

Neutropenic Fever: A Rare Life-threatening Complication of Methimazole induced Agranulocytosis.

INTRODUCTION

- Agranulocytosis is an infrequent but potentially life-threatening complication of antithyroid medications such as methimazole. Patients recently started on antithyroid medicines should be closely monitored for flu-like symptoms such as fever and sore throat, followed by timely discontinuation of medications to prevent fatal outcomes. Clinicians may be faced with diagnostic uncertainty when patients on methimazole present with symptoms of hyperthyroidism such as fever, diarrhea, and laboratory derangements like neutropenia.^{1,2}

CASE DESCRIPTION

- A 21 year old female with a past medical history of Grave's disease presented with fever, vomiting and watery diarrhea for 5 days.
- She was started on methimazole 3 weeks prior due to thyrotoxicosis.

VITALS

Temperature	102.6 °F
Heart Rate	112/min
Blood Pressure	117/68 mm of Hg
Respiratory Rate	22/min
SpO ₂	98% on room air

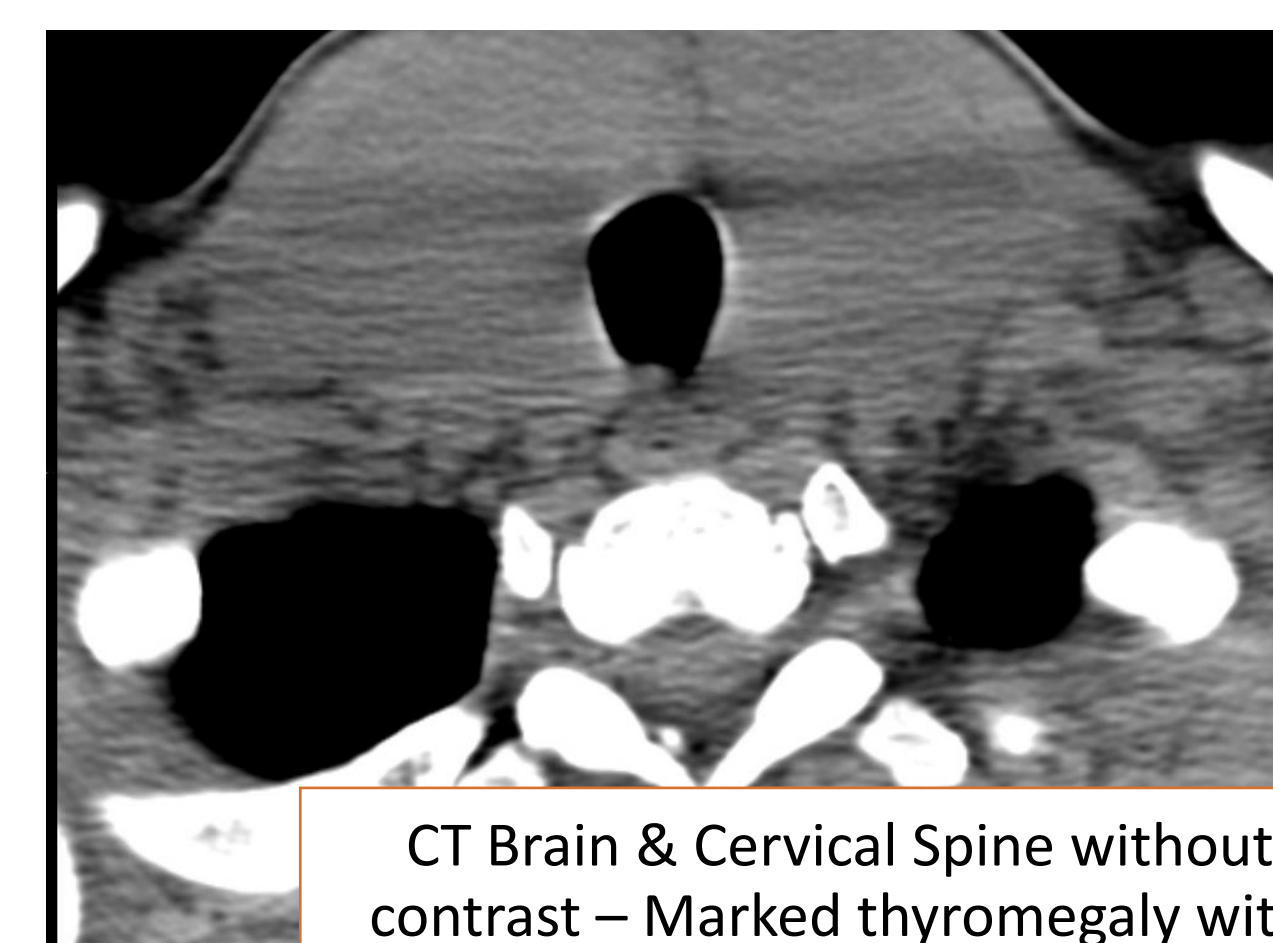
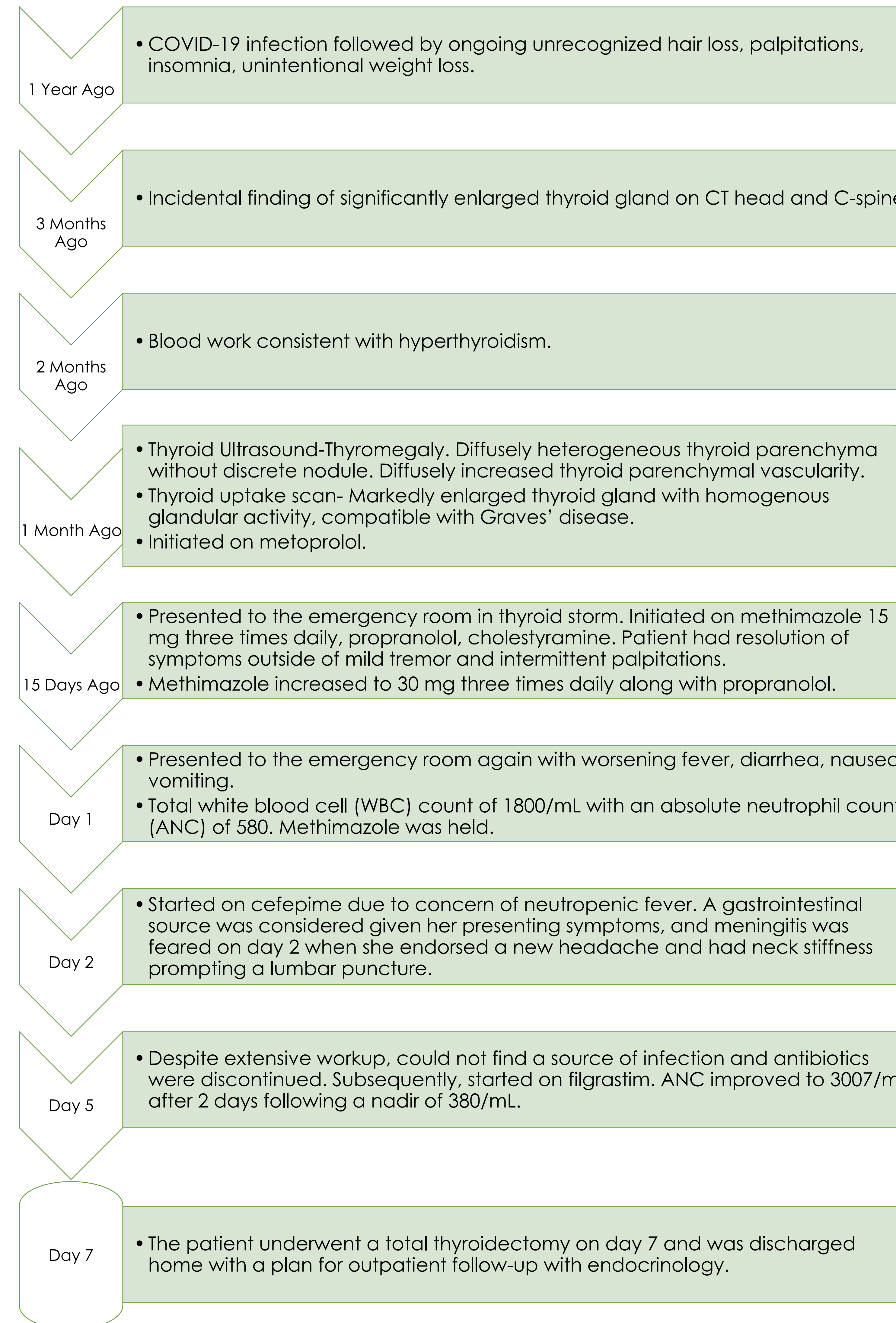
PHYSICAL EXAM

- Patient appeared **diaphoretic** and **tremulous**.
- Mucous membranes were dry with posterior oropharyngeal erythema and palpable anterior cervical lymph nodes.
- Thyroid gland was **warm** and **enlarged**.

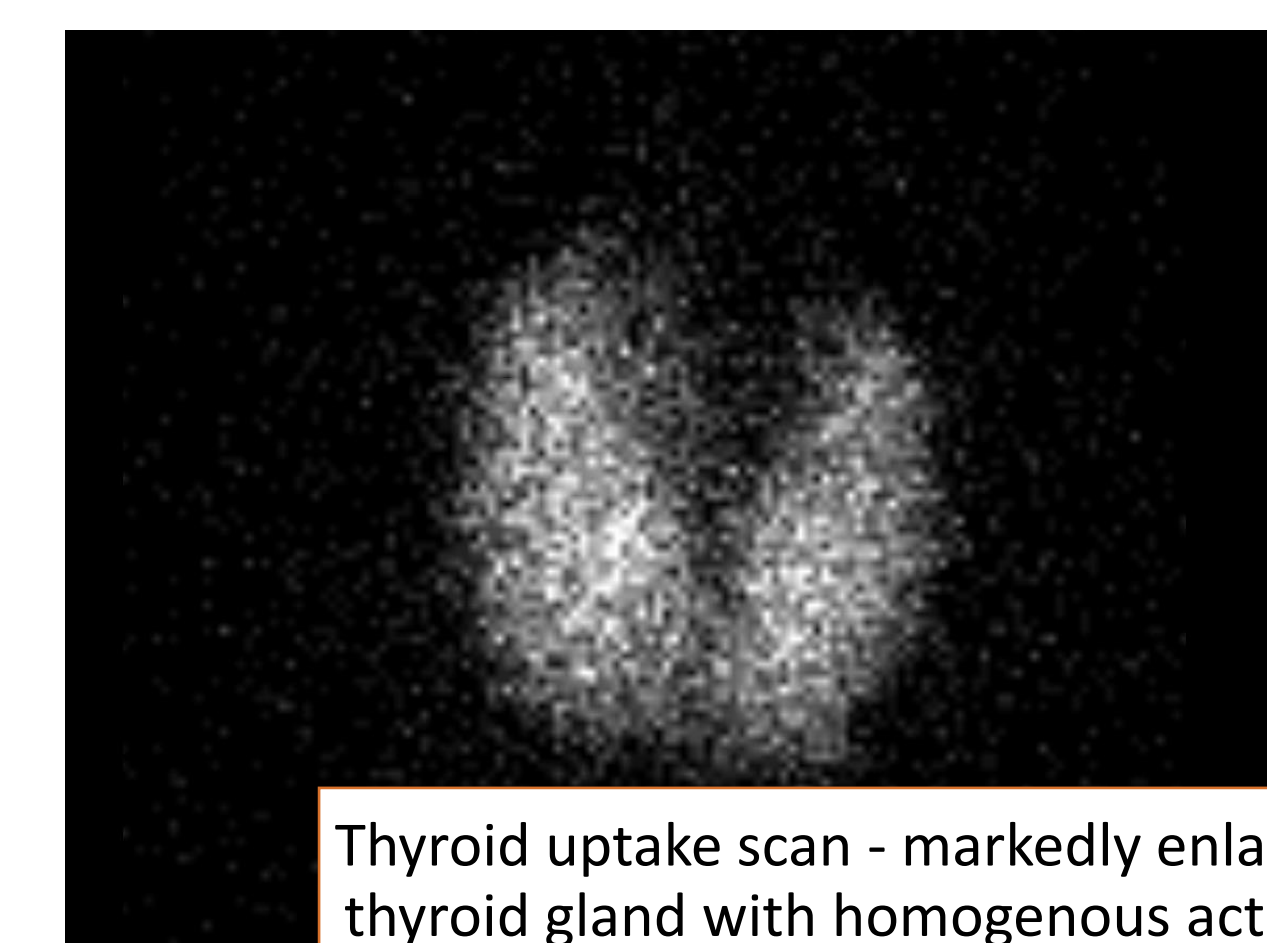
INITIAL LABS

Total WBC Count	1800/mL
Absolute Neutrophil Count	580
TSH	<0.05 uIU/ml
Free T4	4.69 ng/dL
Free T3	23.56 ng/dL
Thyroid Stimulating Antibody	457%

CLINICAL COURSE



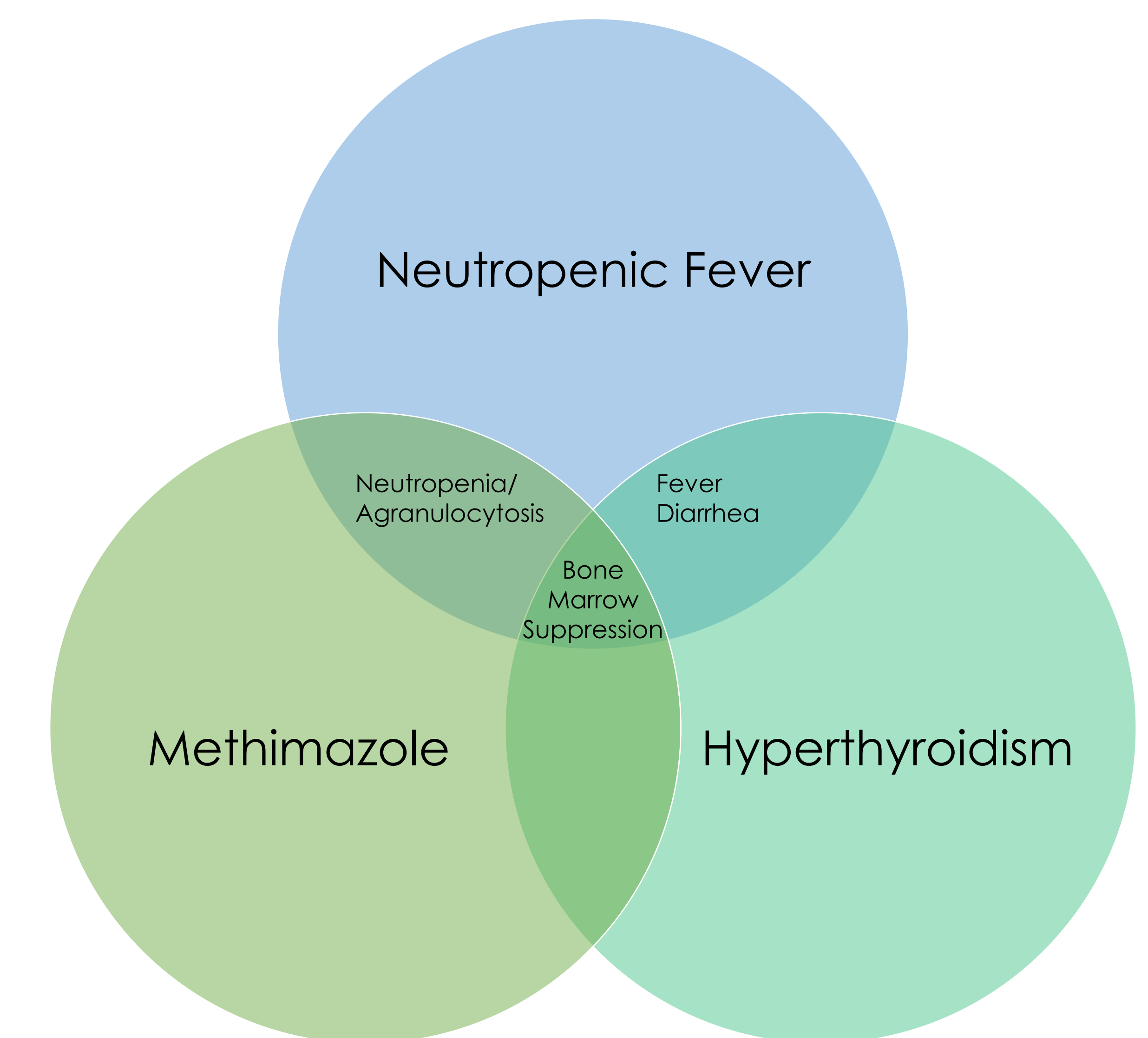
CT Brain & Cervical Spine without contrast – Marked thyromegaly with tracheal narrowing.



Thyroid uptake scan - markedly enlarged thyroid gland with homogenous activity consistent with Grave's disease.

DISCUSSION

- Antithyroid drugs should be held as early as possible in patients presenting with infectious symptoms and should be checked for neutropenia to prevent fatal complications such as neutropenic sepsis.^{1,2}
- Moreover, patient education is critical and should not be undervalued during the prescription of antithyroid drugs.¹



REFERENCES

- Chaudhry LA, Mauzen KF, Ba-Essa E, Robert AA. Antithyroid drug induced a granulocytosis: what still we need to learn? Pan Afr Med J. 2016 Feb 4;23:27. doi: 10.11604/pamj.2016.23.27.8365. Erratum in: Pan Afr Med J. 2016 Jul 18;24:250. PMID: 27200132; PMCID: PMC4856502. [Link](#)
- Nagarajan VD, Morales A, Pleasant L, Shenoi A. Sepsis and thyroid storm in a patient with methimazole-induced agranulocytosis. BMJ Case Rep. 2020 Jul 6;13(7):e235536. doi: 10.1136/bcr-2020-235536. PMID: 32636230; PMCID: PMC7342222. [Link](#)