Dr May Thwin

Hyperparathyroidism

What is primary hyperparathyroidism and what is the treatment for primary hyperparathyroidism?

Primary hyperparathyroidism is the condition of pathologically elevated parathyroid hormone, most often due to an underlying parathyroid adenoma. It is a common cause of hypercalcaemia. It can present either incidentally, insidiously with vague symptoms, with sequelae of hypercalcaemia including renal calculi or osteoporotic fractures. In the case of hyperparathyroidism caused by malignancy (less than 1% of cases of primary hyperparathyroidism) it may present more dramatically as a hypercalcaemic crisis requiring management in a high dependency setting. Treatment may be non-surgical or surgical, though the latter is the only approach offering long-term cure. Traditionally surgical treatment involved four-gland exploration, though the advent of better localization technology has resulted in a refinement of minimally invasive surgical technique.

What is persistent/recurrent hyperparathyroidism and why does it occur?

Stable eucalcaemia persisting beyond six months is regarded as the definition of cure or successful treatment. Persistent and recurrent hyperparathyroidism represents a scenario whereupon serum levels of parathyroid hormone and calcium remain elevated post- (intended) definitive surgical treatment. They are differentiated by timeframe. Whilst persistent hyperparathyroidism is represented by elevated levels within the first six months of definitive treatment, recurrent hyperparathyroidism is defined as elevated levels which return beyond six months of initial cure, usually within twelve months.

Generally speaking, persistent disease is usually due to incomplete excision overactive parathyroid tissue, or missing the diseased gland/s at first operation, whereas recurrent disease is usually a gland that has not been resected demonstrating its potential for overactivity. Incidence of persistent disease is thought to be higher than that of disease recurrence.

There may be a number of causes and contributing factors as to why a patient may suffer from recurrent or persistent disease. These may include multi-gland disease (including four-gland hyperplasia or multiple adenomas), ectopic gland location (e.g. mediastinal, retro-oesophageal) or supernumerary glands. Whilst the majority of patients have the textbook number of four glands, a small minority will have greater or fewer than four. Reasons for an persistent/recurrent disease can also include technical or operator failure to recognise the gland, though this is not always the case, as cases of persistent and recurrent disease can be observed even in the most experienced hands. Recurrent or persistent disease may be diagnosed either through symptoms similar to those experienced before surgical treatment, or it may be found on follow-up or routine blood tests.

What should be done for a patient with persistent/recurrent hyperparathyroidism?

If persistent or recurrent disease is suspected, this should be verified by correlating elevated PTH and calcium and excluding other potential causes for either, including hypercalcaemia of malignancy, or familial hypocalciuric hypercalcaemia, though one would hope these had been eliminated as possibilities prior to embarking on initial surgical cure. As long as there are no contraindications and the patient meets criteria for surgery, re-operative surgery is regarded as frontline treatment for the highest chance of cure. Secondary surgery can be complex, with a higher rate of complications. Surgical success at re-operation is impacted greatly by ability to appropriately localise the gland/s in question, and modality and quality of imaging is of great importance. This can include any combination of US, Sestamibi scintigraphy, single-photon emission computed tomography (SPECT) +/- CT, 4D-CT, MRI and PET. Invasive techniques such as venous sampling may also be utilised to better localise the culprit glands.

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Dr May Thwin is an Australian raised and trained General Surgeon with interests in Breast & Endocrine Surgery and Surgical Oncology/Melanoma.

INTERESTS
Benign & malignant thyroid, parathyroid, adrenal; benign & malignant breast disease; melanoma and skin cancer

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