18th Gulf Heart Association Conference
November 12-14, 2026
OCEC, Muscat, Oman



POSTER PRESENTATION

Persistent Troponin Elevation Without Myocardial Injury: A Case of Macrotroponin Interference

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BACKGROUND

Elevated high-sensitivity troponin T (hs-TnT) in adolescents and young adults without a clear ischemic cause is a diagnostic dilemma. The differential is broad – **myocarditis, spontaneous coronary artery dissection, arrhythmia, pulmonary embolism** – and there is a risk of misclassifying patients as ACS.

Interpretation is hardest when a persistently elevated biomarker does not match the clinical trajectory, imaging, or expected kinetics of true myocardial injury.

We report persistently elevated hs-TnT in a young patient, ultimately attributed to analytical interference rather than myocardial injury, and outline the diagnostic reasoning.

DESIGN AND METHODS

Single-patient case report: an **18-year-old female** with pleuritic left-sided chest pain and elevated hs-TnT. No significant cardiac risk factors; ECG and vital signs unremarkable.

Age 14
Similarly elevated hs-TnT in her records; not investigated at the time

Index presentation
Pleuritic left chest pain, elevated hs-TnT. Treated as NSTEMI, then admitted for suspected myopericarditis; started on **ibuprofen + colchicine**

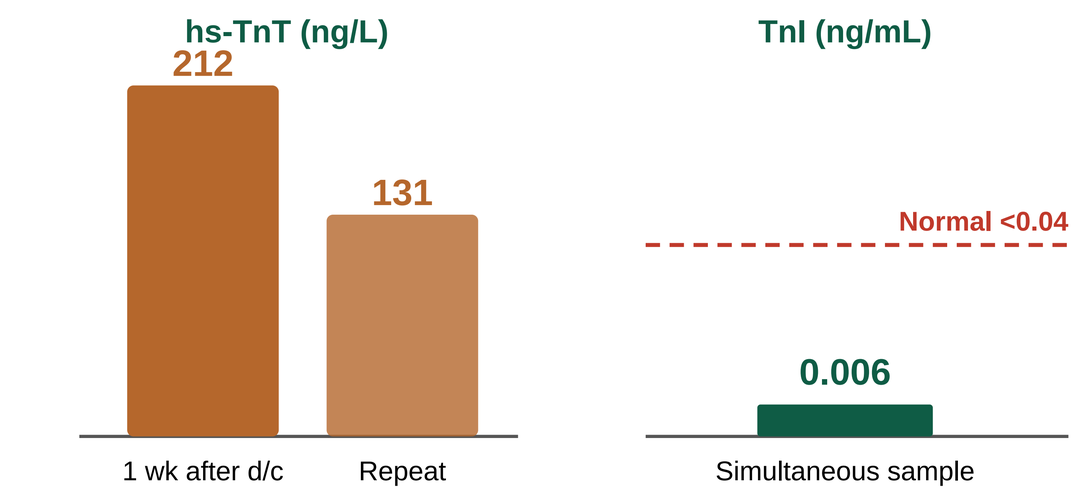
Work-up
Cardiac MRI, CT coronary angiography, CT pulmonary angiography and autoimmune panel: all normal

Discharge → 1 week later
Persistent chest pain, **hs-TnT 212 ng/L**; no new ECG changes, hemodynamically stable

Interference suspected
No rise-and-fall pattern, normal imaging and clinical course. hs-TnT and TnI sent **simultaneously on two different assay platforms**

RESULTS

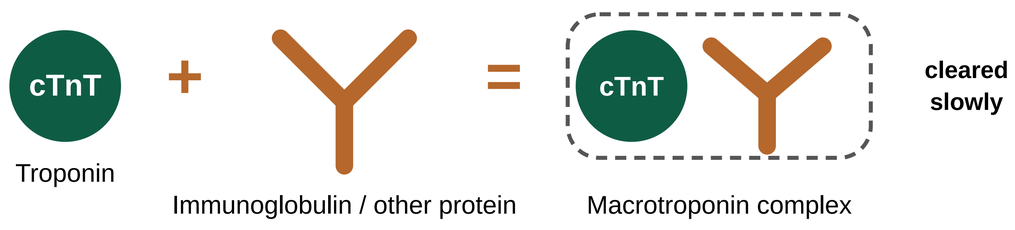
hs-TnT stayed elevated at **131 ng/L**, while simultaneous TnI was **normal (0.006 ng/mL; normal <0.04)**.



Bar heights are schematic; hs-TnT and TnI use different units and assay platforms.

Discordance between two troponin assays, with no clinical or imaging evidence of myocardial injury, is consistent with macrotroponin complex formation or heterophile antibody interference.

HOW THE INTERFERENCE ARISES



- Troponin binds immunoglobulins or other proteins
- The complex **evades normal clearance**
- Gives a **falsely elevated result on certain immunoassay platforms** while sparing others

CONCLUSIONS

Think interference
Persistently elevated hs-TnT without corroborating clinical, imaging, or serial-kinetics evidence of injury should prompt evaluation for **analytical interference**, particularly when it fails to trend as expected.

Cross-check the assay
Testing an **alternate troponin platform** can identify this pitfall, preventing unnecessary hospitalization, invasive testing and treatment, and the anxiety of a misdiagnosed ACS. Greater awareness among clinicians and laboratories may reduce diagnostic delay.

REFERENCES

1. Warner JV, Marshall GA. High incidence of macrotroponin I with a high-sensitivity troponin I assay. Clin Chem Lab Med. 2016;54(11):1821-1829.
2. Lagué M, Turgeon PY, Thériault S, Steinberg C. A false-positive troponin assay leading to the misdiagnosis of myopericarditis. CMAJ. 2022;194(12):E456-E459.