

TERTIARY HYPERPARATHYROIDISM

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- Tertiary hyperparathyroidism is a persistent autonomous hypercalcaemic hyperparathyroidism occurring after kidney transplantation. A number of proposed factors may prevent involution of the hyperplastic parathyroid glands following resolution of the underlying renal impairment. These include impaired graft function, non-suppressible PTH secretion, slow involution of enlarged glands or insufficient calcitriol conversion by the transplanted kidney. The biochemical diagnosis is confirmed by an elevated total or ionised calcium, with an associated elevated or unsuppressed PTH and a reduced phosphate occurring at least 1 year post renal transplantation. Differentiation from PHPT can be difficult. Fewer than 1% of patients with tertiary hyperparathyroidism will require surgical intervention (Table 56.5). The only new evidence for intervention is the presence of nodular hyperplasia of the glands themselves. Traditionally, localisation studies or imaging of the neck was not indicated in tertiary hyperparathyroidism. However, increasing knowledge of the clonal nature of gland hyperplasia suggests that where there is a nodule within the parathyroid with a volume of tissue greater than 500 mm³, then resolution of electrolyte abnormalities is unlikely. The use of calcimimetics in tertiary hyperparathyroidism remains controversial and has not been approved for this indication. However, isolated reports have documented control of hypercalcaemia with minimal side effects in individual patients. Surgical intervention remains the definitive management strategy. Subtotal parathyroidectomy or total

TABLE 56.5 Indications for surgical intervention in tertiary hyperparathyroidism. Subacute severe hypercalcaemia (>3 mmol/L) Impaired graft function Nodular hyperplasia of the parathyroid gland(s) Progressive symptoms (>2 years following transplantation) Worsening bone disease (pain, fracture, bone loss) Renal stones/nephrocalcinosis Soft-tissue or vascular calcifications

surgical options. The majority of endocrine surgeons will opt for a subtotal parathyroidectomy in this setting, leaving a gland approximately four times normal in volume to minimise postoperative complications. Total parathyroidectomy without an autograft is not a treatment option because of the postoperative and persistent difficulties in managing the associated hypocalcaemia. Summary box 56.3 Tertiary hyperparathyroidism

Persistent autonomous hypercalcaemic hyperparathyroidism occurring after kidney transplantation
Diagnosis is made by demonstrating an elevated total or ionised calcium with an associated

elevated or unsuppressed PTH and a reduced phosphate occurring at least 1 year post renal transplantation. Localisation studies are not required but a focused neck ultrasonography may confirm the presence of nodular enlargement. Surgical intervention remains the mainstay of treatment and involves a subtotal parathyroidectomy.

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