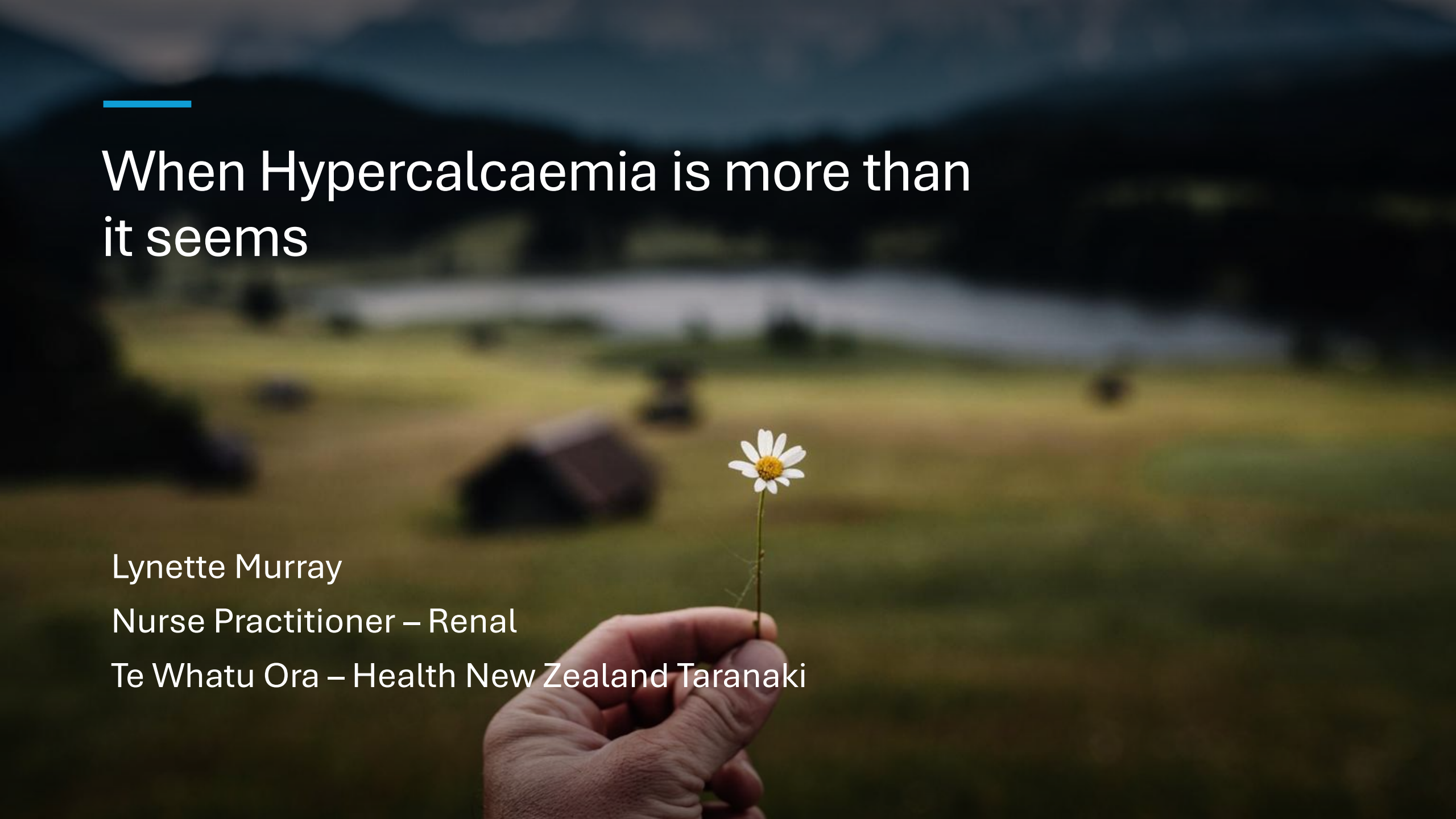
When Hypercalcaemia is more than it seems

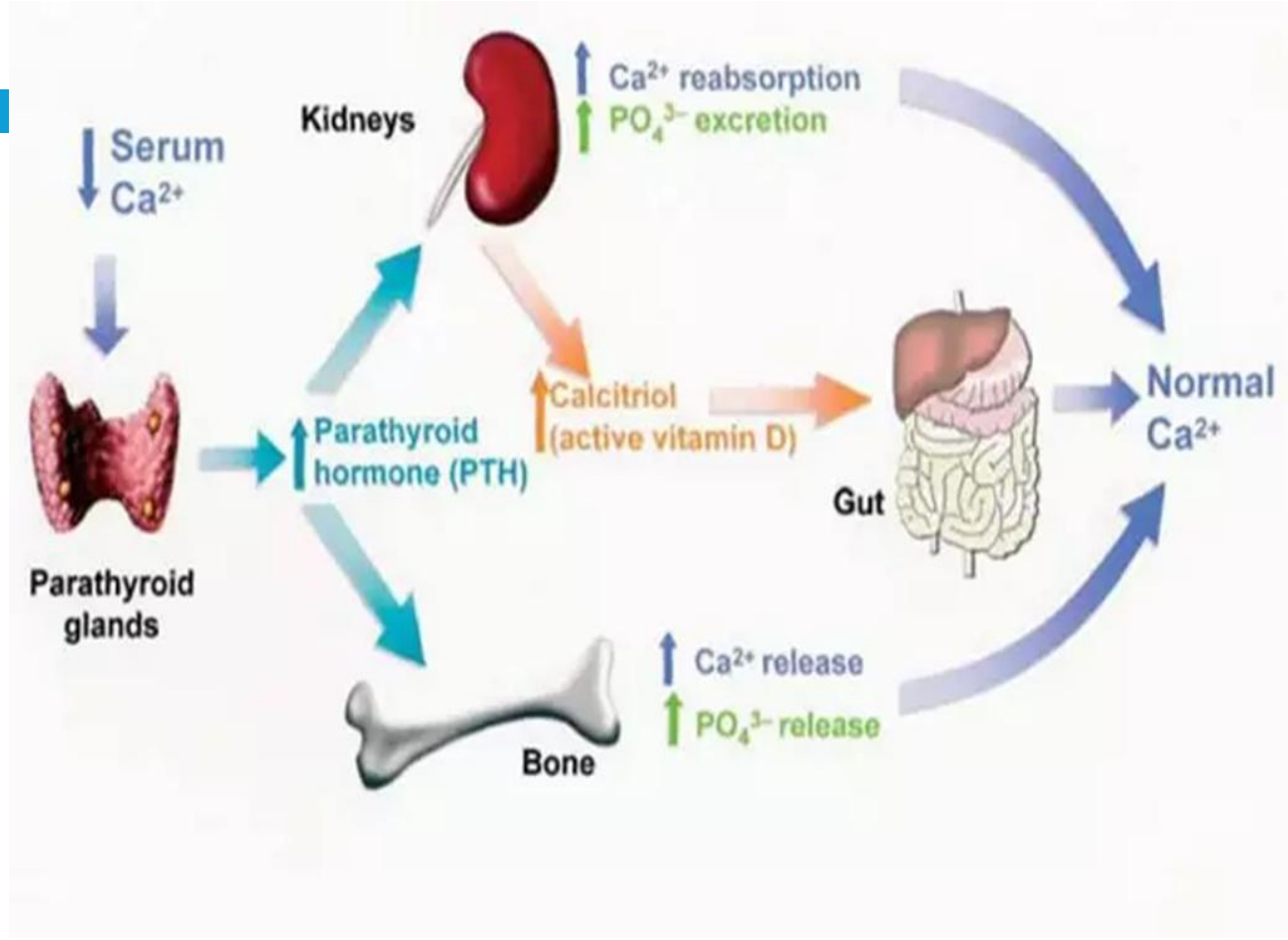


Lynette Murray

Nurse Practitioner – Renal

Te Whatu Ora – Health New Zealand Taranaki

Introduction



Introducing

- **Cher:** 76 years old
- Referred by General practitioner.
- Progressive renal decline with eGFR of 28ml/min
- Ultrasound: Small kidneys, Small bladder calculi
- **PmHx:**
- Hypertension
- Hypothyroidism
- Gout
- Never Smoked.



Cher.

- Prioritised in to my clinic
  - First meeting – March 2023

  - FmHx - Her brother had GN, otherwise no other Hx renal disease, No hx Ca
  - Symptoms of note:
    - Occasional reflux symptoms – bile in mouth at night
    - Cough for 3 years – started at the same time as starting ACEi.
    - Worse when air turns cold and at night
    - Bloods: Cal 2.92, corr 3.22 PTH 25.7 eGFR 28ml/min
  - Other symptoms:
    - Denied Nausea, vomiting constipation, abdo pain, thirst, Polyuria.
    - No confusion

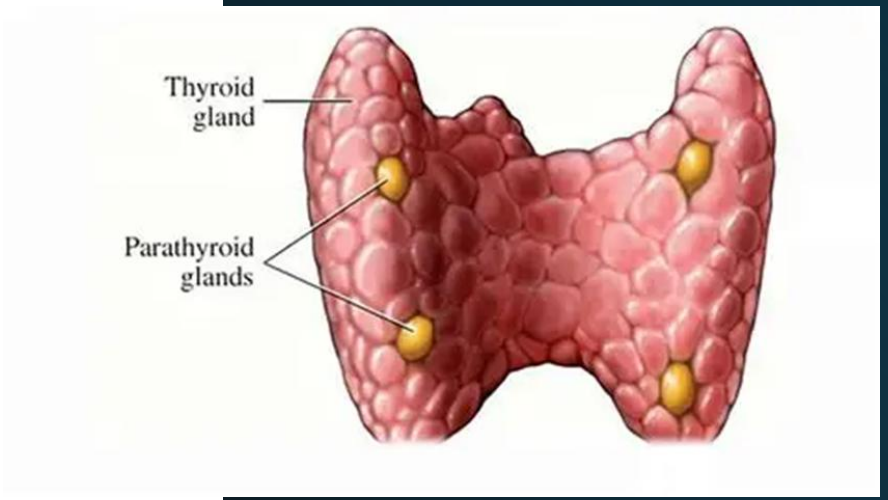
What came first chicken or the Egg?

- Normal Process.
  - PTH – Target Cells in bone and Kidney
  - Calcium ions in extracellular fluid drops – PTH brings it back within normal range.
  - Then Phosphate will then return to normal.
- Kidney dysfunction:
  - Phos retention = Reduced kidney production of calcitriol = hyperparathyroidism. = high phos, low calcium, high PTH
- Other causes: Low phosphate, high calcium with high PTH



Hyperparathyroidism

- Secondary: Adaptive process – reduced kidney function, impaired Phosphate excretion. Kidney cant convert Vit D from sun to usable form, to inhibit PTH secretion.
- Tertiary: Severe hyperparathyroidism secondary to renal failure – required surgery.
- Primary: Disorder of calcium, phos and bone metabolism due to increased secretion of PTH = Increased calcium low phos high PTH.



Impression

- Over the counter Calcium/magnesium supplements
  - Nil
  - No dietary calcium
- Primary Hyperparathyroidism - Parathyroid adenoma.

- Plan:
  - GN screen – ensure no other reason for decline
  - Urine calcium/creatinine ratio.
  - Refer for parathyroid study scan.
  - Refer to endocrinology

Midlands Health Pathway

- Referral non acute endocrinology assessment
  - Aged younger than 50 years - no
  - Renal calculi – no
  - Significant osteoporosis - ?
  - Renal impairment eGFR less than 60 - yes
  - Corrected Cal > 2.85 - Yes

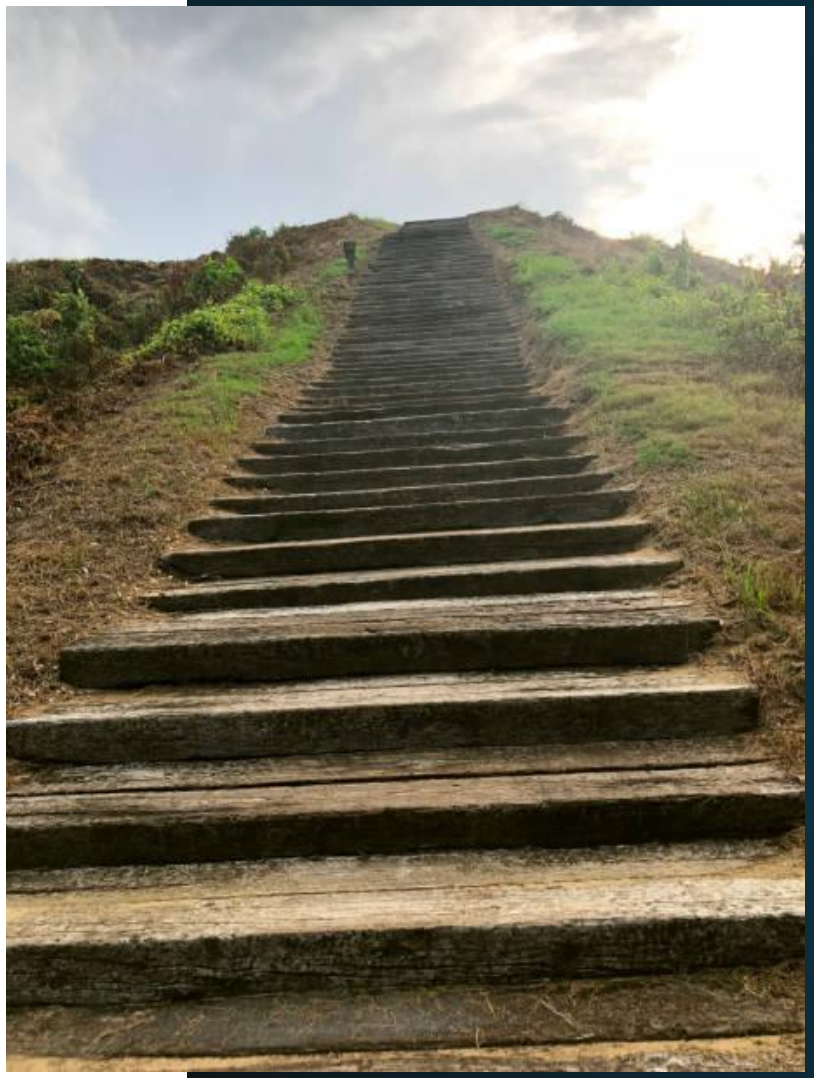
Cher’s pathway

- Referred to endocrine and a scan in March 2023
  - PTH 46 and Calcium > 3
  - Started cinacalcet – low dose
  - Mammogram – NAD.
- Scanned – Aug 2023
  - R) retro thyroid parathyroid adenoma localised 12mm
  - Interposed between the posteromedial R) thyroid lobe adjacent to oesophagus
  - Referral: Parathyroidectomy



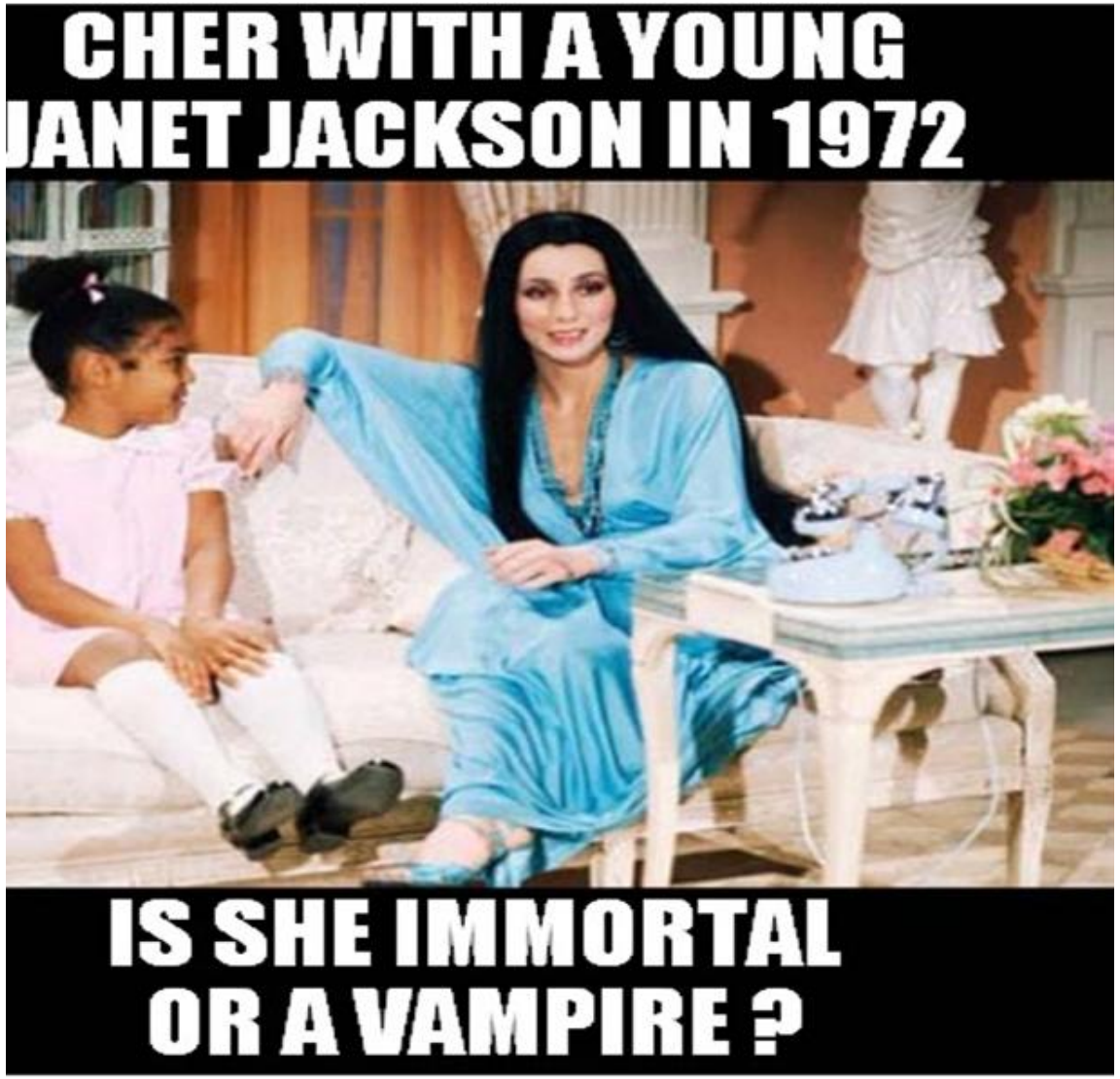
Cher’s pathway

- October 2023 – still not seen by endo or surgeons
  - Diarrhoea vomiting and loss of weight
  - PTH 70.6, Corr Cal 3.37 eGFR 34ml/min
- Nov 2023
  - Cough/reflux worse
- Jan 2024 – Increased cinacalcet, 60mg daily
  - eGFR 26ml/min
  - Unable to tolerate cinacalcet.
  - Adverse effects carry on.



Cher’s pathway

- February -
  - Calcium was increasing and kidney function dropping.
  - No choice – Referral to private
  - Bone density – low bone mass
- March – seen by surgeon – 7 months from first referral.
- April – Had Parathyroidectomy. – Private pathway 2 months. – Operation was done in Public.



Parathyroidectomy Complications

- Strap muscle firmly adhered to the thyroid – tear if mobilised.
- “Found ourselves inside the oesophagus which was situated medial to the thyroid itself. Two ENT surgeons were called in”
- Extremely difficult operation with extensive adhesions in the area. There was a pouch of the oesophagus extending between the trachea and the thyroid.

Parathyroidectomy Complications

- Abnormal anatomy with a large oesophageal pouch situated medial to the thyroid and lateral to the trachea.
- An NG tube was passed, found itself through a hole in the oesophagus
- An attempt of repairing the torn oesophagus was performed with difficulty
- Transferred to Wellington Hospital

Renal clinic Jan 2024

- Kidney function stable 50ml/min
- Normal calcium/phos and PTH.
- No cough anymore
- Reflux symptoms normal.
- Discharged from renal

Gave me permission to do a case study.



Further complication

- April 2025 – Patient felt a lump – Left Breast

- Invasive cancer of the left breast, stage 1

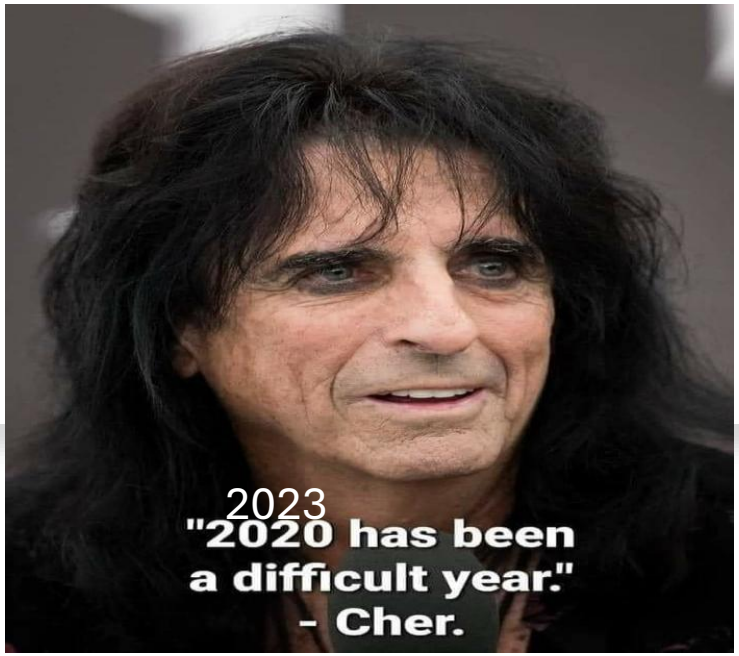
- Shared risk factors may explain part of the relationship:
  - older age
  - female sex/postmenopausal status
  - prior radiation exposure
  - possible genetic predisposition

Further complication

- A 2024 systematic review/meta-analysis found: overall malignancy prevalence in PHPT patients was ~19%breast cancer was among the most common malignancies identified pooled overall cancer risk ratio was 1.28.

- A large Swedish registry study of 9,835 women who underwent surgery for PHPT found 331 breast cancers versus 260 expected cases, giving a standardized incidence ratio (SIR) of 1.27 (95% CI 1.14–1.41). This suggests about a 27% increased incidence of breast cancer compared with the general population

Conclusion



- Unusual Primary hyperparathyroidism case.
- She survived
- Healthcare in New Zealand is geared for the rich
- 19-27% Cancer risk.

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