

The Tubercle of Zuckerkandl is Associated with Increased Rates of Transient Postoperative Hypocalcemia and Recurrent Laryngeal Nerve Palsy After Total Thyroidectomy

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Abstract

The current concept of complete resection of thyroid parenchyma shifted the practice from subtotal thyroidectomy to total thyroidectomy for a wide range of benign and malignant thyroid affliction and brought the tubercle of Zuckerkandl once again into attention. This embryological remnant has been shown to have a constant relationship with the recurrent laryngeal nerve and the superior parathyroid gland and may be used as a landmark for safe dissection. In order to assess if the presence of the tubercle of Zuckerkandl has an impact on the most important complications of thyroid surgery, we have prospectively studied 128 patients diagnosed with nodular goiter who underwent total thyroidectomy. Grade 0 or the absence of the tubercle of Zuckerkandl, according to Pellizo et al, was noted in 42 cases (32.8%). During surgery, we identified 38 grade 1 tubercles (29.7%), 31 grade 2 tubercles (24.2%) and 16 grade 3 tubercles (12.5%). Out of 11 bilateral tubercles, 4 were measured as grade 3. Of all 47 patients with grade 2 and 3 tubercles, 18 (38.3%) developed transient postoperative hypocalcemia ($p < 0.0001$, $r = 0.47$) and 10 (21.3%) transient postoperative nerve palsy ($p = 0.004$, $r = 0.25$). All patients fully recovered during follow-up. The tubercle of Zuckerkandl, when present and of significant macroscopic size is associated with increased rates of transient postoperative hypocalcemia and recurrent laryngeal nerve palsy.

Key words: tubercle of Zuckerkandl, total thyroidectomy, postoperative hypocalcemia, recurrent laryngeal nerve palsy