



# Συζήτηση περιστατικών με μυοκαρδιοπάθειες

## Μυοκαρδίτιδα

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## Case presentation

- 34-year-old-female
- Amateur athlete, keen exerciser, preference for long-distance footraces, including marathon
- She exercises on a regular basis 4 times a week, ~3 hours in each session

- No remarkable FMH and PH
- Two weeks before coming to our attention she suffered an upper respiratory tract infection and diagnostic work up showed COVID-19 infection
- Regarding her present problem, the patient experienced acute onset chest pain not related to physical effort and occasionally palpitations



BP=130/80mmHg

Pulse=regular and symmetric at a rate ~70bpm

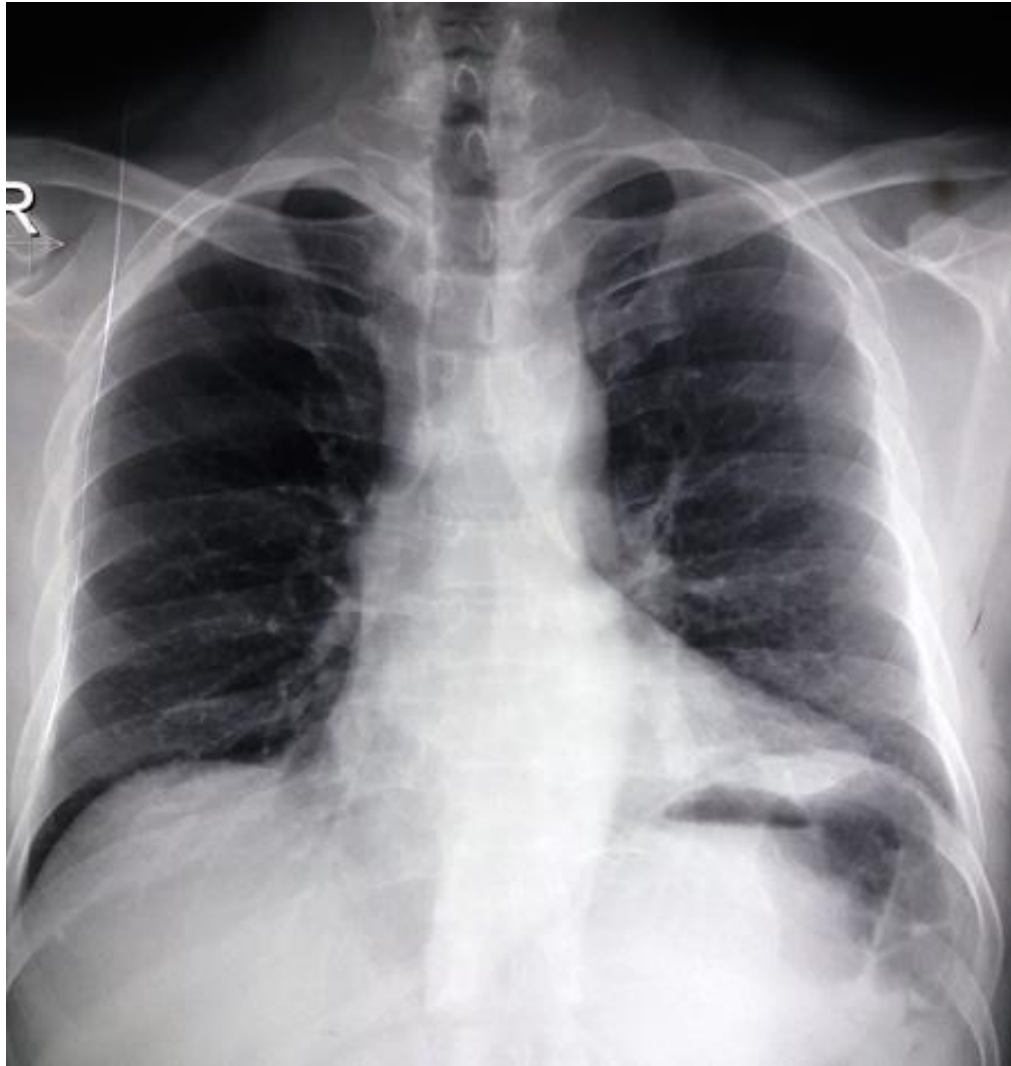
Respiratory rate=1 breaths/min

SpO2=98%

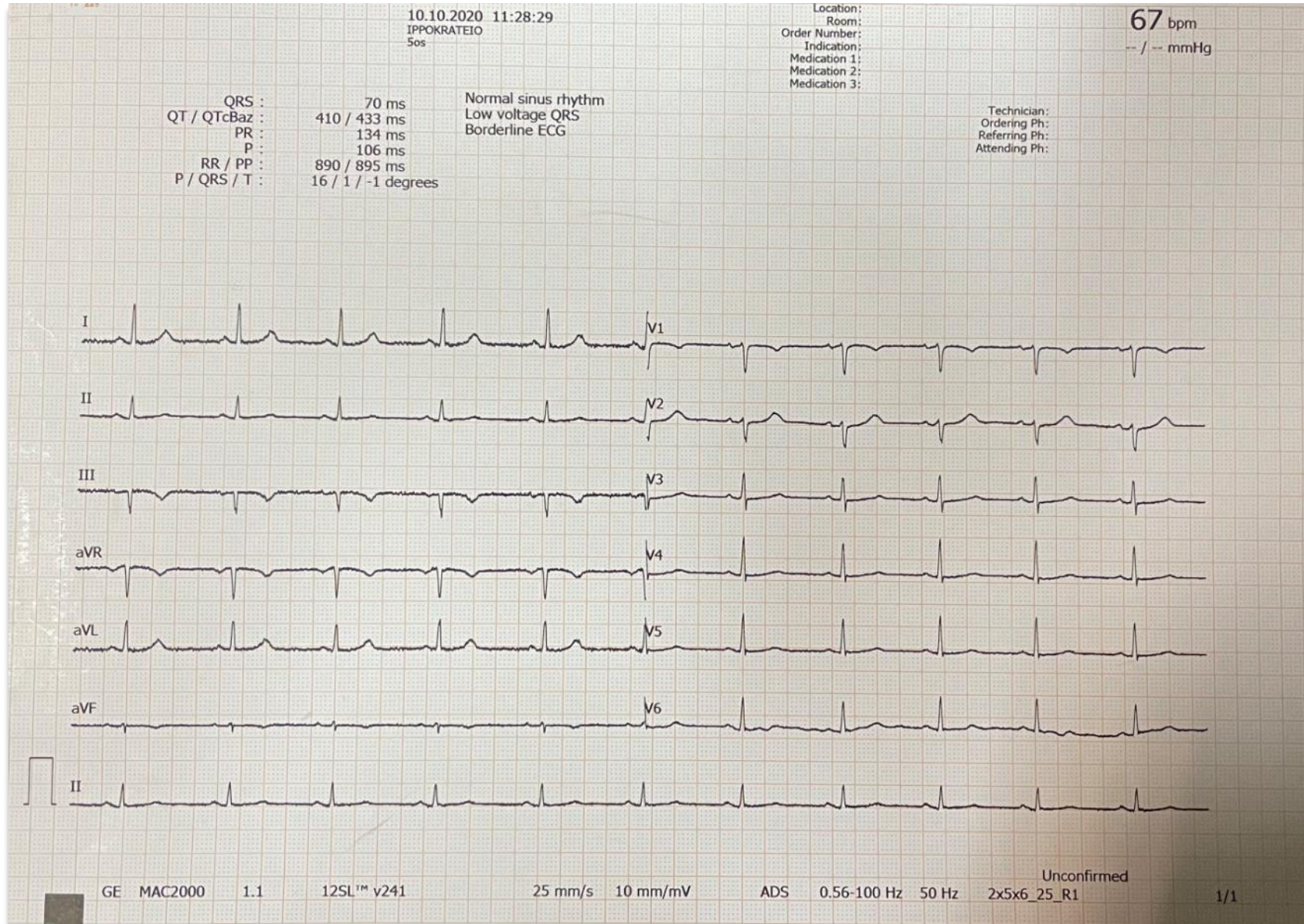
- Heart auscultation was unremarkable
- Overall physical examination without pathological findings

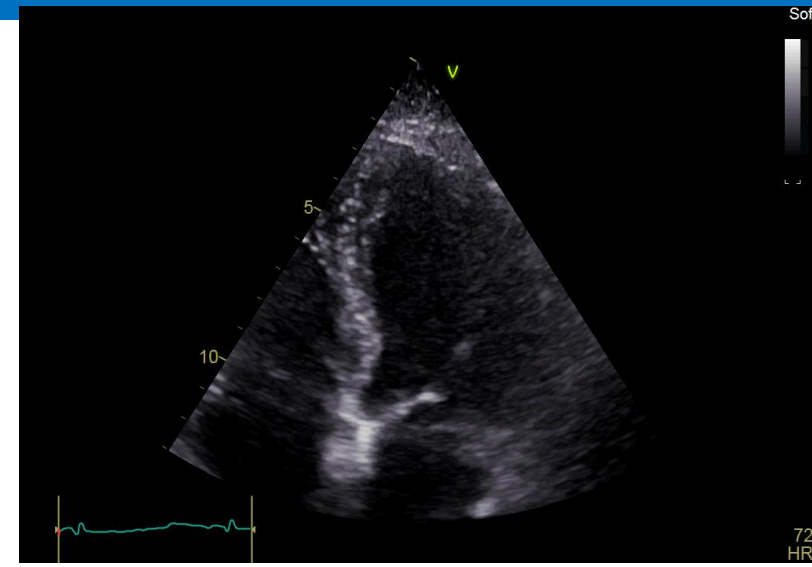
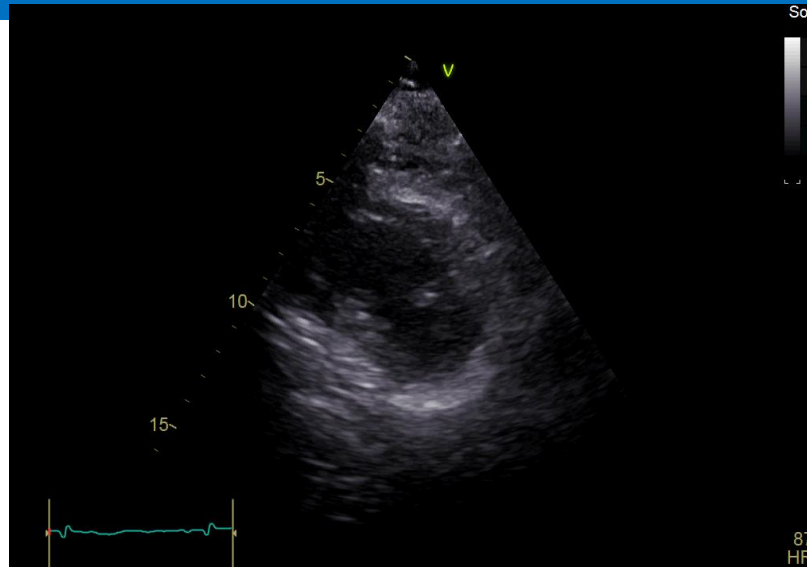
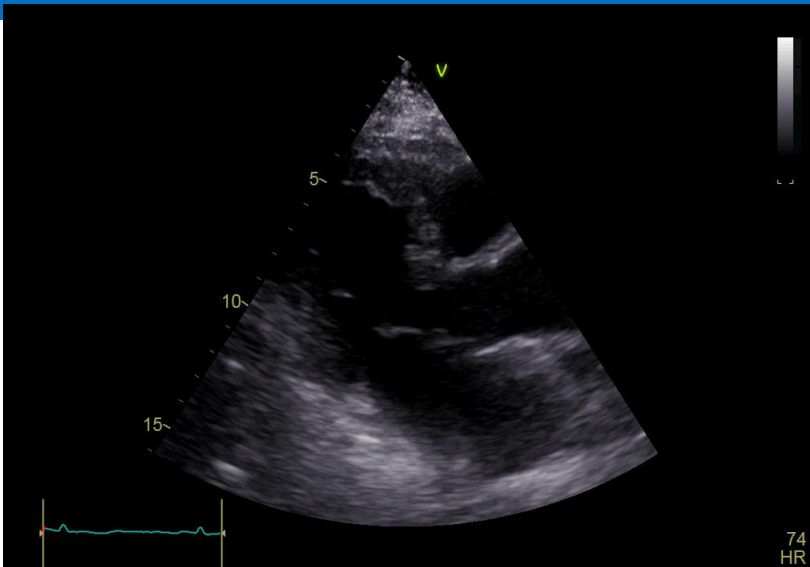
Περιγραφή εξέτασης	Αποτέλεσμα	Μονάδες	Τιμές Αναφοράς
hs troponin I	2313,00	pg/ml	ανδρες : < 34,2 γυναίκες : < 15,6

# Chest x-ray

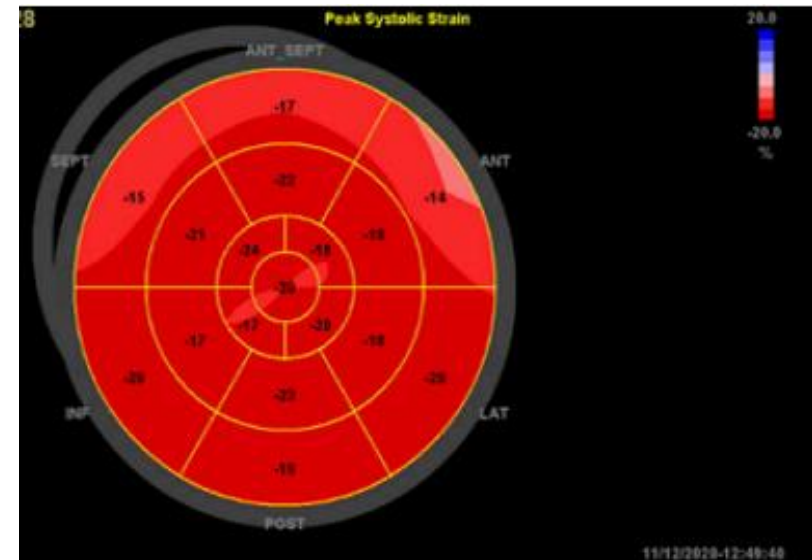
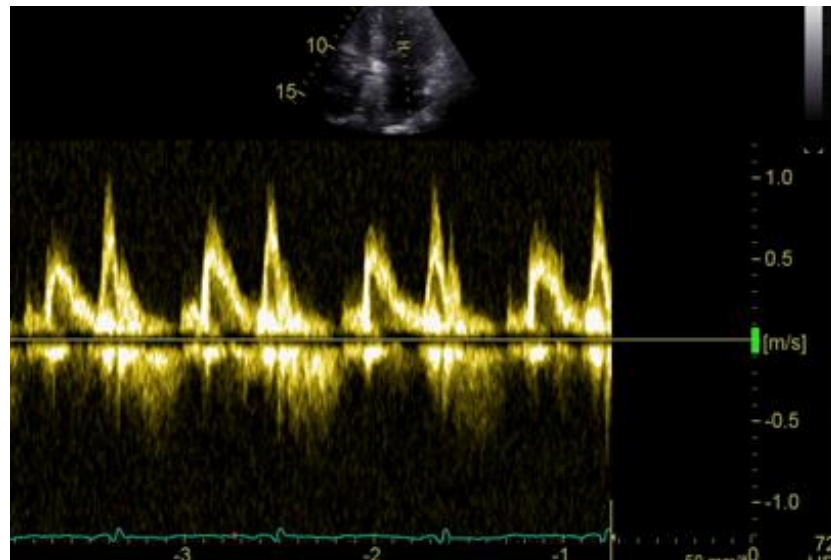
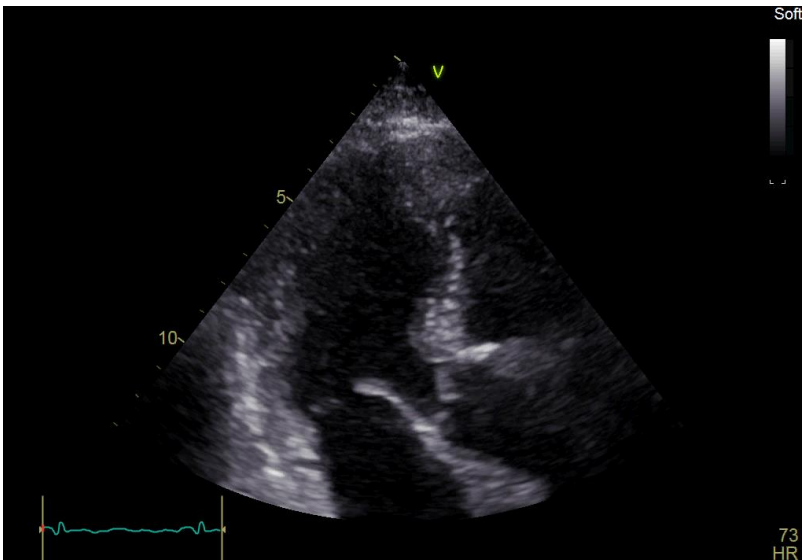


# ECG

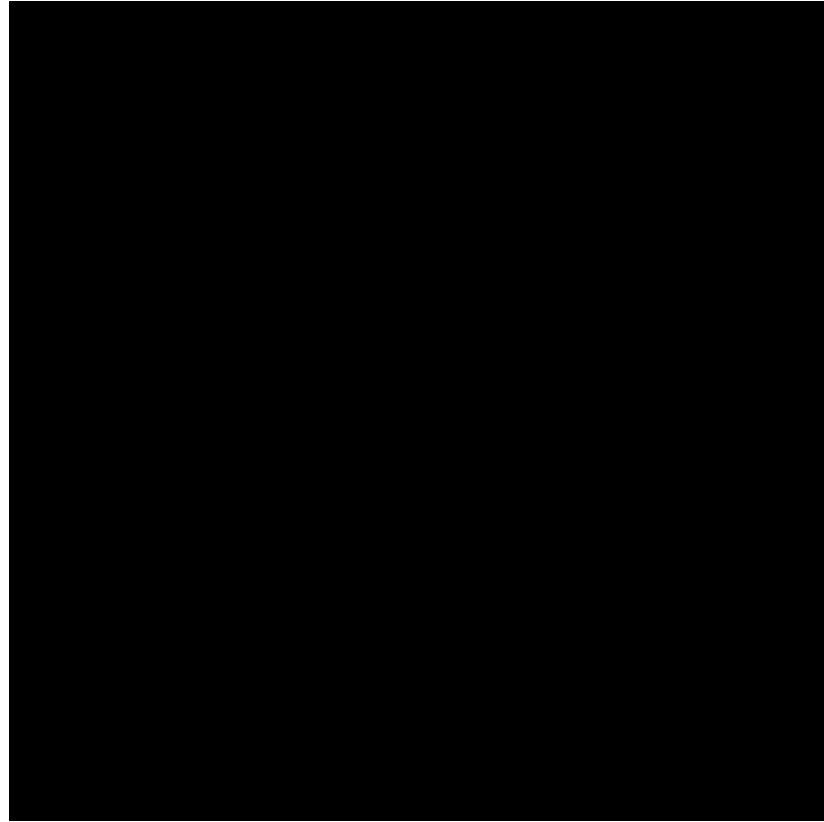
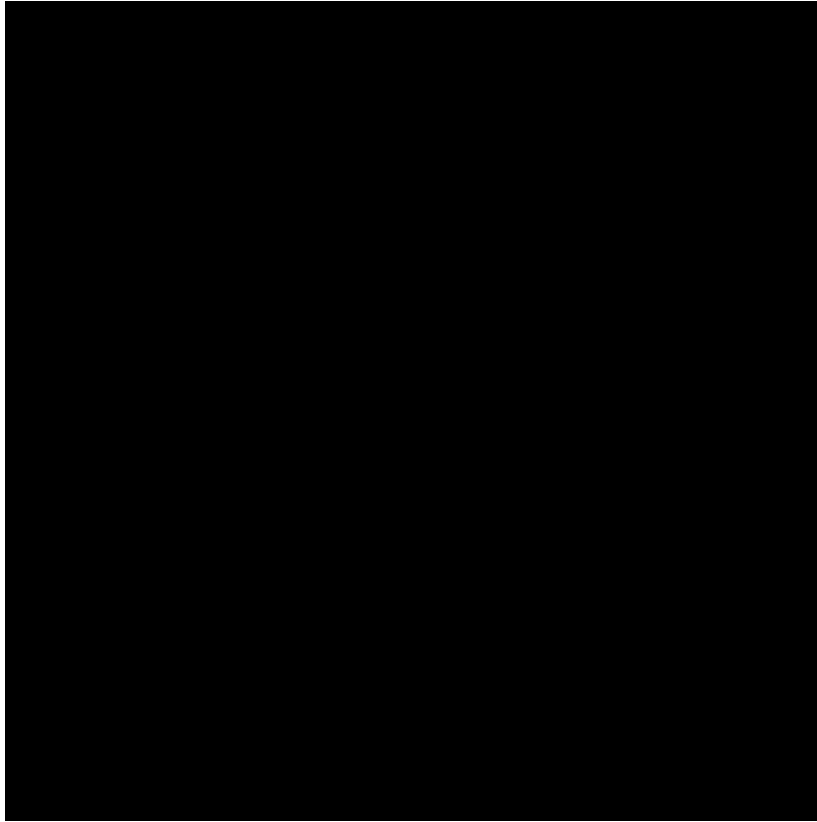
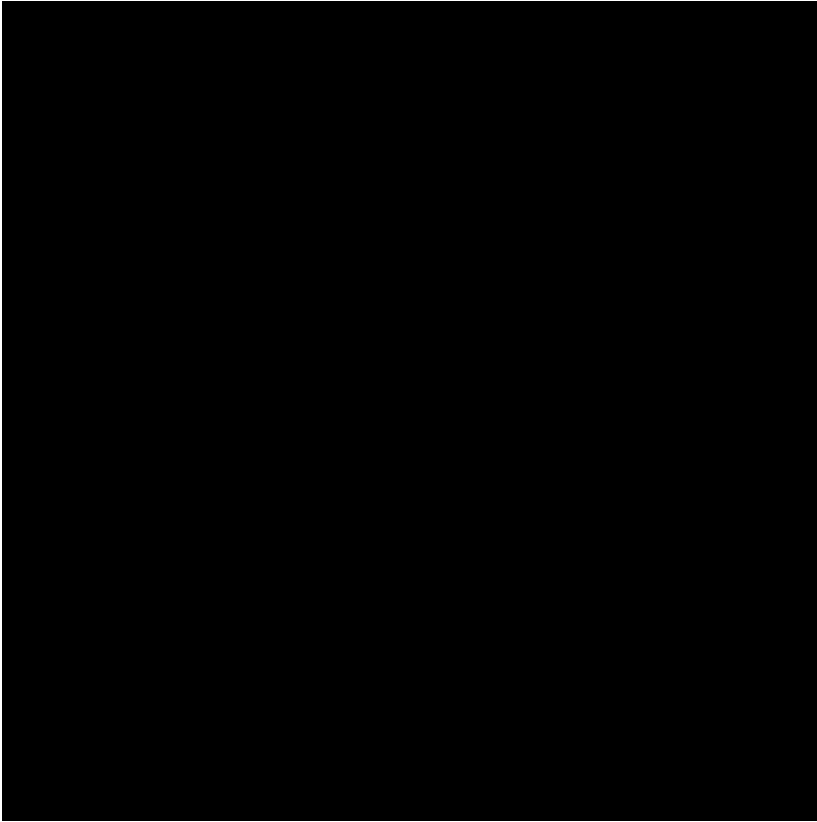




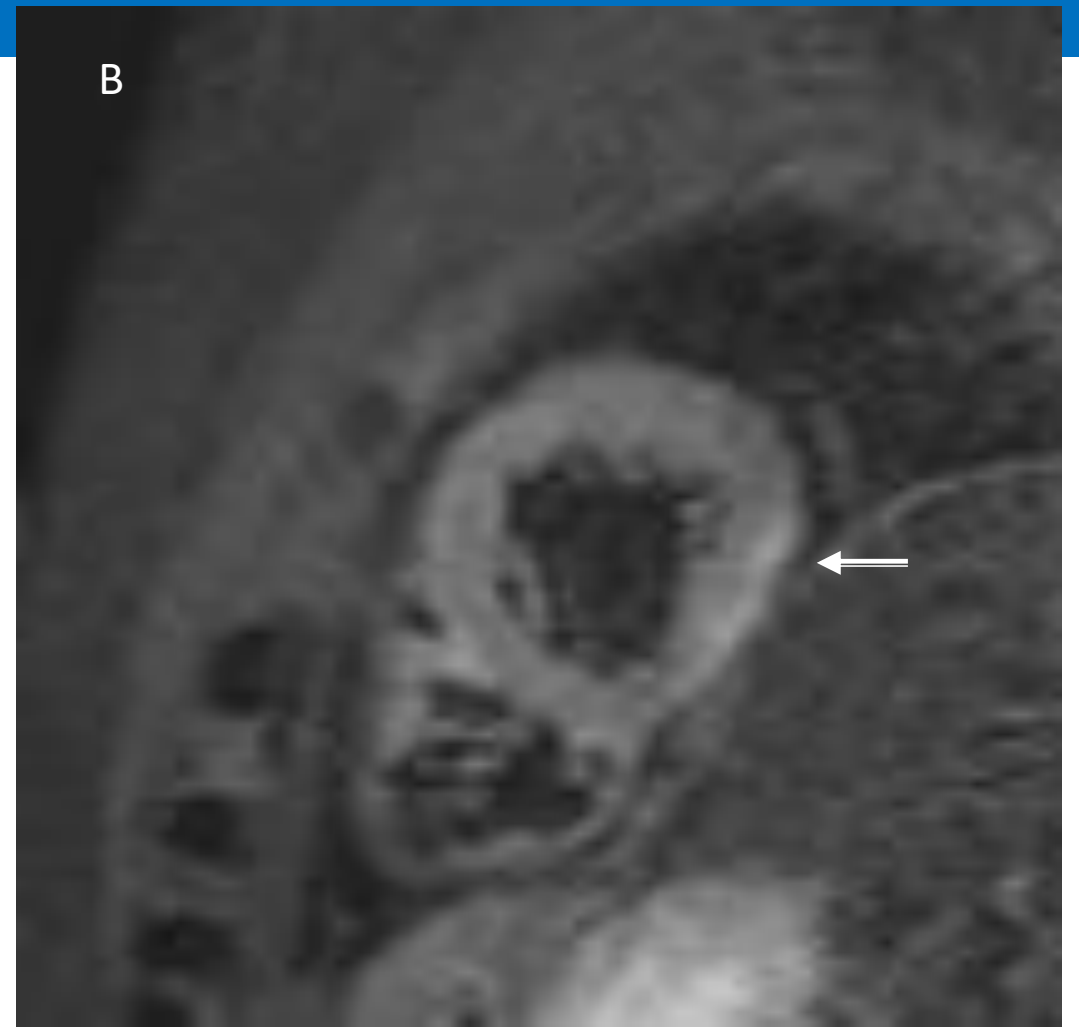
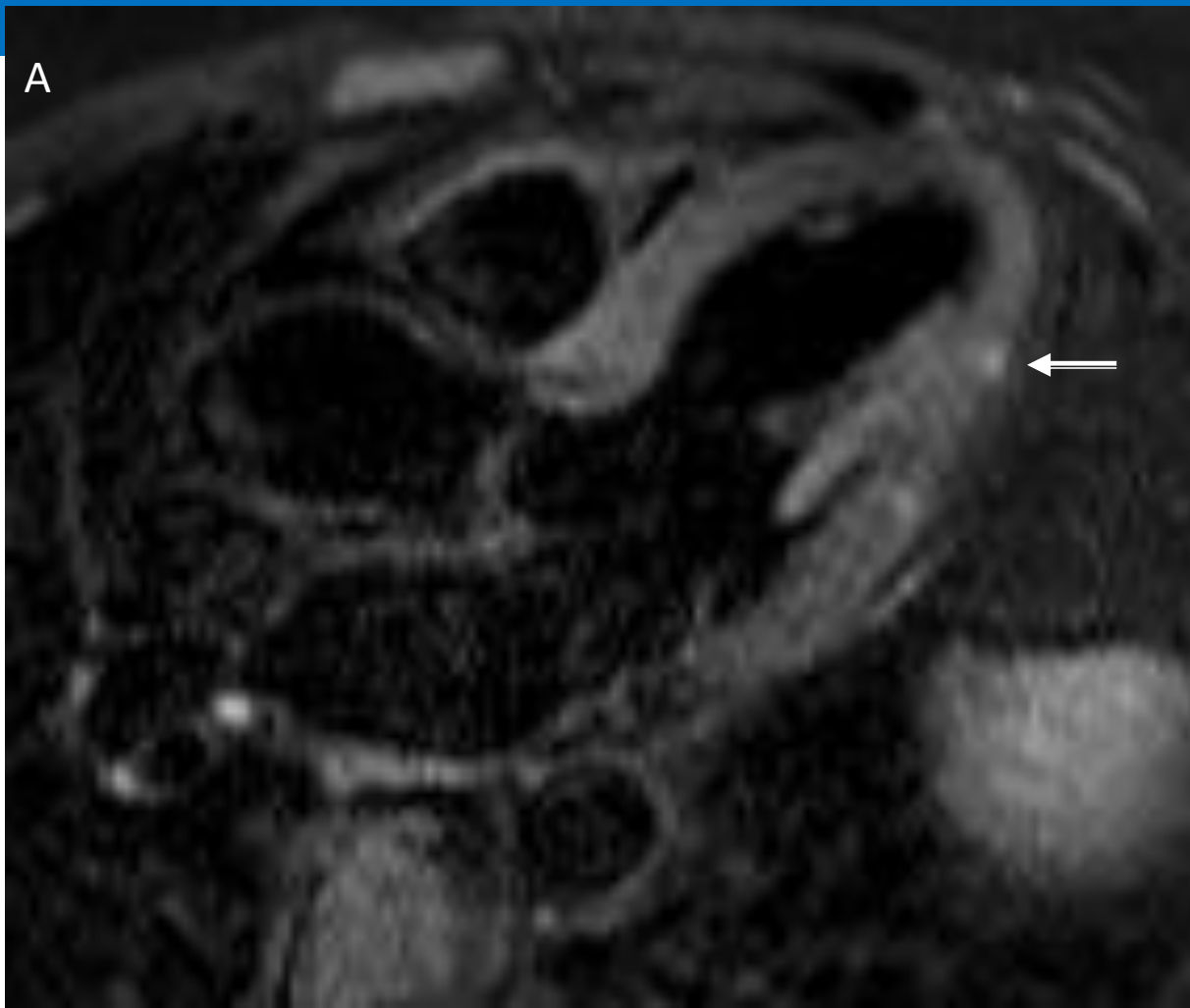
## Baseline echo



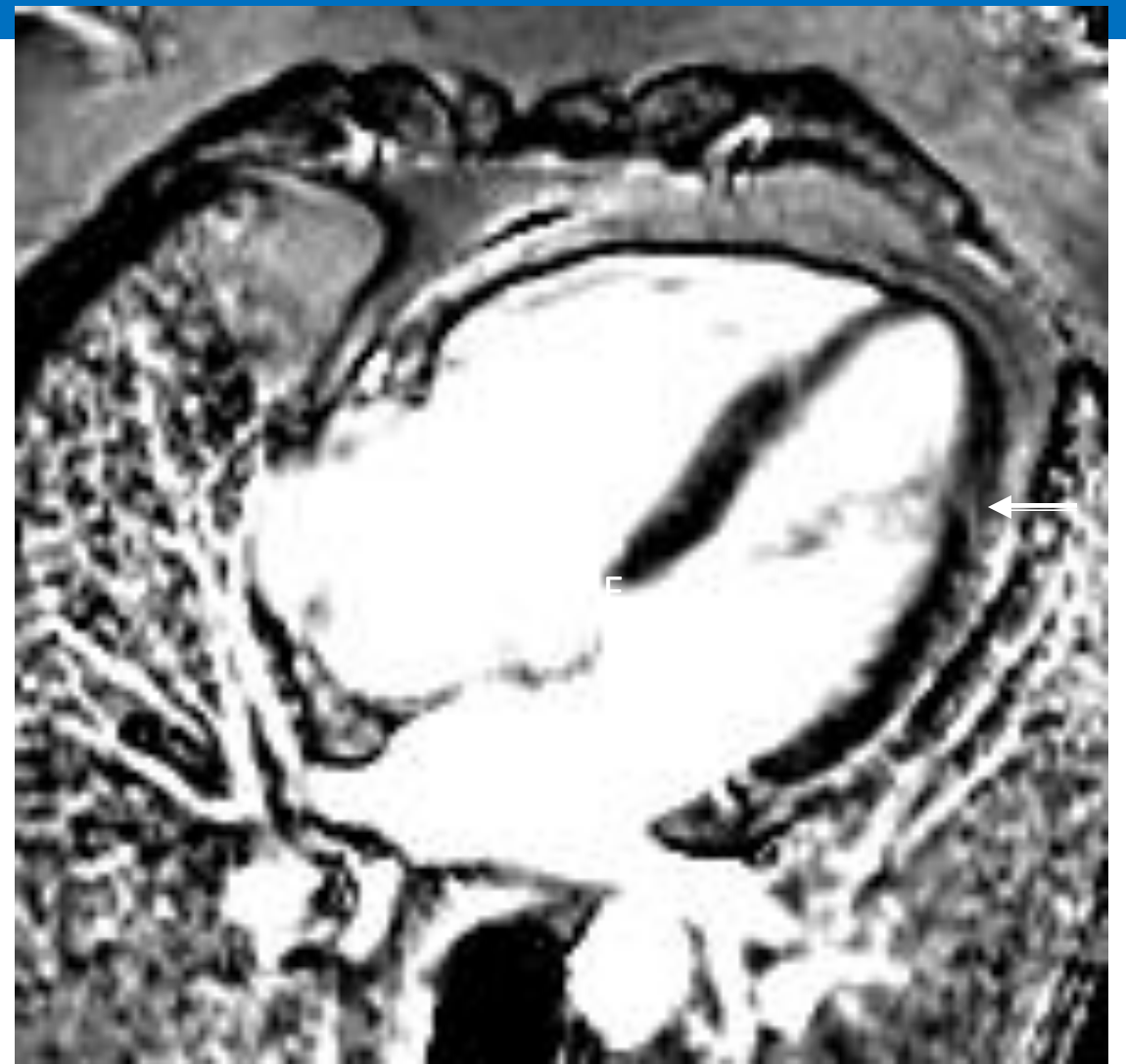
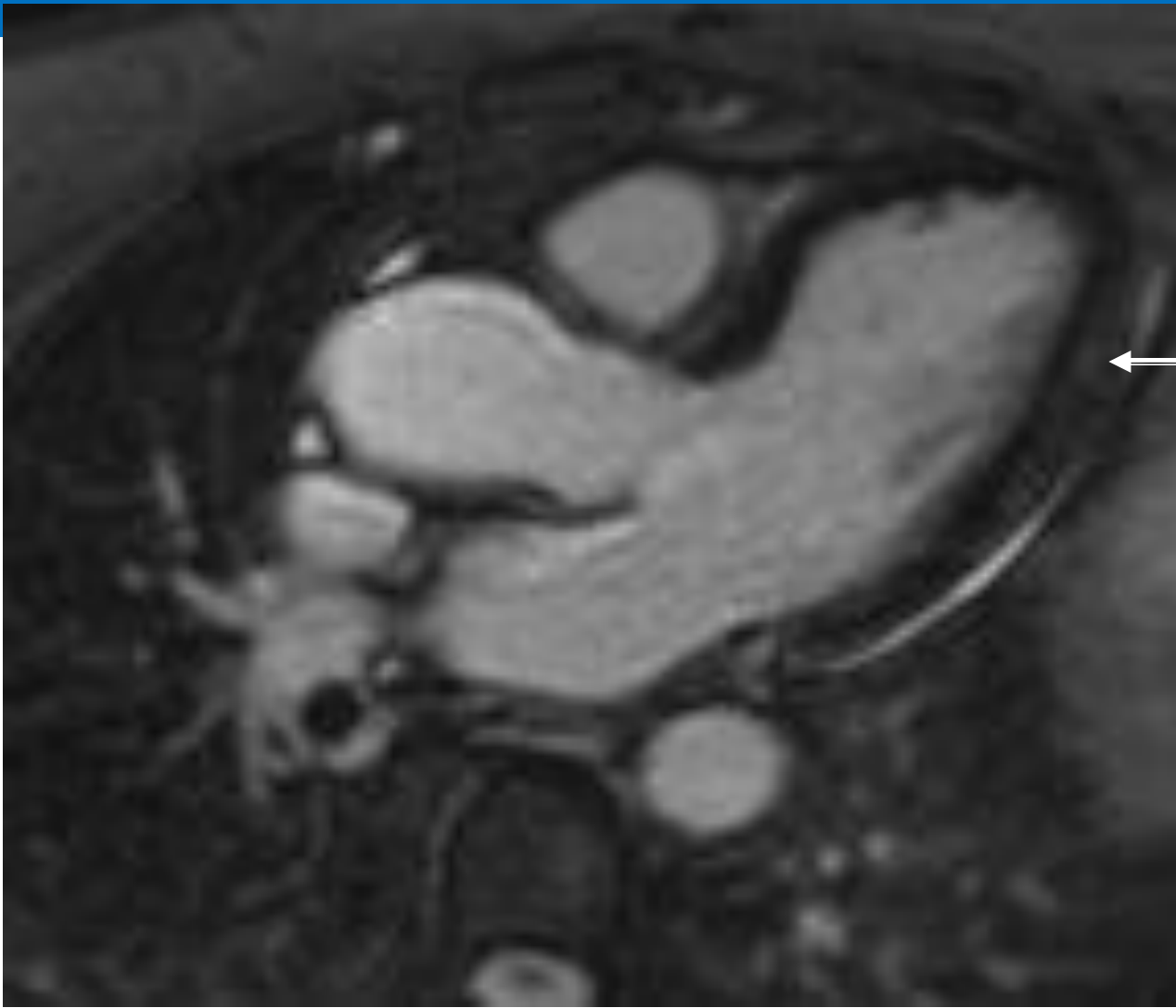
# Coronary arteriography



**24-hour Holter monitoring: No arrhythmias**



T2 short tau inversion recover (STIR) LVOT view (A) and short axis view (B) showing increased signal intensity in the mid to apical inferolateral wall.



Magnitude inversion recovery (C, LVOT view) and phase sensitive inversion recovery (D, PSIR, 4-chamber view) sequences showing subtle subepicardial late gadolinium enhancement (LGE) of the basal to mid inferolateral wall.

EXPERT CONSENSUS DECISION PATHWAY

# 2022 ACC Expert Consensus Decision Pathway on Cardiovascular Sequelae of COVID-19 in Adults: Myocarditis and Other Myocardial Involvement, Post-Acute Sequelae of SARS-CoV-2 Infection, and Return to Play



A Report of the American College of Cardiology Solution Set Oversight Committee

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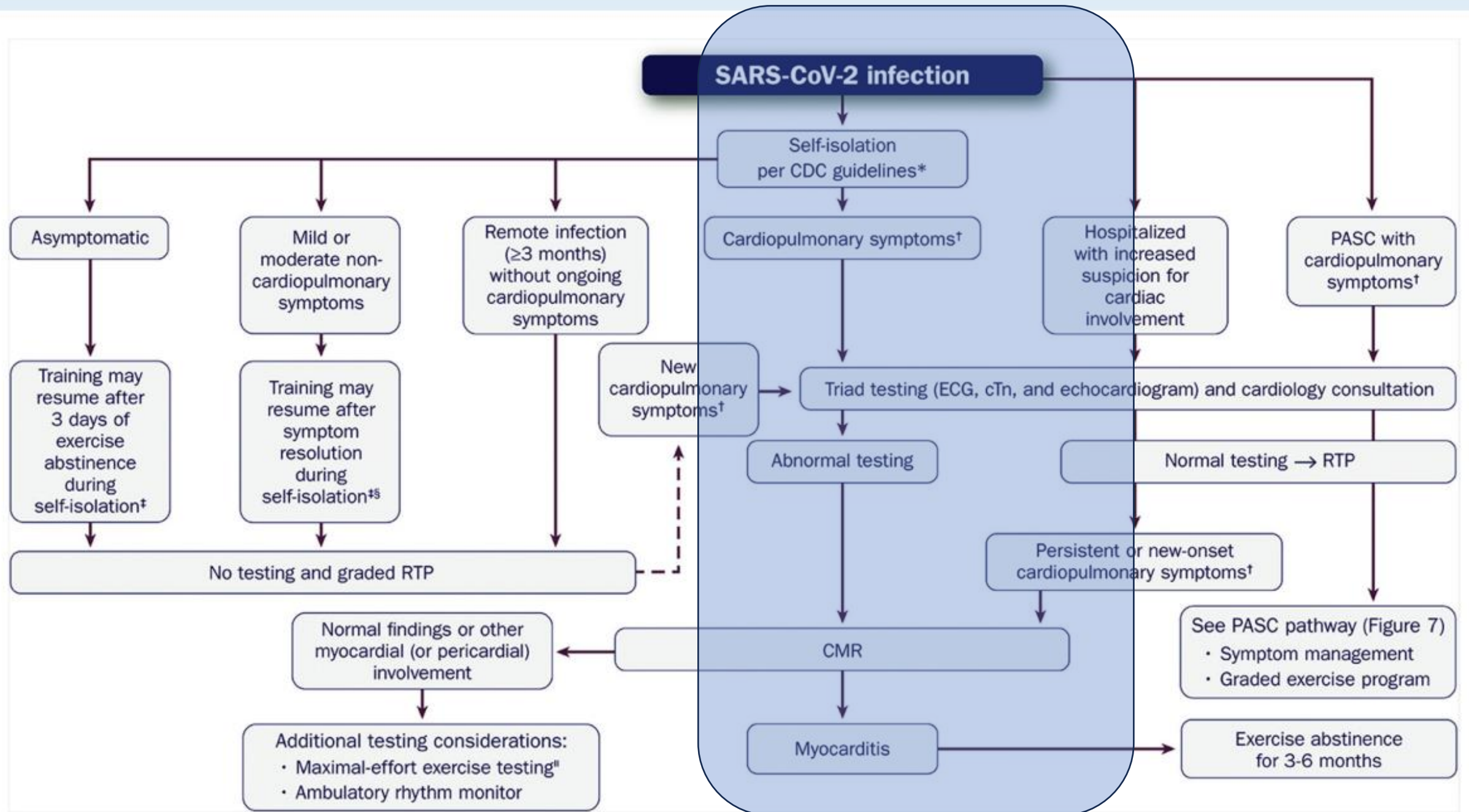
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**FIGURE 9** Evaluation of the Athletic Patient Convalesced From COVID-19 and Guidance on RTP and/or Intense Training



## 2020 ESC Guidelines on sports cardiology and exercise in patients with cardiovascular disease

**The Task Force on sports cardiology and exercise in patients with cardiovascular disease of the European Society of Cardiology (ESC)**

**Authors/Task Force Members: Antonio Pelliccia\* (Chairperson) (Italy), Sanjay Sharma\* (Chairperson) (United Kingdom), Sabiha Gati (United Kingdom), Maria Bäck (Sweden), Mats Börjesson (Sweden), Stefano Caselli (Switzerland), Jean-Philippe Collet (France), Domenico Corrado (Italy), Jonathan A. Drezner (United States of America), Martin Halle (Germany), Dominique Hansen (Belgium), Hein Heidbuchel (Belgium), Jonathan Myers (United States of America), Josef Niebauer (Austria), Michael Papadakis (United Kingdom), Massimo Francesco Piepoli (Italy), Eva Prescott (Denmark), Jolien W. Roos-Hesselink (Netherlands), A. Graham Stuart (United Kingdom), Rod S. Taylor (United Kingdom), Paul D. Thompson (United States of America), Monica Tiberi (Italy), Luc Vanhees (Belgium), Matthias Wilhelm (Switzerland)**

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# 2020 ESC Guidelines on sports cardiology and exercise in patients with cardiovascular disease

- Among individuals with healed myocarditis with persistence of LGE on CMR but no myocardial oedema at 3-6 months, those who are asymptomatic, with normal troponin and biomarkers of inflammation, normal LV systolic function, no evidence of ongoing inflammation on CMR, and absence of complex arrhythmias during exercise on prolonged ECG monitoring (48 h Holter ECG and exercise stress testing), should be evaluated on a case by case basis and may return to competitive sports on an individual basis.
- In contrast, individuals with extensive myocardial scar (>20% LGE) and persistent LV dysfunction should abstain from exercise programmes and sports activities involving moderate or high physical intensity.



Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
Comprehensive evaluation, using imaging studies, exercise stress test and Holter monitoring, is recommended following recovery from acute myocarditis to assess the risk of exercise-related SCD. <sup>455,462,463</sup>	I	B
Return to all forms of exercise including competitive sports <b>should be considered</b> after 3–6 months in asymptomatic individuals, with normal troponin and biomarkers of inflammation, normal LV systolic function on echocardiography and CMR, no evidence of ongoing inflammation or myocardial fibrosis on CMR, good functional capacity, and absence of frequent and/or complex VAs on ambulatory Holter monitoring or exercise testing. <sup>430,434,453,459,460,464</sup>	IIa	C
Among individuals with a probable or definitive diagnosis of recent myocarditis, participation in leisure-time or competitive sports while active inflammation is present is not recommended. <sup>459,460</sup>	III	C
Participation in moderate- to high-intensity exercise for a period of 3–6 months after acute myocarditis is not recommended. <sup>459–461,467</sup>	III	B
Participation in leisure exercise or competitive sports involving high intensity in individuals with residual myocardial scar and persistent LV dysfunction is not recommended.	III	C

## 6 months later:

- No symptoms
- ECG
- Echocardiography
- Treadmill stress test
- 24 hour Holter monitoring
- Troponin
- Cardiac MRI: No edema, ~3% LV LGE

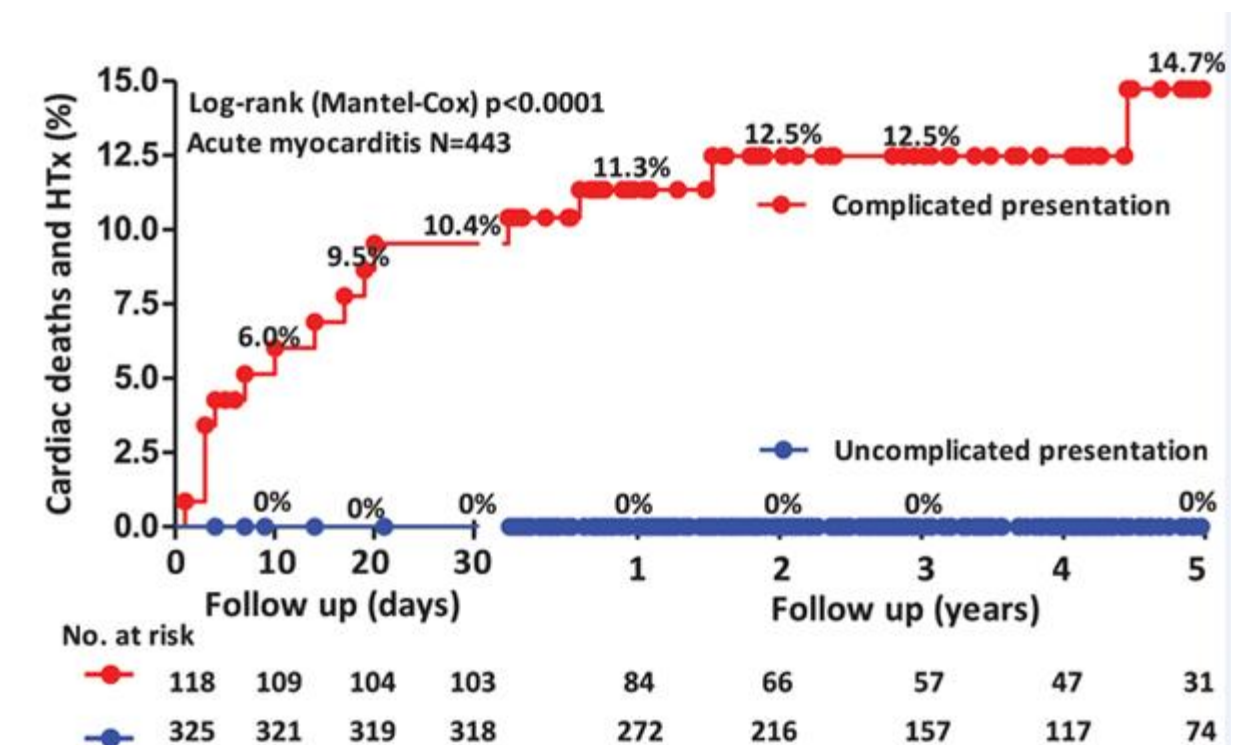


All without remarkable findings



**RTP**

- In a recent Italian registry (Lombardo registry, 443 patients , 5-year follow-up ), low LVEF, low cardiac output requiring inotropes or mechanical circulatory support, and sustained ventricular arrhythmias conferred a high risk of serious adverse events, while risk was negligible in the absence of these features.
- Cardiac mortality plus heart transplantation rates were 11.3% and 14.7% in patients with complicated presentation and 0% in uncomplicated cases (log-rank P<0.0001).



## ESC Guidelines and documents planned for 2025

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- **Cardiovascular disease during pregnancy** (Guidelines)

Chairpersons: Julie De Backer and Kristina Hermann Haugaa

- **Cardiovascular disease and mental health** (Consensus Statement)

Chairpersons: Hector Bueno and Christi Deaton

- **Myocarditis and pericarditis** (Guidelines)

Chairpersons: Massimo Imazio and Jeanette Schulz-Menger

- **Valvular heart disease** (Joint Guidelines with EACTS)

Chairpersons: Fabien Praz and Michael A. Borger

- **Focused update of the 2019 dyslipidaemia guidelines**



**Thank you for your attention**



- COVID-19 pandemic: 2/2020
- Vaccine: 12/2020
- First reported case of COVID-19 related myocarditis worldwide:  
4/2020