

Please read this bit first

The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a "Journal Club" activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out "correct" answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT00025**.

Each attendee should claim **THREE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

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Hypercalcaemia

A 56-year-old man, with a six-month history of an unproductive cough, presented at hospital with weight loss and haemoptysis. He had been a heavy cigarette smoker since the age of 18 years. Radiological examination and a bronchial biopsy revealed a poorly differentiated adenocarcinoma of the lung. His plasma analyte values were as follows;

Ca	3.90 mmol/L	(2.15-2.55)
PO ₄	0.52 mmol/L	(0.65-1.25)
Alb	36 g/L	(30-50)
ALP	240 U/L	(30-120)
Urea	5.5 mmol/L	(3.0-8.0)
PTH	5.1 U/L	(2-6)

Comment:

About 20% of patients with malignancy present at some time with hypercalcaemia, and the possible mechanisms involved include:

1. erosion of bone by secondaries
2. ectopic production of PTH
3. production of a PTH-like substance by the tumour
4. prostaglandin production by the tumour
5. production of an osteoclastic activating factor by the tumour
6. coincidence of hyperparathyroidism

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N.B. The biochemical features of this patient are similar to those found in hyperparathyroidism. This suggests the possibility of the ectopic PTH syndrome or the elaboration of a PTH-like substance by the tumour.

CPD Questions:

1. Find a report from your lab with high plasma calcium. Do the other results look 'similar' to that in this case study? If not, why not?
2. Why is this patient's ALP elevated?

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