Severe Hypercalcaemia
Unusual presentation of Graves' thyrotoxicosis

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Case Presentation

- 46-years-old woman
- 2 months history of
  - Thirst, Polydipsia, Polyuria
  - Constipation
  - 3-stones weight loss
  - Abdominal pain
- PMHx: Pulmonary embolism, Personality disorder, No thyroid disease
- FHx: No history of thyroid disease
- Drug Hx: Quetiapine, Lamotrigine, Lorazepan
  - No OTC medications, Off lithium for 5 years

- Clinically dry, anxious looking, talking gibberish
- HR-120, BP- 152/62, T-37.2, R-16, Sat 100% Air

- Systemic examination: NAD

- Goitre: firm, symmetrical, no nodules
- Palmar erythema
- No Eye signs

Initial Investigations

	Results	Normal Range
Corrected Calcium	3.15 mmol/L	2.18-2.58
PO_4	1.45 mmol/L	0.80-1.50
Urea	13.5 mmol/L	2.5-8.0
Creatinine	140 mcmol/L	50-90
PTH	0.6 pmol/L	1.0-6.1
TSH	<0.03 mU/L	0.35-5.5
FT4	68 pmol/L	11.5-22.7
FT3	27.8 pmol/L	3.5-6.5
FBC, CRP, LFT	Normal	

- Burch-Wartofsky score = 50: Suggestive of thyroid storm
  - Temperature 37.2 =5
  - Delirium =20
  - Abdominal pain = 10
  - Tachycardia 120-129 bpm= 15

Working Diagnoses
- Thyroid Storm
- Hypercalcaemia ? Cause

Management

- Carbimazole, Porpanolol, IV Glucocorticoid were commenced
- Hydration with IV 0.9% NaCl
- IV Pamidronate
- Further investigations for cause of hypercalcaemia

Further Investigations

- Myeloma screen: negative

- CT thorax, abdomen, pelvis: NAD
- Bone scan: NAD
- ACE -135 (0-52)

- Vitamin D3 -11 nmol/L (50-125)
- PTHrp <1.0

Follow up

- Reviewed in clinic 8/52 after discharge
- Clinically well
- Serum Calcium level remained within normal range
- TFT had improved
- TRAb 3 U/L (<1)

Case Progress

Date	22 Feb	25 Feb	27 Feb	1 Mar	4 Mar	5 Mar	7 Mar
Ca^+	3.15	2.76	2.88	3.10	2.92	2.60	2.46
TSH	<0.03					<0.03	
FT4	68.1					24.5	
Urea	13.5						5.0
Creatinine	140						85

Diagnosis: Hypercalcaemia secondary to Graves' thyrotoxicosis

Discussion

- Mild asymptomatic hypercalcaemia is common in hyperthyroidism
- One-fourth of patients with proven hyperthyroidism without increased parathyroid level, had hypercalcaemia[1]
- Symptomatic hypercalcaemia is a rare presentation of hyperthyroidism
- Several case reports of thyrotoxicosis induced hypercalcaemia[2-5]
- Serum calcium usually normalizes once hyperthyroidism has improved

References
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5. Twycross RG et al. Symptomatic hypercalcaemia in thyrotoxicosis. Bri Med Bulletin. 1970 June