

# FRIGIDLY COLD: A CLASSIC PRESENTATION

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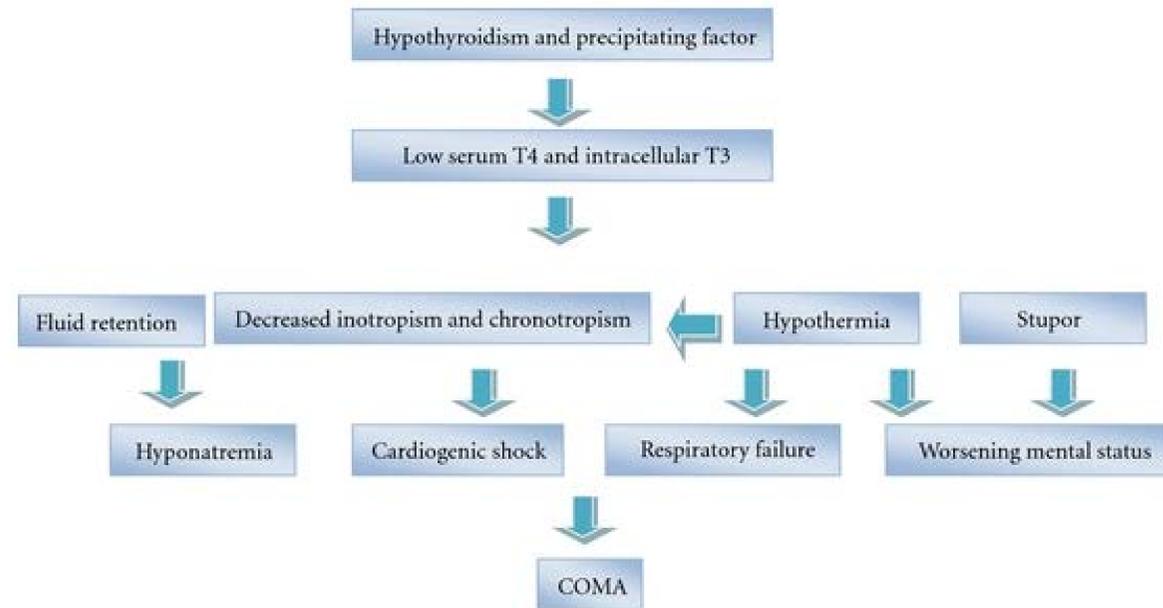
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## INTRODUCTION

The thyroid is an essential organ of the endocrine system and produces thyroid hormones which regulate multiple physiologic processes. Dysfunction can cause various clinical presentations with diagnosis relying heavily on laboratory testing. Hypothyroidism is a condition in which the thyroid fails to produce adequate amounts of thyroid hormone. This case highlights a severe form of hypothyroidism that is uncommonly encountered.

## CASE DESCRIPTION

A 64 year old woman with a history of arthritis and hypothyroidism presented to the hospital after two months duration of progressive weakness, excessive fatigue, and increased confusion. The patient had been diagnosed with hypothyroidism in the past, but had refused to see a physician despite her family's persistence. On presentation, her vital signs showed bradycardia with heart rates in the 30's, significant hypotension, and hypothermia. The patient's exam was significant for altered mental status, garbled speech, dry mucous membranes, cool extremities, and non-pitting bilateral lower extremity edema. Due to her clinical presentation, further history taking from the patient was not possible. Pertinent laboratory data was positive for a TSH of 127 and free T4 of 0. Further history from the family revealed that the patient had not taken her levothyroxine for approximately two years. Due to the patient's clinical instability, she was intubated for airway protection. Echocardiogram showed sluggish cardiac function and thus she was started on dobutamine. Endocrinology was consulted and she received a bolus of levothyroxine and hydrocortisone. This was followed by daily intravenous levothyroxine. Initially, she showed clinical and laboratory improvement; however, she failed extubation on two separate occasions and ultimately required a tracheostomy. One day following tracheostomy, she developed PEA arrest due to hypoxia and later passed away.

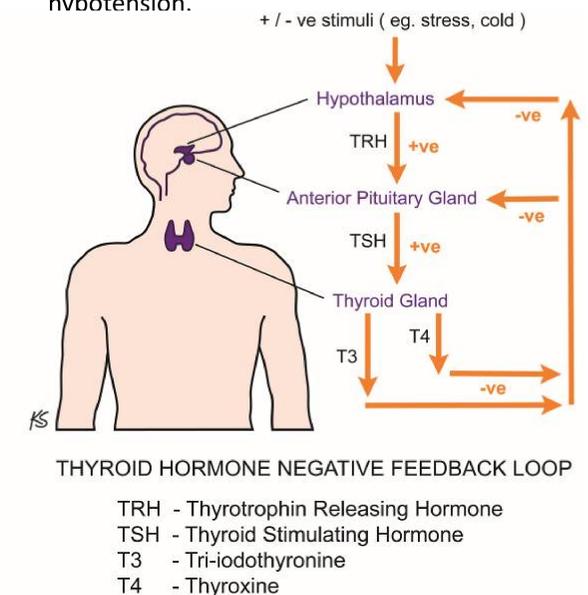


## Myxedema Coma – Symptoms

- Mental status changes
- Hypothermia
- Myxedema
  - Can be everywhere on the body
- Hypotension
- Cardiac arrhythmias
- Bradycardia
- Seizures
- Delayed relaxation in DTR's
- CO<sub>2</sub> retention
- Hyponatremia
- Pericardial effusion

## DISCUSSION

Myxedema coma is a severe form of hypothyroidism, which is rarely seen due to availability of thyroid function tests. It is a medical emergency with a high mortality rate. Clinical presentation is highly variable but often includes altered mental status, hypotension, and hypothermia. Other findings can include bradycardia, periorbital and perioral swelling, macroglossia, hyporeflexia, and xeroderma. Early identification is paramount for improving outcomes. Management is usually conducted in the ICU. Patients often require airway protection via intubation and aggressive hemodynamic support. Thyroid replacement should be initiated early along with intravenous steroids. Dosing of T4 consists of 300-500 ug bolus followed by 50-100 ug daily. T3 can also be used however limiting factors such as poor availability, serum fluctuations, and adverse cardiac effects make it a second line agent. External re-warming should be done with caution as it causes vasodilatation and may precipitate hypotension.



## REFERENCES

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