

Raised Calcium & PTH, Not Always Primary Hyperparathyroidism

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Introduction

Parathyroid carcinoma is a rare endocrine malignancy with clinical symptoms and laboratory findings similar to those in parathyroid adenoma. We present a case of hypercalcaemia with raised PTH, diagnosed as primary hyperparathyroidism and parathyroidectomy done for presumed parathyroid adenoma. The histology of resected gland confirmed the lesion as Parathyroid Adenocarcinoma.

Case Summary

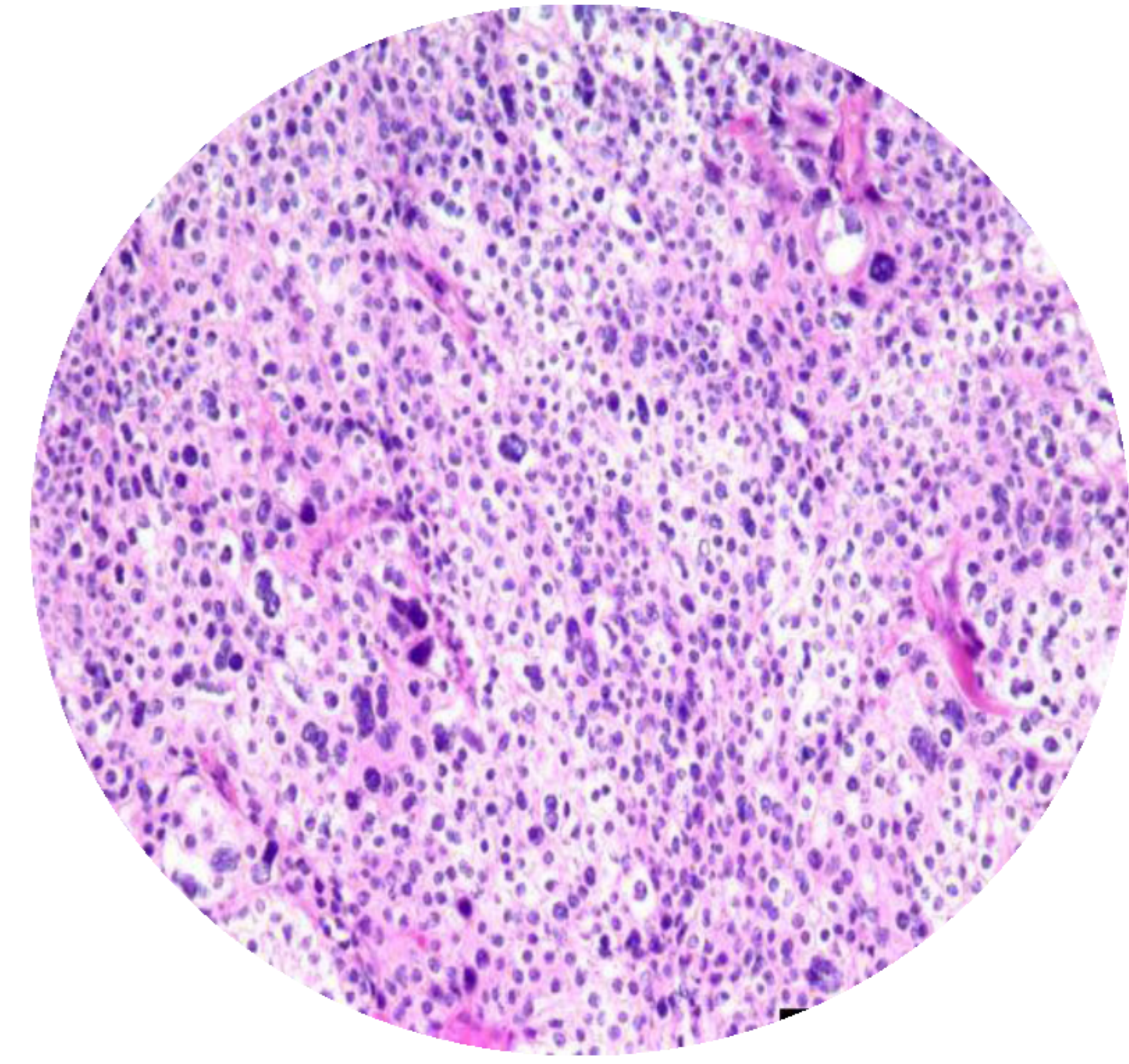
A 50 years old gentleman underwent cardiac surgery complicated by postoperative arrhythmias and ischaemic stroke. He was found to have raised calcium of 2.9 mmol/l (2.2 – 2.6) with raised PTH at 34.2 pmol/l (1.6 – 6.9) which increased to 41.2pmol/L a few days later. He was referred for investigations and management of presumed primary hyperparathyroidism. An ultrasound scan of the neck showed 1.5 cm nodule posterior to left thyroid lobe and Sestamibi scan showed increased tracer uptake on the left side, consistent with a parathyroid lesion. During the course of investigations, calcium increased to 3.4 mmol/L and the patient required hospital admission for acute management of hypercalcaemia.

In view of his cardiac history and severe hypercalcaemia, he underwent left parathyroidectomy for presumed parathyroid adenoma but histology of the excised gland showed features consistent with Parathyroid Adenocarcinoma. The CT scan of chest and SPECT CT scan did not show local or distant metastases. Repeat surgery was undertaken for left hemithyroidectomy which showed no local spread of carcinoma. The calcium and PTH levels normalized after the surgery. Six months later PTH levels increased again up to 11.4pmol/L but this was found to be associated with hypocalcaemia and Vitamin D deficiency. This improved with Vitamin D replacement. He has been having regular follow up and monitoring with calcium and PTH levels. DEXA bone scan shows improvement of bone mineral density. There has been no recurrence for six years after the surgery.

Investigations

Calcium (2.2 – 2.6 mmol/L)	PTH (1.6 – 6.9 pmol/L)
2.9	34.2
3.4	41.2
2.16	11.4
2.26	4.2
2.35	2.4
2.47	3.0

Results



Histology showing trabeculae of cells with a paucity of adipose tissue and moderate interlobular fibrosis, features suggestive of parathyroid carcinoma

Conclusions

Parathyroid carcinoma is a rare malignancy with incidence of <1% among all hyperparathyroidism cases. It is mostly diagnosed on histological examination of the excised parathyroid gland. Raised PTH levels with hypercalcaemia is usually suggestive of primary hyperparathyroidism but severe hypercalcaemia with markedly raised PTH levels should raise a suspicion of Parathyroid Carcinoma.

References

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