lymphadenopathy in the bilateral neck and mediastinum, but no distant metastases were identified. She then underwent total thyroidectomy with extensive dissection of the bilateral neck; pathology revealed one positive lymph node. On endobronchial biopsy, the mediastinal lymph nodes were benign. Immunohistochemistry revealed PD-L1 expression and gene assay showed an NSD3-NUTM1 fusion of the NUT gene. Oncology advised systemic treatment with carboplatin/taxol and considered Pembrolizimab, an anti-PD-L1 immunotherapy agent.

Discussion
The prognosis of NMC is less than 1 year and only 20-30 cases are reported per year in the USA. NMC is a poorly differentiated subtype of squamous carcinoma characterized by a chromosomal rearrangement of the NUT gene, involving molecular translocation with the BRD4 gene in 70% of cases. It remains challenging to treat NMC, as metastasis is present on diagnosis in most cases and there is currently no established approach. In a report of 40 patients from the NUT Midline Carcinoma Registry, surgical resection correlated with significantly improved survival in contrast to initial radiation or chemotherapy. Recently, BET domain inhibitors have emerged as a promising class of targeted agents for tumors with BRD4-NUT fusions. Their efficacy is unknown for other NUTM1 fusions. Both BET domain and histone deacetylase inhibitors are in clinical trials, and next-generation BET and CDK9 inhibitors have shown preclinical activity. Our patient likely benefited from early intervention with surgical therapy. Her PET scan findings suggest that re-sampling her mediastinal tissue would be prudent. Given her lack of BDR4-NUTM1 fusion, it is unknown if she would benefit from BET inhibitor.

Conclusion
NMC is an underrepresented cancer that warrants further investigation into treatment modalities and novel immunotherapies.

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We report a case of a 108-year-old female with a past medical history of CKD stage 3, hypertension, CHF, and atrial fibrillation who was brought to the emergency department (ED) by her grandson for seizures. The patient has no history of seizures, hypothyroidism (previous TSH 6 years back was 2.29 micro IU/mL), diabetes, or previous radiation exposure. The family noticed the first seizure 8 hours prior to admission with eyes rolling backward, shaking for 1 minute and slurred speech upon awakening. She had 2 other seizure episodes prior to arrival to the ED. Vital signs in the ED showed a temperature of 31.7°C, BP of 85/50, HR of 35, RR of 8, and SpO2 was 83% on room air. Given the patient’s age, code status was changed to DNR/DNI. Blood work in the ED revealed a sodium of 146 mEq/L (136-145), anion gap of 25, Creatinine of 2.67 mg/dL (last creatinine prior to this admission was 1.65 mg/dL), and a troponin of 0.04 mg/mL (<0.04). Thyroid function testing was not done in the ED. Home medications included Lasix, digoxin, isosorbide mononitrate, and atenolol. The patient was admitted to the medical floor for workup of bradycardia and was being worked up for beta-blocker/digoxin toxicity but continued to be bradycardic despite atropine. She became hypoglycemic to 37 mg/dL. The patient was admitted to the CCU at night on day 1 of admission and was started on dopamine and glucagon drips. Sulfonylurea screen was negative, and the patient did not have further hypoglycemic episodes. While in the CCU, blood work showed a lactic acid of 10 mEq/L (0.4-2.0), TSH of 21.03 micro IU/mL (0.45-5.33), free T4 of 0.61 ng/dL (0.70-1.70), and total T3 71 ng/dL (87-178). Myxedema score was >130. Digoxin level came back elevated at 4.5 ng/ml (0.9-2.0). cosyntropin stimulation testing was negative for adrenal insufficiency and thus the patient was not started on steroids. Urinalysis revealed pyuria with blood, but no urine cultures were done. Blood cultures were negative. The patient was given levothyroxine 200 mcg IV in the AM on Day 2 of admission and was started on antibiotics with azithromycin, cefepime, vancomycin, and metronidazole given concern for sepsis. Hypoglycemia resolved and glucagon was discontinued. In the evening of Day 2 of admission, despite being on a dopamine drip, the patient became increasingly bradycardic, hypotensive, and short of breath. She was initially stabilized after a dose of bicus, atropine, and epinephrine. However, her BP and respiratory status continued to decline, and the patient passed away.

In conclusion, myxedema coma should be suspected in patients presenting with typical symptoms and should be tested for on presentation even when no prior history of hypothyroidism exists.

Thyroid
THYROID DISORDERS CASE REPORTS II

Myxedema Coma: A Fatal Diagnosis in a Patient with No Known History of Hypothyroidism
Bayan Chaker, MD1, Hussam Alim, MD1, Mahmoud Chaker, MD1, Louisa S. El-Zein, MD1
1Wayne State University/Detroit Medical Center, Detroit, MI, USA.
2John Dingell VA Hospital/Wayne State University, Detroit, MI, USA.

SAT-507
Myxedema coma is a rare yet commonly missed diagnosis. Early detection is key to management as this diagnosis carries a high mortality rate.

Thyroid
THYROID DISORDERS CASE REPORTS I

Hyperthyroidism Induced Hepatic Apoptosis
Sabreen Ahmed, MD1, Julia David, MD1, Lydia Yonne Melendez-Ramirez, MD1
1Wayne State University/Detroit Medical Center, Detroit, MI, USA.
2John Dingell VA Hospital/Wayne State University, Detroit, MI, USA.

SUN-506
Background:
Graves’ disease is commonly associated with abnormal liver function tests, most frequently ALP, but the exact
mechanism is not fully understood. In vitro and in vivo animal studies have shown elevated T3 activity can induce hepatocyte apoptosis via a mitochondrial-mediated pathway. This case demonstrates a patient with elevated aminotransferases and hepatic apoptosis most likely secondary to severe hyperthyroidism.

Clinical Case:
50 year old female with a past medical history of migraines was seen by primary care for fatigue and 15 lb weight loss in one month. She was found to be hyperthyroid with TSH < 0.1 uIU/L (n=0.34-5.6), free T4 3.48 ng/dL (n=0.58-1.64) and mildly elevated aminotransferases of AST 77 IU/L (n=15-41), ALT 144 IU/L (n=12-63), which increased within a week to 159 IU/L and 309 IU/L respectively. ALP and bilirubin were within normal range. She was started on methimazole 20 mg twice daily by her PCP. The patient developed vomiting and stopped taking methimazole after 3-4 days. Upon initial presentation to endocrine clinic, found to be clinically hyperthyroid and as LFTs were improved but still elevated, she was re-challenged with methimazole at a lower dose as well as started on a beta blocker and cholestyramine. TTS checked was elevated at 2.10 ng/mL (n 0.87-1.78). Graves' disease was confirmed with elevated TSI as well as RAI uptake and scan showing increased homogenous uptake.

She had extensive workup for another etiology by hepatology including autoimmune, which were negative. Her fibrosis score was stage F1-F2 (n=F0) and necroinflammatory activity grade A3 indicating severe activity (n=grade A0). Core needle biopsy of the liver showed focal lytic necrosis/apoptosis and abundant pigment-laden Kupffer cells signifying recent hepatocellular injury. Her ALT and AST down trended and normalized with repeat fibrosis score of F1 and necroinflammatory activity grade A0. She eventually had definitive therapy with RAI treatment.

Conclusion: In most cases of hyperthyroid induced liver dysfunction, liver histology showed fatty infiltration, cytoplasmic vacuolization, nuclear irregularity and hyperchromatism.

This case, without any other known causes that could explain her hepatic injury, indicates the possible role of hyperthyroidism in hepatic apoptosis.

Tumor Biology
TUMOR BIOLOGY: DIAGNOSTICS, THERAPIES, ENDOCRINE NEOPLASIAS, AND HORMONE DEPENDENT TUMORS

Prostatic Acid Phosphatase Is Not Regulated by Androgens During Prostate Development and Tumorigenesis
Sudeh Izadmehr, PhD, Shen Yao, MD, Alexander Kirschenbaum, MD, Alice C. Levine, MD.
Icahn School of Medicine at Mount Sinai, New York, NY, USA.

SUN-143
INTRODUCTION: Prostatic acid phosphatase (PAP) is a soluble factor secreted by prostate luminal epithelial cells. PAP expression correlates with prostate cancer (PCa) bone metastases and poor survival. The androgenic regulation of PAP in prostate development and tumorigenesis is not fully understood. We investigated the relationship between PAP and androgens in human prostate specimens and in vivo. HYPOTHESIS AND OBJECTIVES: We hypothesized that PAP expression was independent of androgens. Our objectives were to determine the immunohistochemical expression of PAP in human fetal prostate tissue, human PCa bone metastases, and xenograft and surgical castration mouse models. METHODS: Immunohistochemical staining for PAP and three androgen-regulated proteins, the Androgen Receptor (AR), Prostate-Specific Antigen (PSA), and ETS-related gene (ERG) protein, was carried out on human fetal prostate (9.5, 11.5, 13, 16.5, 18 and 20 weeks of gestational age), archival human PCa bone metastases, and PCa mouse models. For xenograft studies, PAP-expressing Pca cell lines, LNCaP, C42B, and VCaP cells, were inoculated subcutaneously into SCID mice. A castration study with surgical or sham castration was performed after VCaP tumors were palpable. Mouse tumor growth and weight were measured biweekly, and tumor tissue isolated after mouse sacrifice. RESULTS: PAP expression was observed in the fetal prostate as early as 11.5 weeks of gestational age. Strong PAP expression was noted in all human PCa bone metastases examined, both treatment-naive and castrate-resistant (n=10). However, AR and ERG expression was absent in two of four castrate-resistant specimens. PSA was weakly expressed in human castration-resistant bone metastatic prostate specimens. In vivo, PAP expression was observed in all tumor models; however, the expression of PAP differed among androgen-sensitive models; LNCaP (low PAP), C42B (moderate PAP) and VCaP (high PAP). Castrated VCaP tumors underwent tumor stasis and were significantly smaller compared to intact mice. Strong expression of PAP was observed after castration. In contrast, AR, PSA, and ERG expression were reduced in castrated VCaP tumors compared to tumors from intact mice. Double staining of tumors for PAP and AR demonstrated a population of cells that were positive for PAP but negative for AR expression located in hypoxic areas near necrosis. CONCLUSIONS: Our findings demonstrated that PAP is expressed early in normal human fetal prostate development prior to the secretion of significant androgens or expression of AR. In mouse xenografts and human PCa bone metastases, androgens did not significantly regulate PAP expression. These data demonstrate that PAP is a marker of early progenitor cells in the normal prostate and is persistently expressed after castration. PAP may be a suitable target for the treatment of castration-resistant metastatic disease.

Diabetes Mellitus and Glucose Metabolism
ISLETs, LIVERS, PLACENTA, AND VASCULATURE — THE MULTITISSUE IMPACT OF DIABETES
A Novel ERRα-Dependent Insulin Signaling Pathway
HUI XIA, Graduate Student1, Vincent Giguere, BSC,PHD2.
1McGill Univ, Montreal, QC, Canada, 2McGill Univ, Montreal, QC, Canada.

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Insulin resistance, a condition in which a cell, tissue, or organism fails to respond appropriately to insulin, is a hallmark for the development of type 2 diabetes and a major