To autotransplant simultaneously or not -- can intraoperative parathyroid hormone monitoring reliably predict early postoperative parathyroid hormone levels after total parathyroidectomy for hyperplasia?

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BACKGROUND: Intraoperative parathyroid hormone (IOPTH) monitoring is well-established in operation for primary hyperparathyroidism (HPT). In diseases where total parathyroidectomy (tPx) is a treatment option its reliability to predict postoperative residual parathyroid hormone (PTH) remains in question. METHODS: Thirty-eight consecutive patients with tPx due to secondary autonomous renal (26 patients), familial (8 patients), or lithium-induced (4 patients) HPT were analyzed retrospectively for the relationship between IOPTH and postoperative PTH. Three concepts were tested to predict a postoperative PTH below the normal range: a mandatory intraoperative decline of PTH less than 50% and 90% of the baseline value as well as an intraoperative decline below a threshold of 100 pg/ml 10 minutes after tPx. RESULTS: There was no significant correlation between IOPTH decline and postoperative PTH (R = .265; P = .108). In patients with a 4-gland resection (n = 34) the positive predictive value was 62.5% and the sensitivity was 90.9% for the '50% concept.' The corresponding values were 68.8% and 50.0% for the '90% concept,' and 81.8% and 81.8% for the '100 pg/ml concept.' CONCLUSIONS: The decision for simultaneous autotransplantation after tPx can not be based on IOPTH monitoring, because the reliability in prediction of early postoperative PTH status is insufficient.

type journal paper/review (English)
date of publishing 7-2007
journal title Surgery (142/1)
ISSN print 0039-6060
pages 47-56