



## Patients Undergoing a Surgical Lobectomy Require a Complete Preoperative Thyroid Evaluation and Long-Term Follow-up to Detect Postoperative Hypothyroidism

### ANALYSIS AND COMMENTARY ● ● ● ● ●

Medical indications for lobectomy or hemithyroidectomy are the presence of a single thyroid nodule or, rarely, unilateral goiter. The nodule in the vast majority of cases is benign or has suspicious or indeterminate characteristics on fine-needle aspiration cytology or is a single toxic adenoma (2). Long-term follow-up of patients after the surgical procedure is not clearly defined in the medical literature, unless it is a malignant lesion. The chances of developing hypothyroidism in such cases is not clearly defined. The authors stated that “apart from the need for regular doctor visits and blood check-ups, long-term thyroid hormone therapy may be associated with accelerated loss of bone mineral density, atrial fibrillation, changes in left ventricular function, and impairment in psychological well-being.” In their systematic review of the literature, studies assessing thyroid function after hemithyroidectomy in euthyroid populations of any age were eligible for the meta-analysis. Postsurgical hypothyroidism included cases of increased serum TSH levels (subclinical and clinical hypothyroidism) and those of patients on thyroid-replacement therapy. The reported incidence of postsurgical hypothyroidism ranged from 0 to 43%. The pooled risk of hypothyroidism after hemithyroidectomy was 22%. A clear biochemical distinction between clinical and subclinical hypothyroidism was reported in only four studies (467 patients); the overall risk was 12% (95% CI, 5 to 25) for subclinical hypothyroidism and 4% (95% CI, 2 to 8) for clinical hypothyroidism. It was usually detected within the first 6 months after surgery. Older age was reported as a risk factor for the development of hypothyroidism in only four studies. Higher preoperative TSH level (within the normal range) was a significant risk factor in 13 studies. The presence of anti-TPO antibodies was reported as a risk factor for hypothyroidism in six studies (791 patients); there was a higher risk (48%) in patients with anti-TPO antibodies than in those without antibodies (19%, P

= 0.001). The degree of inflammation in the resected lobe was reported in four studies (459 patients); the risk for hypothyroidism was higher (49%) in patients with a high degree of inflammation than in patients with no inflammation or a low degree of inflammation (10%; P = 0.006). The authors recognized the limitations of their study, among them the inability to assess what proportion of the reported hypothyroidism was transient or permanent, the definition of hypothyroidism among the different studies, the time of measuring TSH levels in patients in whom hypothyroidism develops, and the frequency of patient follow-up. The number and timing of laboratory measurements varied from only one TSH measurement 4 to 8 weeks after surgery to regular thyroid hormone measurements once, twice, or three times a month for years after the intervention. One study reported that in untreated patients with hypothyroidism, TSH levels progressively decreased during the first 20 months after surgery (3). Another study reported that in 33% of patients with hypothyroidism, TSH levels normalized within 28 months after the intervention (4). One study showed a risk of 17% for early postoperative hypothyroidism and 8% for persistent hypothyroidism, showing that, at least in some patients, hypothyroidism can be a transient phenomenon (5). From the results of the meta-analysis, the recommendation for clinicians caring for patients before and after lobectomy could be summarized as follows: (1) determine serum TSH and anti-TPO antibodies prior to surgery; (2) recognize that age, serum TSH in the upper limits of the reference range and elevated anti-TPO antibodies are risk factors for the development of hypothyroidism; (3) review the surgical pathology report, since the presence of chronic thyroiditis is an additional risk; (4) measure serum TSH levels on a regular basis in patients at risk, keeping in mind that in some patients serum TSH elevations are transient; and (5) realize that hypothyroidism, both clinical and subclinical, may develop years after the surgical procedure.

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