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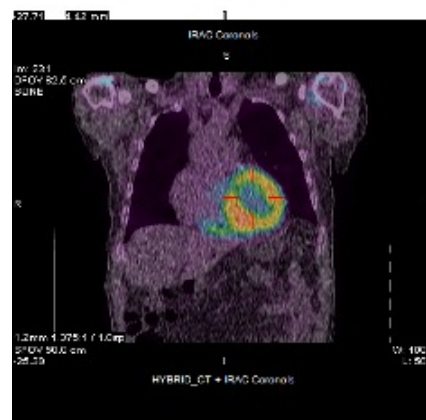
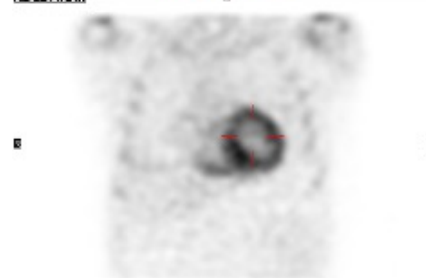
CANM* PYP IMAGING GUIDELINES

Dr. Cigdem AKINCI OGLU

*Canadian Association of Nuclear Medicine

CLINICAL IMPACT

Dr. Nowell FINE



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LEARNING OBJECTIVES

- Discuss clinical applications of the Canadian Association of Nuclear Medicine (CANM) Cardiac Amyloid PYP Imaging Guidelines through case-based presentations

DISCLOSURES

CIGDEM AKINCIOLU

- Consulting Fees/Honoraria: **Pfizer**

I had full editorial control over the content of this presentation and wish to advise that it may contain content that is not consistent with the approved Canadian Product Monographs

NOWELL FINE

- Consulting Fees/Honoraria: **Pfizer, Akcea/Ionis, Alnylam, Takeda, Sanofi-Genzyme, Astra-Zeneca, Bayer**
- Clinical Trials: **Pfizer, Eidos, Akcea/Ionis, Alnylam**
- Speaker Fees: **Pfizer, Akcea/Ionis, Alnylam**
- Research Grants: **Pfizer, Akcea/Ionis, Alnylam, Eidos**

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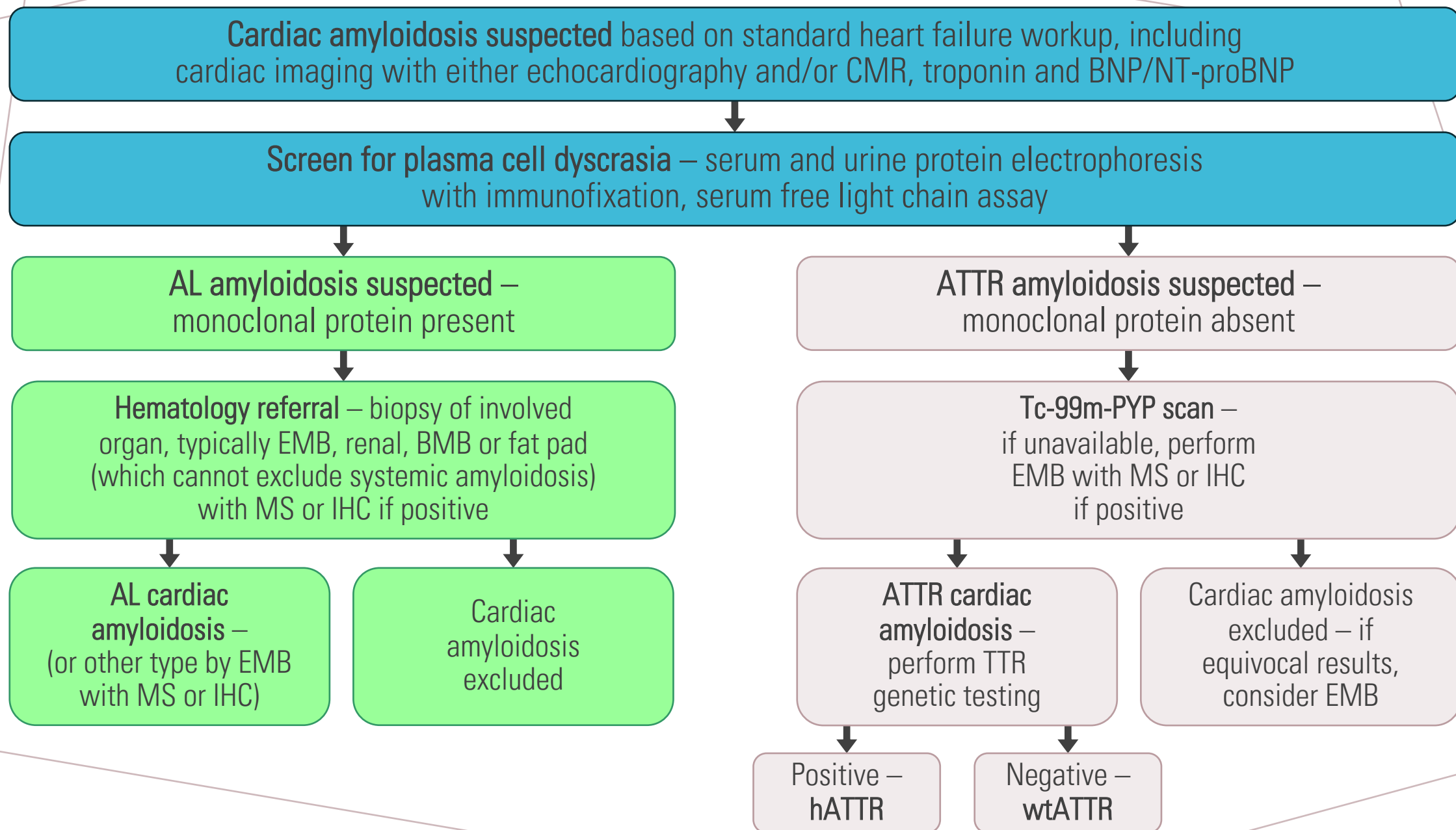
Canadian Journal of Cardiology 36 (2020) 322–334

Society Position Statement

Canadian Cardiovascular Society/Canadian Heart Failure Society Joint Position Statement on the Evaluation and Management of Patients With Cardiac Amyloidosis

CANM Cardiac Amyloid PYP Imaging Guidelines

<https://canm-acmn.ca/guidelines>



RECOMMENDATION

5. We recommend performance of nuclear scintigraphy with bone-seeking radiotracer (if available) to evaluate for cardiac involvement when ATTR cardiac amyloidosis is suspected after exclusion of AL (Strong Recommendation, Moderate-Quality Evidence).

Low grade PYP uptake can be associated with early TTR or AL

Practical tip. Patients with AL cardiac amyloidosis (or other rare non-ATTR subtypes) might have radiotracer uptake by nuclear scintigraphy, and a positive scan does not exclude AL. Serum and urine screening for monoclonal protein (as described earlier) is required for all patients with suspected cardiac amyloidosis.

Figure 1. Quantitation of Cardiac ^{99m}Tc -PYP Uptake Using Heart-to-Contralateral Lung (H/CL) Ratio

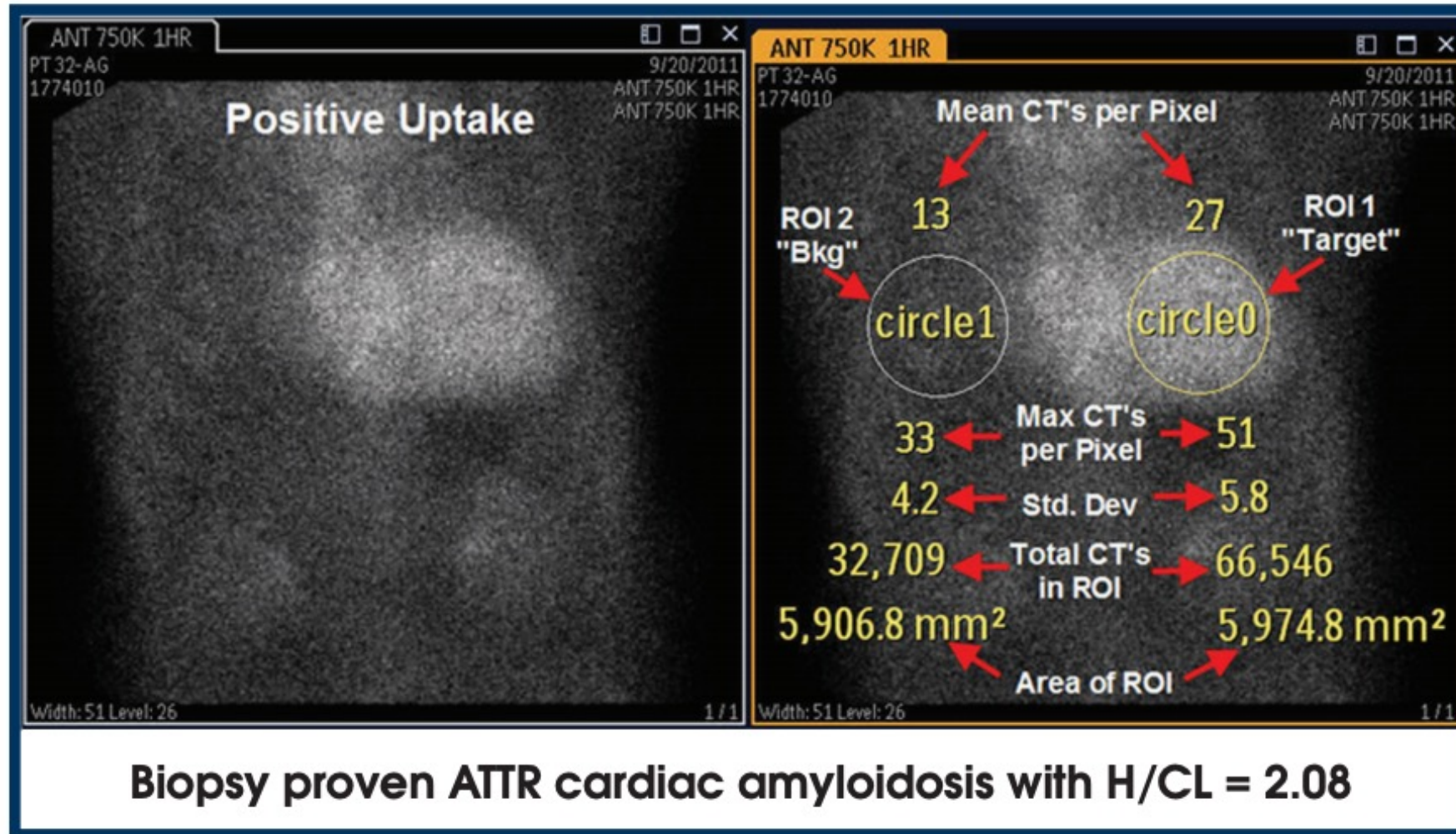
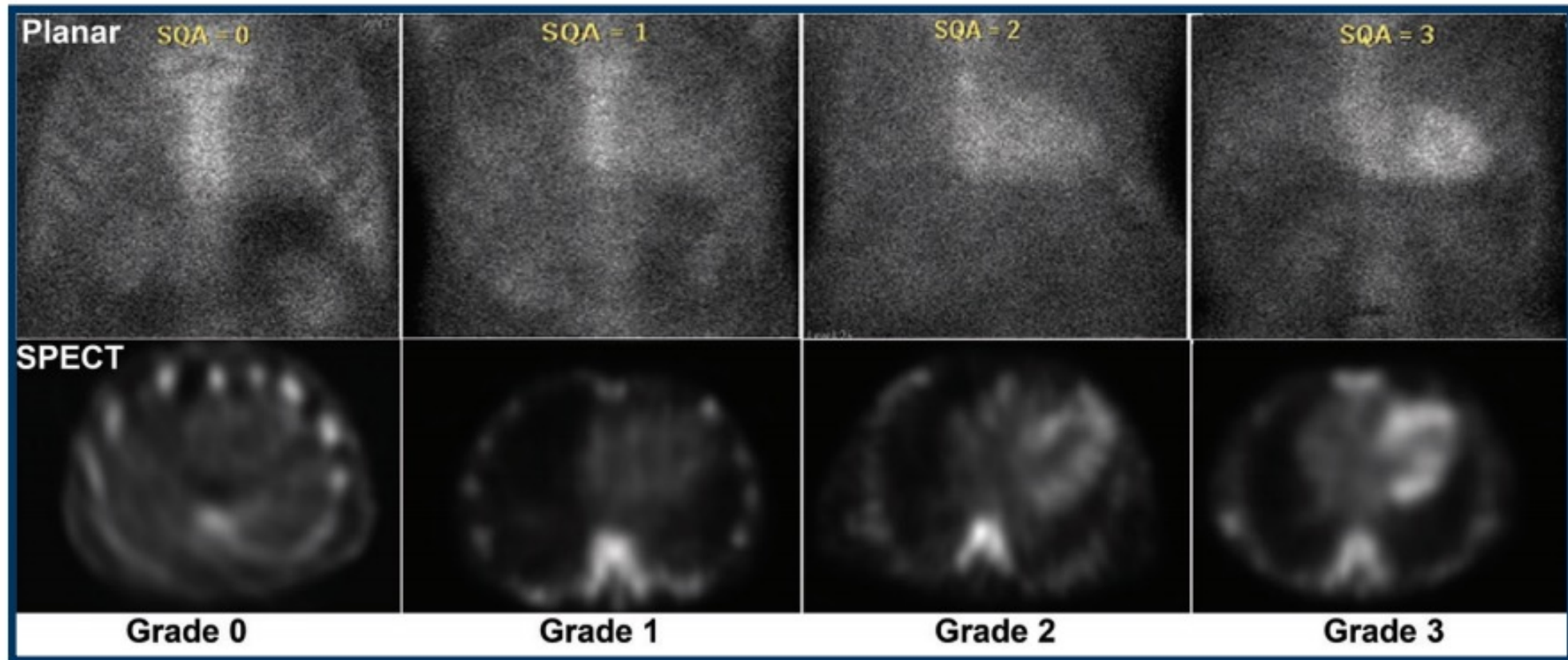


Figure 2. Grading ^{99m}Tc -PYP Uptake on Planar and SPECT Images

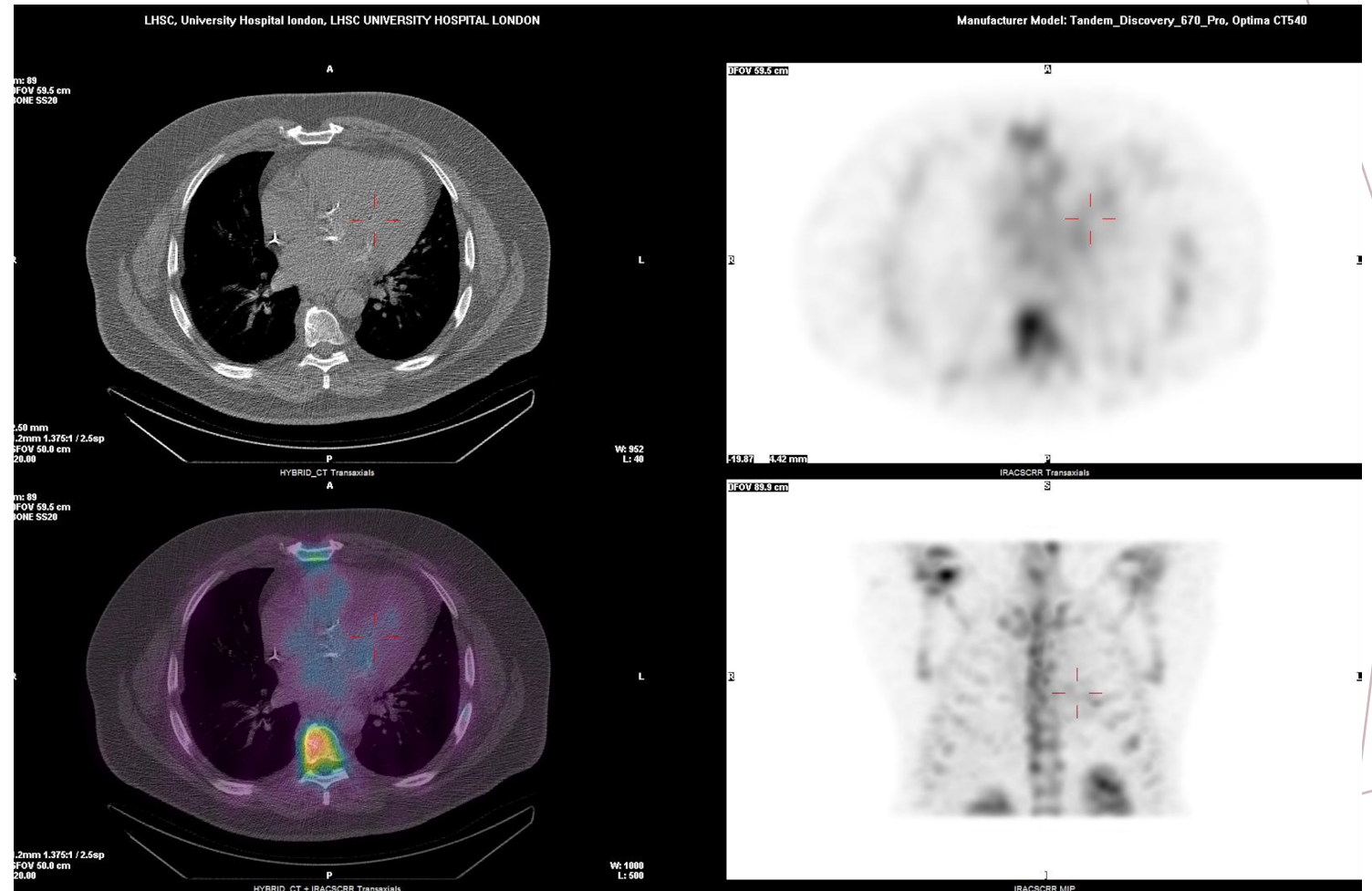
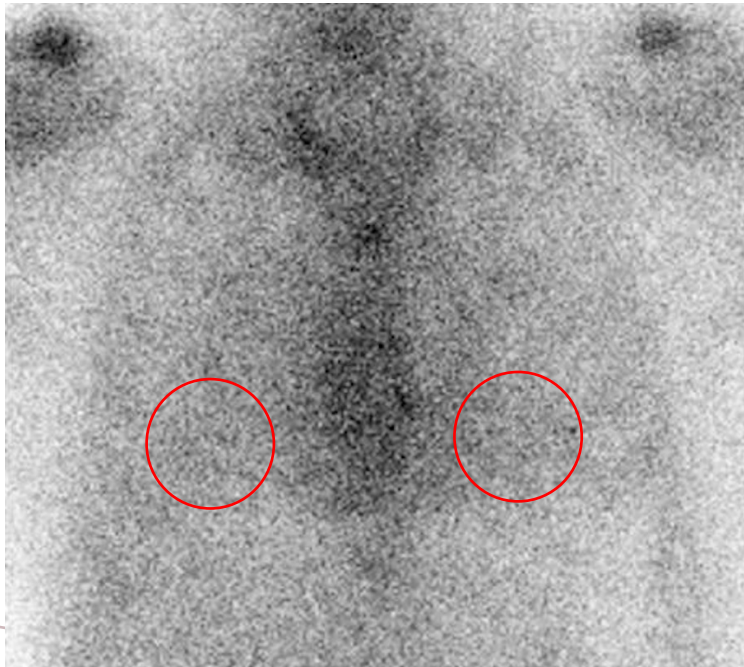


Visual score

- 0: absent myocardial uptake**
- 1: myocardial uptake < bone**
- 2: myocardial uptake = bone**
- 3: myocardial uptake > bone**

81 M,
HCM
Asymmetrical septal
hypertrophy

1 hr HCL: 1.0

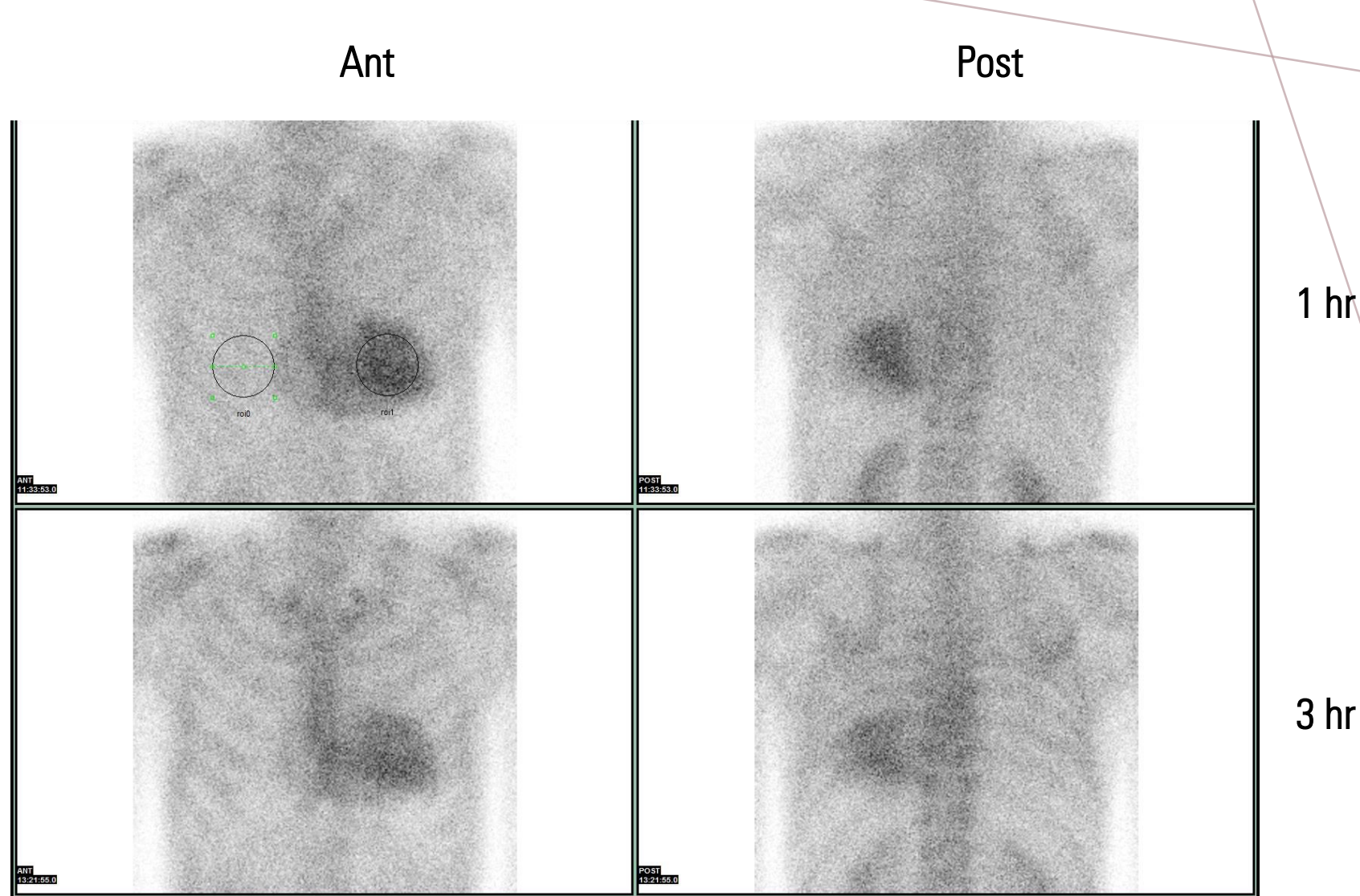


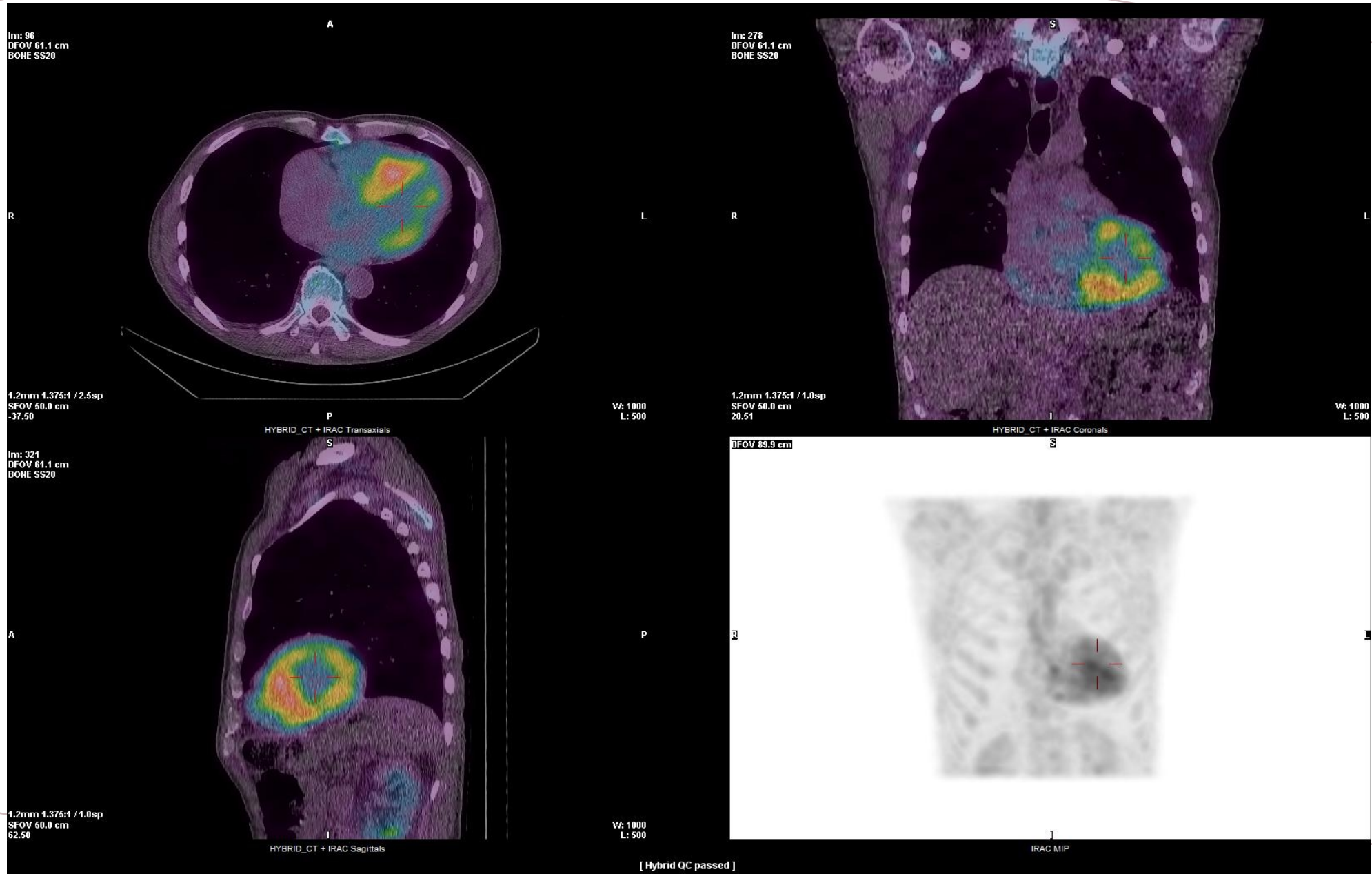
• Courtesy of Western University Nuclear Medicine– London ON

79 M,
HF EF 40%, Afib
Hx carpal tunnel Sx

1 hr HCL 2.2

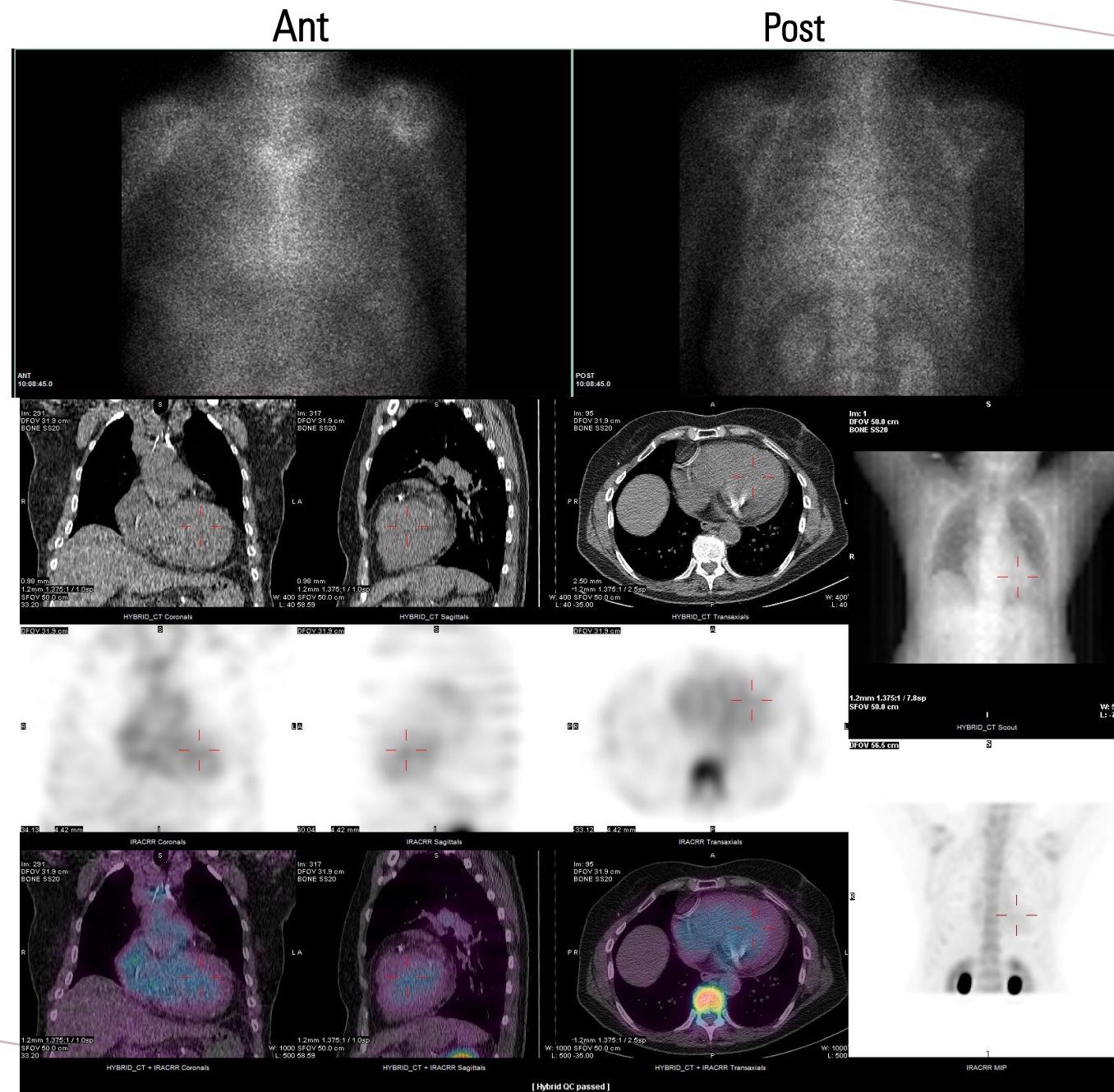
3 hr Visual Grade 3



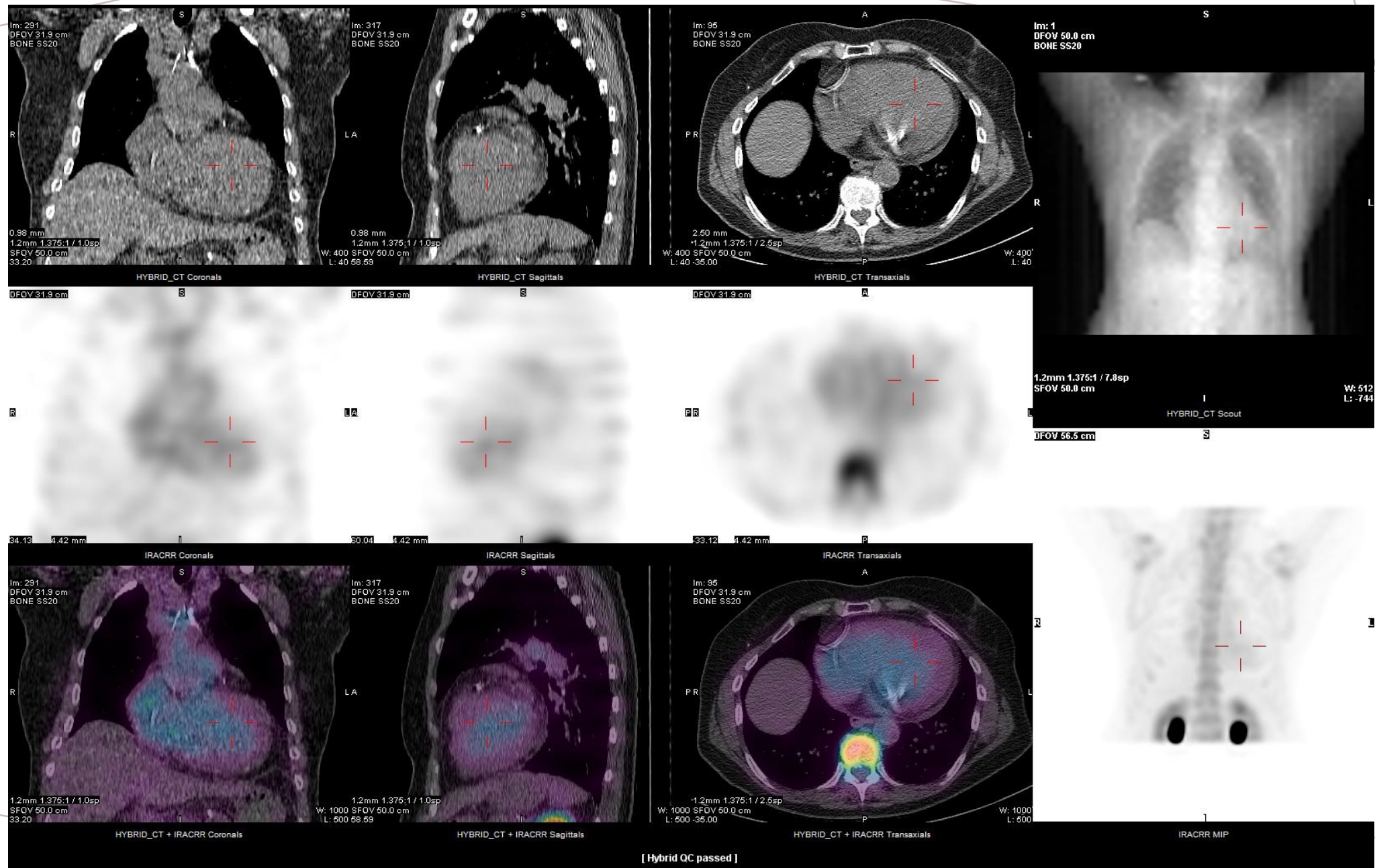


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93 F
CAD, Afib, HF
HCL: 1.4

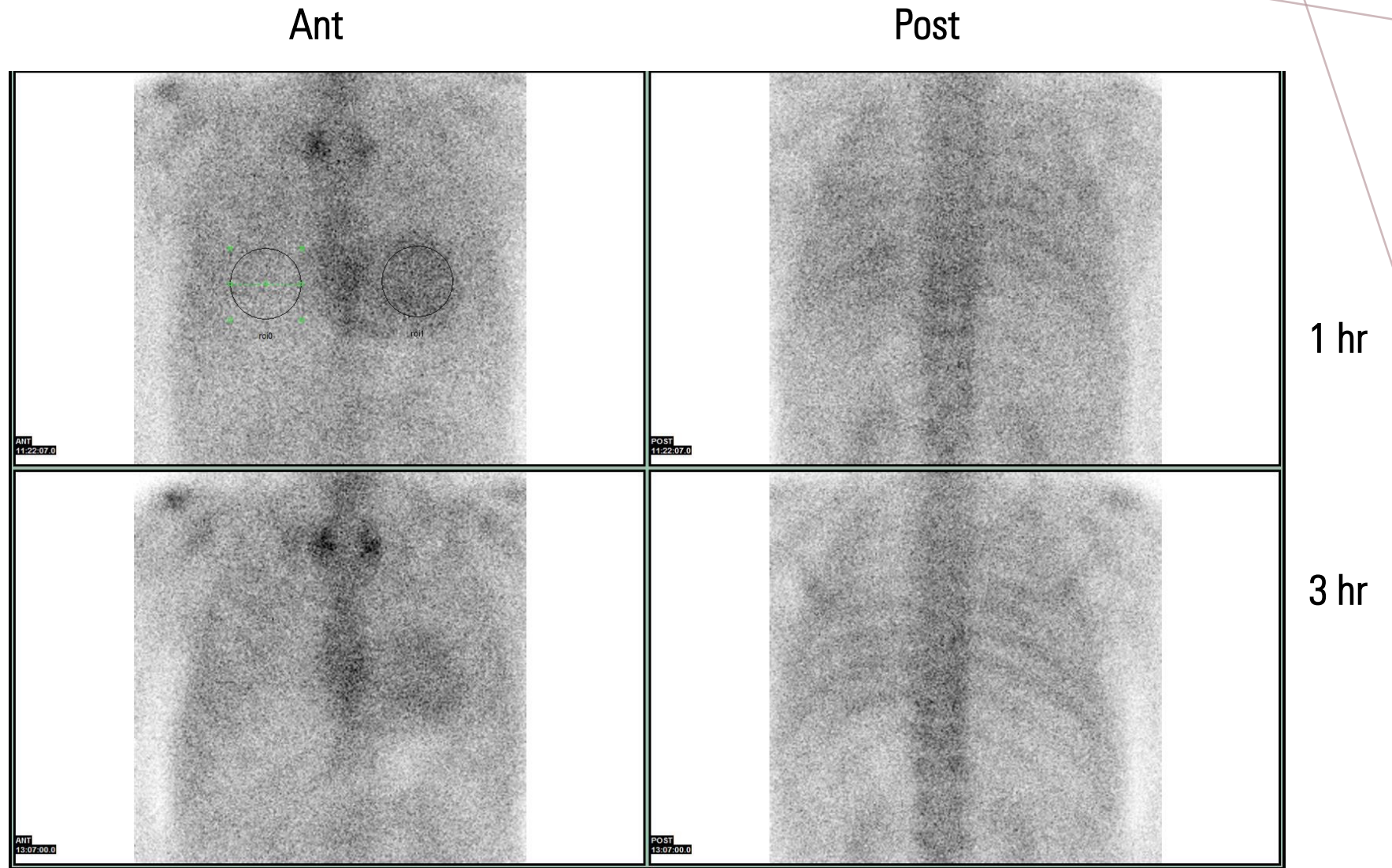


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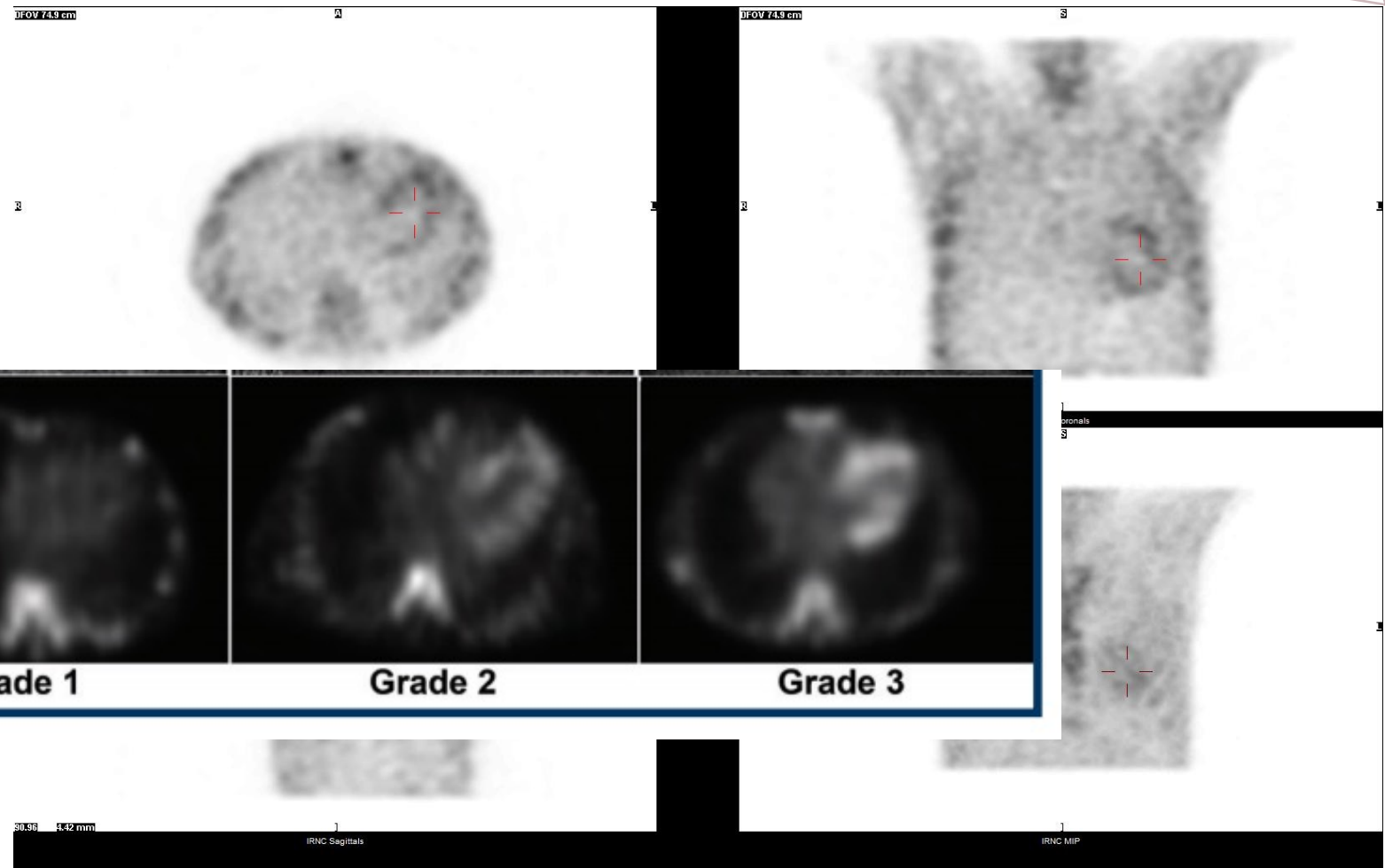


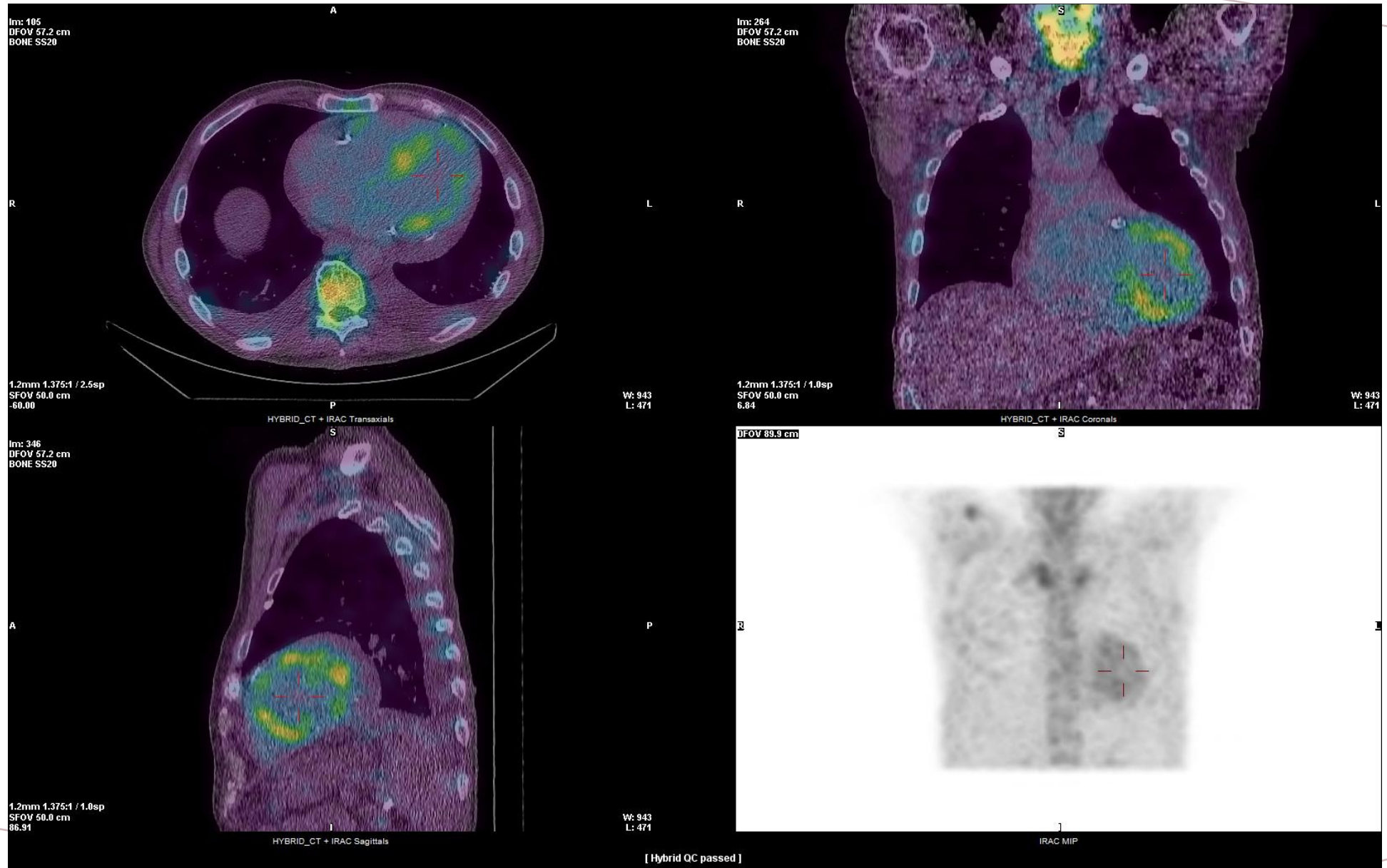
77 M
HF, EF 20%,
↑myo thickness, Afib,
CKD,
Bilat carpal tunnel Sx

HCL 1.4



Visual Grade 2



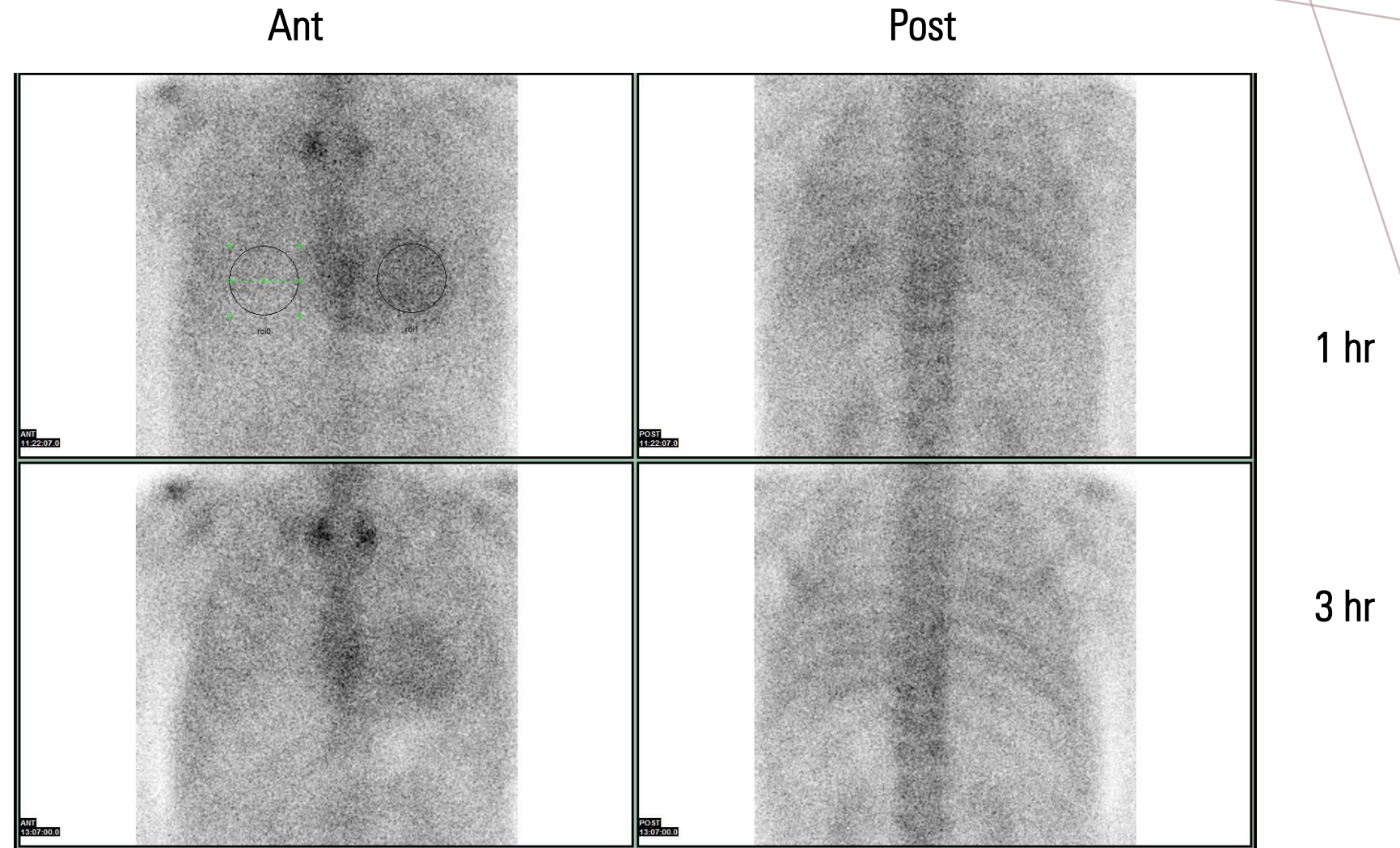


- Courtesy of Western University Nuclear Medicine— London ON

77 M
HF, EF 20%,
↑myo thickness, Afib,
CKD,
Bilat carpal tunnel Sx

HCL 1.4
Visual G 2

Serum FLC and urine
IF negative



Imaging in Diagnosis of Cardiac Amyloidosis

Cardiac ATTR amyloidosis can be reliably diagnosed in the absence of histology, provided that **ALL** of the following criteria are met:

1. HF
2. Echo or CMR consistent with or suggestive of amyloidosis
3. Grade 2 or 3 cardiac uptake on radionuclide scan (PYP, DPD or HMDP)

AND

4. absence of a detectable monoclonal protein by serum IFE, urine IFE and sFLC (Freelite) assay

Histological confirmation and typing of amyloid should be sought in all cases of suspected cardiac amyloidosis in which these criteria are not met

CLINICAL APPLICATION OF THE 2021 CANM CARDIAC AMYLOID PYP IMAGING GUIDELINE

Thank you!

Questions / comments?