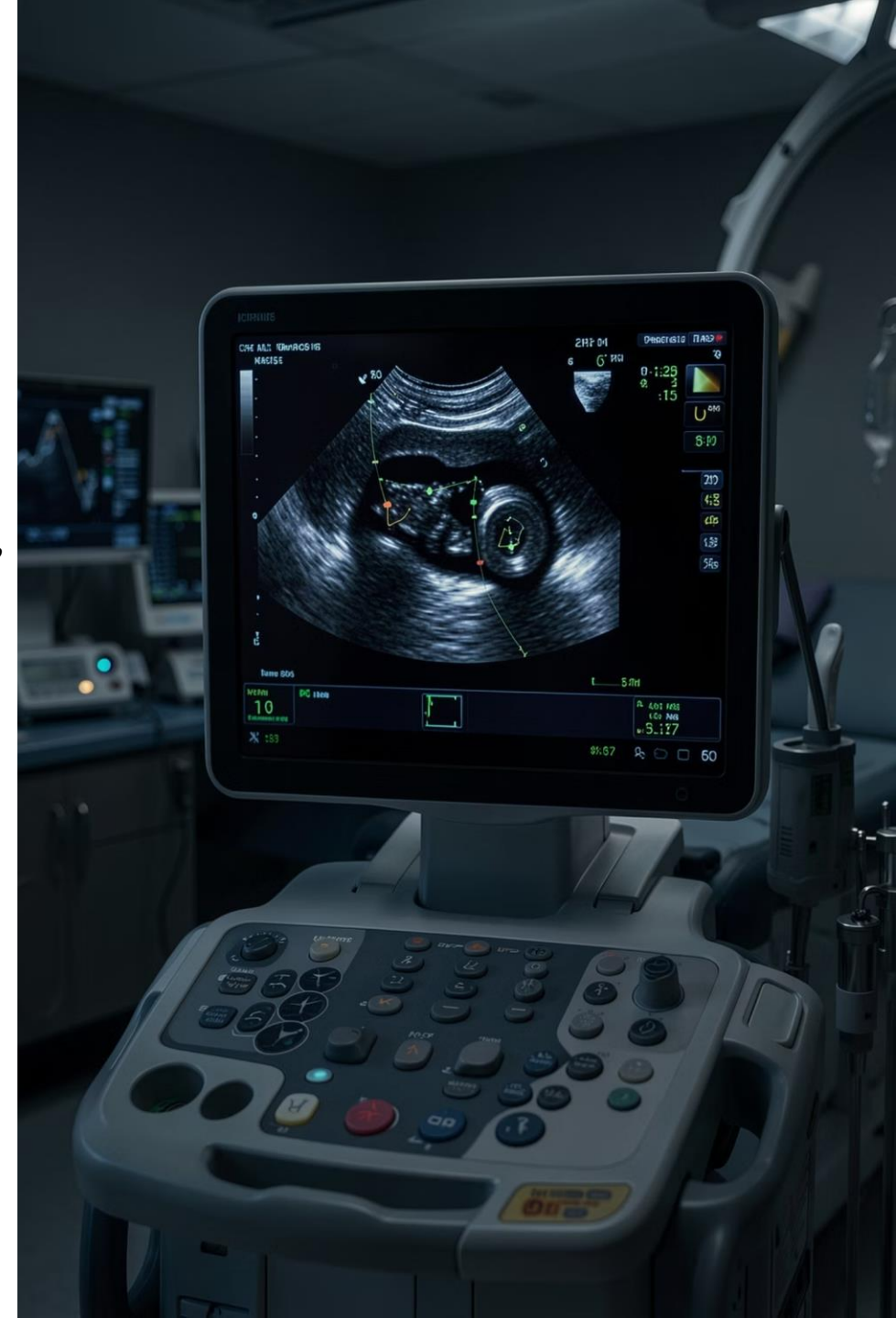
Normal AV, no AS, no AI, ascending aorta:3cm

Normal TV, no TS, mild TR (TRG: 27 mmHg, sPAP: 32 mmHg)

Normal PV, no PS, no PI

Normal IVC size and respiratory collapse

No pericardial effusion



Right Lower Extremity Color Doppler Ultrasound & Soft Tissue Assessment

The common femoral vein, superficial femoral vein, deep femoral vein, and popliteal vein demonstrate normal caliber. All evaluated deep venous segments show normal compressibility with appropriate response to compression. The venous wall thickness is within normal limits. **No evidence of intraluminal thrombus** is identified. Venous phasicity is preserved and within normal physiological range.

The tibial veins, including the posterior and anterior tibial veins, are also patent with **no evidence of thrombosis**. Augmentation response in the deep venous system is normal.

The great saphenous and small saphenous veins demonstrate normal diameter with no evidence of thrombosis.

Several inguinal lymph nodes are noted on the right side, showing **benign morphology**, with a maximum short-axis diameter of up to 8 mm.

Mild subcutaneous soft tissue edema is observed in the distal portion of the right lower extremity.

④ Impression:

No evidence of deep or superficial venous thrombosis in the right lower extremity.

Benign-appearing right inguinal lymph nodes.

Mild distal right lower extremity subcutaneous edema, **suggestive of early or mild lymphedema / soft tissue edema**.

A New Finding Emerges

During a more comprehensive physical examination, another finding attracted our attention.

A thorough head-to-toe physical examination revealed an additional clinical sign that had not been previously highlighted — one that would prove pivotal in reframing the entire diagnostic picture.





The Nail Changes — A Detailed History

1

~4 Years Ago — Onset

The nail changes began approximately four years earlier. Discoloration and dystrophy involved **all fingernails and toenails**, with gradual progression over time.

2

Initial Evaluation — Fungal Diagnosis Suggested

An initial evaluation at another center suggested a **fungal infection**, and a positive test was reportedly returned. However, she did not receive antifungal treatment.

3

2–3 Years Later — Re-evaluation

Repeat evaluation reportedly **did not support fungal infection**. She discontinued further follow-up, as the condition remained unchanged.

4

Family History — Siblings Affected

She mentioned that **similar nail changes were present in her sisters**, although no formal diagnosis had ever been established in the family.



Clinical Integration — Your Interpretation

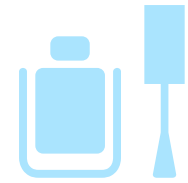
How do you interpret this nail abnormality in the context of her pulmonary and systemic findings?

The Triad to Consider

- Chronic sinusitis and bronchiectasis (structural airway disease)
- Predominantly unilateral lower extremity edema with fluctuating course
- Dystrophic, discolored nails involving all digits — with familial clustering

❓ Does this constellation of findings point toward a unifying diagnosis? What syndrome links nail dystrophy, lymphedema, and chronic respiratory disease?

Consider the chronology, the family history, the absence of infectious confirmation, and the multi-system involvement before arriving at your conclusion.



Yellow Nail Syndrome



Yellow Nail Syndrome

A rare disorder defined by a **clinical triad** — though rarely presenting all at once. Recognition is frequently delayed, and patients are often misdiagnosed with common airway diseases before the underlying syndrome is identified.

Nail Changes

Yellow, dystrophic, and markedly slow-growing nails with thickening and increased curvature

Lymphedema

Often affecting the lower extremities; thought to reflect primary lymphatic dysfunction

Respiratory Manifestations

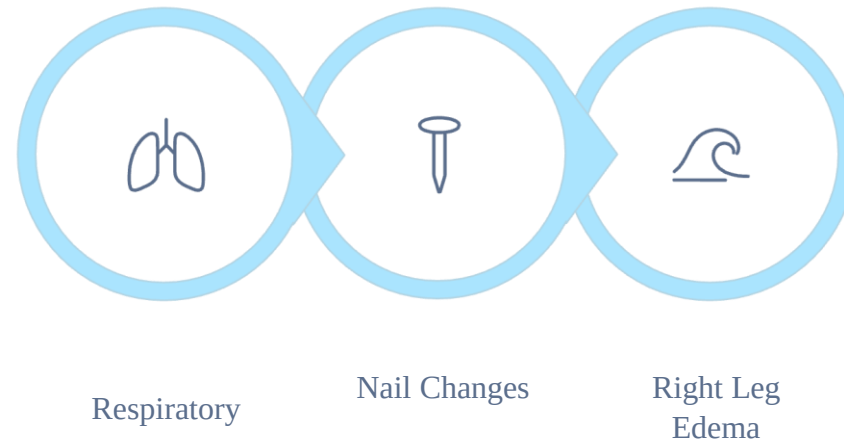
Chronic sinusitis, bronchiectasis, and pleural effusion — may precede nail or lymphatic findings by **years**



The full triad is **not always present simultaneously**. Respiratory symptoms may appear years before nail or lymphatic findings, making early diagnosis especially challenging.

Retrospective Clinical Course

A detailed review of the patient's history revealed a clear **temporal sequence** — one that, in hindsight, pointed unmistakably toward a single unifying systemic process rather than isolated pulmonary or dermatologic disease.



The temporal unfolding of symptoms across organ systems was the critical clue that unified the diagnosis.

Nail Examination Findings

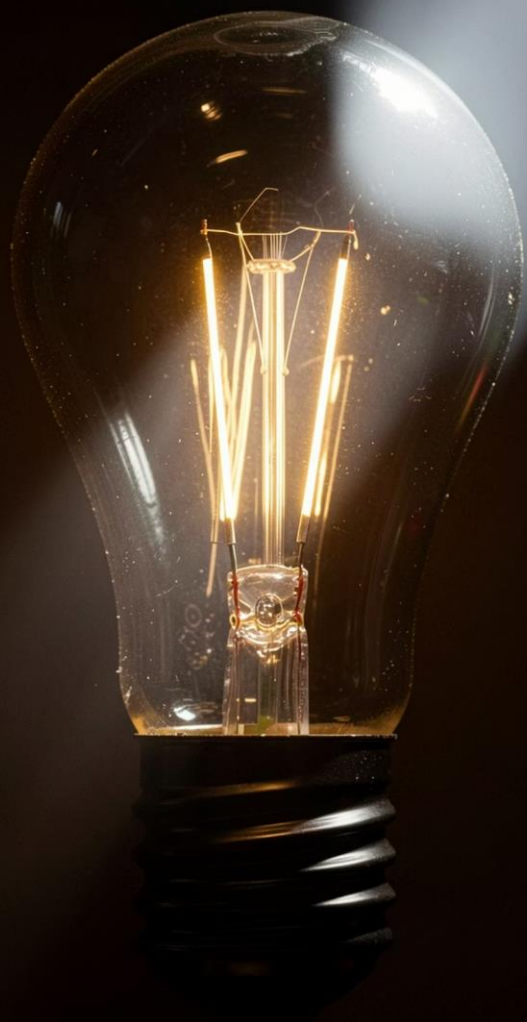
- Markedly slow nail growth rate
- Absence of cuticles — loss of proximal nail fold
- Diffuse yellow discoloration with nail plate thickening
- Increased nail curvature and dystrophy
- No significant subungual debris to suggest active fungal infection

Key Clinical Insight

The absence of subungual debris was an important negative finding — it helped distinguish Yellow Nail Syndrome from onychomycosis, which is a common misdiagnosis in these patients.



The combination of **all three domains** — respiratory, dermatologic, and lymphatic — across a prolonged timeline is what ultimately confirmed the diagnosis.



**When you connect the
dots, the diagnosis
becomes obvious.**