

Myxedema Coma in a Patient Recovering from Non Thyroidal Illness Syndrome

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Abstract: *Myxedema coma is one of the endocrine emergencies with high mortality rates even with treatment and usually associated with severe biochemical marker of hypothyroidism, unless it secondary hypothyroidism there is few myxedema coma cases with mildly elevated TSH. We describe a patient who presented with typical picture of myxedema coma with mildly elevated TSH secondary to non thyroidal illness, this has not been reported yet.*

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1. Clinical Case

A 62-year-old African American male with history of hypothyroidism for unknown duration or cause with questionable adherence to medications on levothyroxin 100 mcg daily he was discharged from different hospital three days before presentation where he was treated for *C. difficile* and then he was found unresponsive and brought to the emergency room with low blood pressure, hypothermia and hypoglycemia found to have glucose of 17mg/dl, which required 2 ampoules of D50 and continue to drop his blood glucose after two hours, vital signs: temperature: 31.7 °C Rectal, BP:109/79, Pulse:78, Respiration Rate:22, BMI:24 kg/m², physical exam revealed typical hypothyroidism, he was stupor withdraw upper extremities to painful stimuli, Delayed relaxation of deep tendon reflexes Most appreciated in the bicipital tendons, cold and dry skin, thyroid palpable not enlarged, Cardiovascular auscultation showed muffled, Regular rate and rhythm, no murmurs.

Thyroid function three months earlier showed TSH :51.3 (Ref. Range 6.2 - 14.6), Thyroxine - Free 0.3 (Ref. Range 0.8 - 1.8), per the scoring system of Geanina Popoveniuc, et al.(1) for myxedema coma he scored >60 so blood withdrawn and patient was given hydrocortisone 100 mg IV, Levothyroxine 250 mcg IV, broad spectrum antibiotics IV, also he was started on D10w 50 ml/h. blood tests showed ACTH 177 (Ref. Range 7 - 69), random Cortisol * 97.8, T3 - Total <10 (Ref. Range 60 - 180), Total Thyroxine (T4) 4.5 (Ref. Range 6.2 - 14.6), Thyroxine - Free 0.6 (Ref. Range 0.8 - 1.8), TSH 7.899 (Ref. Range 0.200 - 4.780), sulfonyleurea and insulin screening were negative, EKG showed extremely low voltage across the standard limb leads and across the precordium, Chest x-ray showed Mild cardiomegaly with moderate amount of vascular congestion, diffuse scattered airspace opacities and small bilateral pleural effusions, CTscan brain showed bilateral chronic subdural hematomas, and old lacunar infarct in the anterior limb of the right internal capsule. Blood C&S were negative and stool were negative for *C. difficile*.

Within 24 hours patient temperature went up to 36°C, mental status started to improve where he become more responsive and communicating minimally, D10 % infusion was decreased to 20 ml/hour from 80 ml/hour. Patient

continued on levothyroxine 100 mcg IV daily, repeated thyroid function after 3 days showed: T3 - Free 0.9, Thyroxine - Free 1.6, (TSH) 1.496.

Patient also has CAD, hypertension, end-stage renal disease on hemodialysis, history of squamous cell carcinoma of Laryngopharynx, status post chemo treatment and radiation therapy with neck recurrence of tumor and coud status was (Do Not Resuscitate Comfort Care-Arrest), in the fifth day he developed bradycardia subsequently PEA and cardiac arrest.

2. Conclusion

Myxedema coma is a clinical diagnosis and biochemical evidence can support the diagnosis but not essential which could be mask with other factor as non thyroidal illness syndrome.

References

- [1] Popoveniuc G, Chandra T, Sud A, Sharma M, Blackman MR, Burman KD, Mete M, Desale S, Wartofsky L. Endocr Pract. (A diagnostic scoring system for myxedema coma) 2014 Aug 1;20(8):808-17. doi: 10.4158/EP13460.OR