

# Elevated High Sensitivity Troponin in the Absence of Coronary Artery Disease: A Case Report

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The banner features a dark blue background with a photograph of ancient stone columns on the right side. At the top left, there are two circular logos: BCLF (Balkan Clinical Laboratory Federation) and TBS (Turkish Biochemical Society). To the right of the logos is a navigation menu with the following items: Meeting Information, Scientific Information, Bursaries, Registration & Accommodation, Sponsorship & Exhibition, and Contact Us. The main text in the center reads: **XXVII. XXX.** **Balkan Clinical Laboratory Federation Meeting National Congress of the Turkish Biochemical Society**. Below this, it says **BCLF 2019 TBS 2019**. Further down, the dates **OCTOBER 27-31, 2019** and the location **PAPILLON ZEUGMA CONVENTION CENTRE, BELEK ANTALYA - TURKEY** are listed. A red button with the text **REGISTER NOW** is positioned below the location. At the bottom of the banner, there are logos for **EFLM** (European Federation of Clinical Chemistry and Laboratory Medicine) and **IFCC** (International Federation of Clinical Chemistry and Laboratory Medicine).

**28th October 2019, Monday**

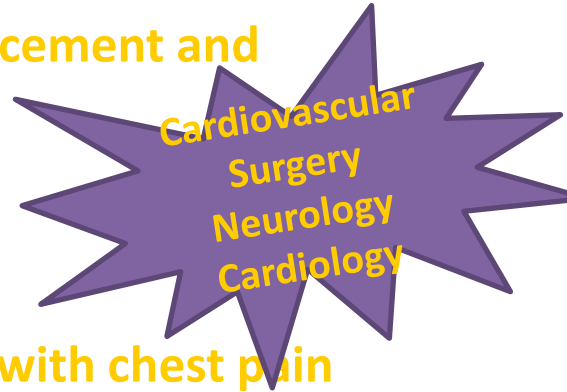
# How was the patient admitted to Emergency Unit?

- 57 years-old female
- Complaints:
  - light headedness
  - no shortness of breath, chest pain, nausea or vomiting
  - no contacts, fever, chills, cough or recent flu-like symptoms
- Further evaluations:
  - ECG → sinus rhythm with HR of 85/min & **minimal ST-T deviation**
  - Chest X-ray → no acute process
  - **Troponin T level → 22 (0-14) ng/L** significant if >14 ng/L



# What was the medical history?

- Past medical history of hypertension, depression, uterine cancer, cerebrovascular event and mitral valve replacement due to rheumatic valve
- 30.03.2009 **cardiovascular surgery for mitral valve replacement and Clexane (low MW heparin)**
- 20.11.2012 - **a cerebrovascular event (left hemiplegia)**
- 2013-2014 - **INR follow-up twice a month**
- 23.11.2015- **admission to the emergency department with chest pain**
  - high-sensitivity troponin T: 0.02 ng/mL (0,02-0,06 ng/mL )
  - Hgb level: 8.4 g/dL (12,4-16 g/dL)
  - discharged with the diagnosis of myalgia and anemia



# What was the medical history?



- 8.3.2016 - re-admission with fatigue & anemia (Hgb 8.7 g/dL)
- 2017-2018 - INR follow-up once a month
- 26.03.2019 - re-admission to the emergency department with light headedness

# How did we proceed?

Clinical  
Biochemistry!

Reason of  
unstable  
INR???

Test	Result	Reference ranges
CRP (mg/L)	7	0-5
Glukoz (mg/dL)	141	74-106
LDH (U/L)	263	0-248
TSH (mIU/L)	<b>14.21</b>	<b>0.34-5.86</b>
High-sensitivity troponin T (ng/L)	<b>22</b>	<b>0-14</b>



# How did we proceed?

We followed the patient by troponin T for MI



Troponin T values did not indicate MI



One unit of blood was given for dizziness due to anemia after which Hgb was found 8 g/dL & troponin was still mildly elevated (25 ng/L) and the patient was discharged

Time	Troponin T (0-14 ng/L)	Hgb (12,5-16 g/dL)
00:30	22	7.1
03:30	30	7.0
08:00	28	-
11:20	25	7.0

## The unsolved problem...

At both admissions, the patient presented with elevated troponins and discharged with elevated troponins and no definite diagnosis and was sent to the internal medicine outpatient clinic with recommendations for treatment and investigation of anemia

# Clinical biochemist's role...

- The patient was called back after 6 months checked for troponin and NT Pro-BNP



- **NT Pro- BNP: 1952 pg/mL** (significant if > 900 pg/mL at 50 - 75 years of age )

- **Troponin T level → 25 (0-14) ng/L** significant if >14 ng/L



- Echocardiography

- **Thyroid therapy**



- The patient was diagnosed as severe aortic stenosis and hypothyroidism



- Anjiography → • No coronary problem → • **Aortic valve replacement**



## When troponin's rise ...

- Cardiac troponins are the most sensitive and specific markers of myocardial injury
- But it is important to note that MI is certainly not the only cause for elevated cardiac enzymes, more specifically troponin



# Not only troponin but also BNP test...

- Calcific aortic stenosis is a chronic, progressive disease
- During the long latent period, patients remain asymptomatic because in chronic conditions, adaptation to symptoms occurs!
- It is clear that in patients with no overt symptoms (other than may be shortness of breath, fatigue, etc.) and unexplained increased troponin values, not only troponin but BNP (and NT pro-BNP) should also be the test of choice to differentiate and diagnose valvular heart disease



## As a result...

- Novel high-sensitivity assays can detect subclinical myocardial damage in asymptomatic individuals
- hscTn may have utility in the assessment of asymptomatic patients with severe valvular heart disease who do not have a clear traditional indication for surgical intervention\*
- The NT pro-BNP test may also be used as a reflex test for slightly elevated troponin levels in asymptomatic patients
- The importance of cardiac function tests should be discussed for more frequent follow-up of rheumatic valve patients

\**Guidelines on the management of valvular heart disease (version 2012): The Joint Task Force on the Management of Valvular Heart Disease of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS), European Heart Journal, Volume 33, Issue 19, 1 October 2012, Pages 2451–2496*

Thank  
you!

The image features the words "Thank you!" in a highly decorative, hand-drawn style. The letters are thick and filled with various colors: 'T' is yellow, 'h' is orange, 'a' is green with a dotted pattern, 'n' is purple, 'k' is orange with a red outline, 'y' is green with a dotted pattern, 'o' is red with a dotted pattern, and 'u' is blue with a dotted pattern. The exclamation point is blue with a green dot. Several stylized flowers are scattered around the text: a large pink flower with a yellow center is positioned in front of the 'y', and several smaller blue and purple flowers are placed around the 'k' and 'u'. The entire graphic is set against a light blue background.