

A Rare Case of Myxedema Coma Causing Cardiogenic Shock



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INTRODUCTION

- Thyroid hormone has widespread effects on the cardiovascular system. A hypothyroid state is known to cause cardiovascular dysfunction, hypotension and in extremely rare instances cardiogenic shock.
- Only a few case reports have been published in literature describing this phenomenon. We present a case of refractory cardiogenic shock in a patient presenting with myxedema coma.

CASE

41-year-old male with history of asthma, and hypothyroidism (with medication non compliance) presented with altered mental status, hypothermia, bradycardia and hypotension. ++ family history of thyroid disease.

Admission Labs

BNP - 24100 pg/ml TSH -104.1
Troponin I - 0.04 FT3 -1.03
Lactic acid - 6.1 FT4 - <0.15
Thyroid peroxidase antibody +ve



A swan-ganz catheter was placed

♥ MvO2 – 21% ♥ CI (ficks) - 1.3 ♥ CVP – 30 mmHg

TTE:- severe bi-ventricular failure with an ejection fraction of 17% and severe aortic insufficiency (Figure 1).

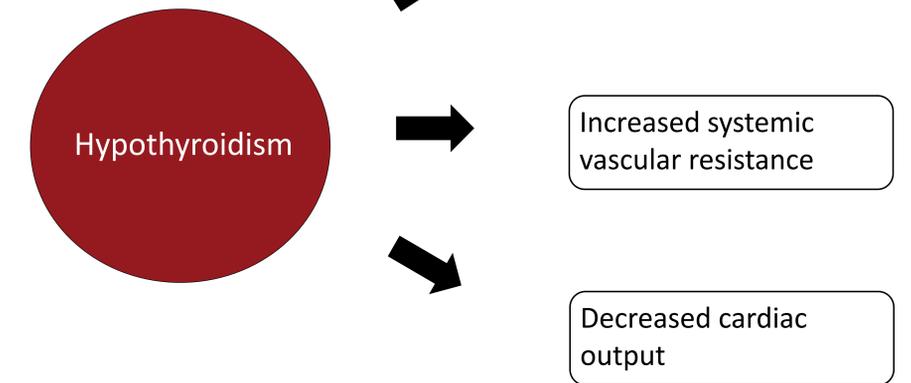


- IV levothyroxine 100mcg + IV hydrocortisone 50mg q8hr was given for 5 days.
- Was started on inotropic support with dobutamine and epinephrine.
- MvO2 improved initially but started worsening (Figure 2) even with thyroid replacement and inotropic support.
- Due to refractory cardiogenic shock → mechanical circulatory support with impella 5.5 was planned as bridge to cardiac recovery.

Patient coded with PEA arrest the morning of the planned surgery and ROSC was achieved. But after goals of care discussion, family decided to withdraw care in the light of poor prognosis.

Refractory cardiogenic shock is a rare complication of myxedema coma. IV thyroxine and mechanical circulatory support to bridge to recovery remains the standard of care

DISCUSSION



- Myxedema causing cardiogenic shock is rare and these patients are non-responsive to inotropic support but have shown the utility of starting steroids and IV levothyroxine.
- Since intravenous triiodothyronine (T3) rapidly normalized the myocardial performance and metabolic abnormality and impaired peripheral conversion of T3 to T4 in severely ill patient, it is also postulated that IV T3 may be superior to IV levothyroxine in this subset of patient.
- But most case reports show benefit of both T3 and T4 in treating cardiogenic shock and there is no existing clinical study describing superiority of IV T3 replacement over IV levothyroxine in patients with cardiogenic shock.

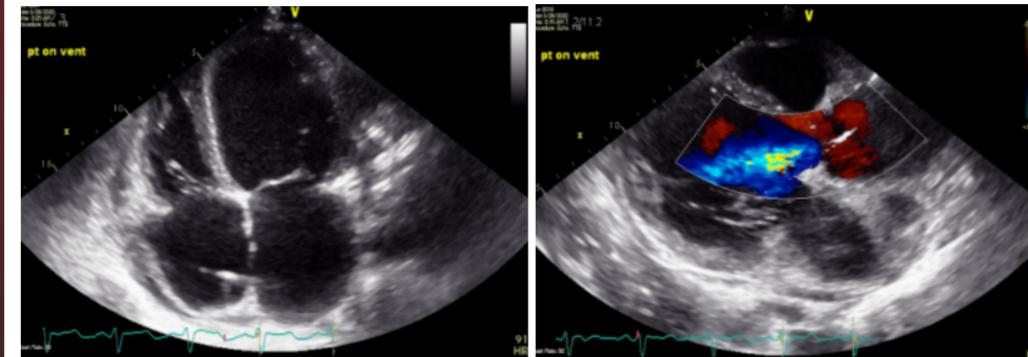


Figure 1

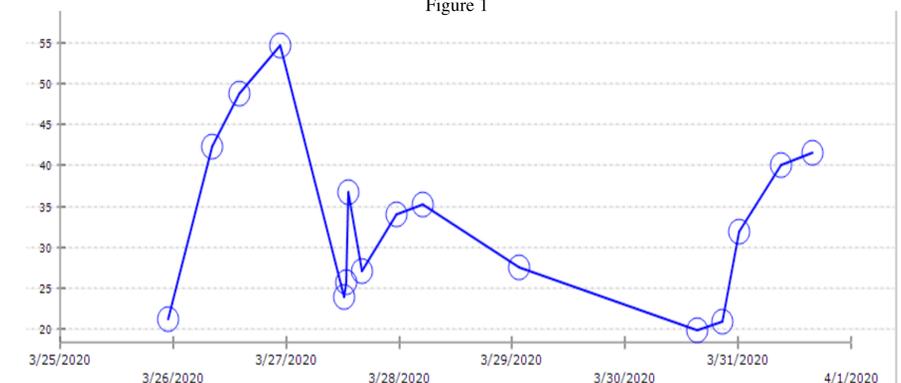


Figure 2

DISCLOSURES

None