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Primary hyperparathyroidism in pregnancy presenting as hyperemesis

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Introduction

Primary hyperparathyroidism in pregnancy can be associated with serious maternal and neonatal complications. We present a case of primary hyperparathyroidism presenting during pregnancy as hyperemesis.

Case Report

- A 22 year old primiparous lady with type 2 diabetes, hypertension and obesity (BMI 39.4) was admitted at 12 weeks gestation with intractable vomiting. She had similar admissions earlier in this pregnancy with 'hyperemesis'.
- TSH was normal. Hyperglycemic emergencies were ruled out. She was found to have a biochemical picture of primary hyperparathyroidism, with raised calcium and an elevated PTH.
- An ultrasound scan of parathyroid revealed a 9.5mm well defined soft tissue nodule in relation to the lower pole of the right lobe of thyroid, raising a probability of parathyroid adenoma.

Tests	Results
Adj Calcium	3.16mmol/L (2.1-2.58)
PTH	17.9pmol/L.(1.2-4.2)
TSH	1.62mU/L
HbA1c	5.6% (DCCT)
Glucose	6.5mmol/L
Serum electrophoresis	No paraprotein detected
ACE	20u/L (20-95)
24hr urine calcium	22.2mmol/1.6L of urine (2.5-6.2)
24hr urine catecholamines	negative

- During second trimester, she underwent an open exploration of the neck and removal of a single, slightly large, right lower para-thyroid gland.
- Although the para-thyroid hormone levels dropped initially, it plateaued at approximately 11pmol/L.
- Histology did not support parathyroid adenoma or hyperplasia.
- Six days later, she underwent re-exploration and removal of left parathyroid gland which was retro- tracheal in position.
- Intra-operative para-thyroid hormone estimations showed a satisfactory drop in PTH level to 1.1pmol/L.
- Intra-operative frozen section confirmed an adenoma.
- Post operatively, she was established on alpha-calcidol. She delivered a healthy baby at term.

Weeks of gestation	Calcium level (mmol/L	PTH level(pmol/L
12 weeks	3.16	8.2
13 weeks	3.31	
19 weeks	3.00	
20 weeks	2.91	17.9
Post first surgery- Day 1 20 weeks	2.27	14.4
Post second surgery- Day 1 21 weeks	2.6	<0.6
Post second surgery- Day 4	2.16	

Discussion

Primary hyperparathyroidism in pregnancy can lead to adverse outcomes.
Early part of second trimester is the best time to operate as

- risks of surgery and anaesthesia are minimal
- foetal parathyroid glands are formed during second and third trimester
- hypercalcemia in third trimester may lead to hypertension / pre-eclampsia

Maternal	Neonatal
Hyperemesis gravidarum	Permanent hypoparathyroidism
Nephrolithiasis	Seizures
Preeclampsia	Hypotonia
Pancreatitis	Low birth weight
Hypercalcemic crisis	Tetany
Miscarriage	Poor feeding
Premature labour	Respiratory distress
Cardiac arrythmia during labour	Death

Conclusion

- This case highlights the importance of checking calcium in pregnant women presenting with intractable vomiting.
- Intra operative PTH measurements could be useful during difficult operations.
- Timely multidisciplinary approach in the management of such a patient is crucial for best maternal and foetal outcomes.

References

- Schnatz PF, Curry SL; Primary hyperparathyroidism in pregnancy: evidence-based management. Obstet Gynecol Surv. 2002 Jun;57(6):365-76.