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A RARE CASE OF COMBINED HYPERPARATHYROIDISM AND THYMOMA

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CASE REPORT

A 67-year-old lady, previously fit and well, presented with chest pain. She denied gastrointestinal or urological symptoms. There was no history of depression, psychosis, previous hip fracture or steroid use. She had regular menstrual cycles until hysterectomy at 50 years of age. She doesn't smoke or drink alcohol. Her mother and father had oesophageal and lung cancer respectively with no family history of hypercalcemia.

On examination, she was normotensive with body mass index of 23.3kg/m^2. There was no signs or symptoms of myasthenia gravis. Blood investigations revealed incidental hypercalcemia with elevated parathyroid hormone (PTH) levels. Routine bloods including full blood count, TSH, renal function were normal with estimated glomerular filtration rate of 88ml/min/1.73 m^2. Coeliac and myeloma screen were negative and Vitamin D level was 66.8nmol/L. DEXA scan confirmed severe osteoporosis (T-score of -4.5 in spine, -2.9 in neck of femur) and she was started on weekly alendronate. Chest X-ray showed mediastinal widening; CT chest revealed a cystic mediastinal mass. Parathyroid SPECT CT showed MIBI avid lesion in anterior mediastinum but no discernible parathyroid adenoma in the neck. Video-assisted thoracoscopic surgery (VATS) biopsy of mediastinal mass was inconclusive.

Her mediastinal mass was subsequently removed at thoracotomy. Excision biopsy confirmed evidence of thymoma (Type B1). On discussion with the pathologist, there was no evidence of parathyroid tissue, although given the big sample size there could have been some unsliced portions. In the interim, she was treated for breast carcinoma with wide local excision and radiotherapy. Her pre and post-operative corrected serum calcium and PTH values are shown in table below.

	Pre-operative results							Post-operative results		
	June 2016	August	Sept	October	November	December	January 2017	February	March	Sept
Adjusted Calcium	2.8	2.9	2.9	2.7	2.9	2.8	3.0	2.47	2.58	2.51
PTH (1.5 - 7.6pmol/L)	21.7	14.1	17.2	22	27.7	18.9	-	4.9	4.6	5.2

DISCUSSION

Even though the inferior parathyroid glands and thymus are derived from third branchial pouch, their concurrent pathology is rare. [1] As thymus and parathyroid glands descend into their final anatomical location, the latter can move variably into the superior mediastinum along the thyrothymic ligament. [1] Thymus tissue is the most common site for ectopic parathyroid hormone secretion. There have been several reports of thymic tissue secreting ectopic PTH [2] but only 5 reported cases of hyperparathyroidism or parathyroid adenoma with thymoma in current literature. [1, 3]

We present a case of primary hyperparathyroidism with thymoma but without obvious parathyroid adenoma. Her calcium and PTH levels normalised immediately after resection of thymoma in keeping with ectopic production of parathyroid hormone.

CONCLUSIONS

Given the close developmental relationship of thymus and parathyroid glands, it is important to look for presence of thymic lesions when treating patients with primary hyperparathyroidism with no obvious localisation of parathyroid gland in the neck.

References

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Bone and calcium

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