

What Should the Correct Extent of Thyroidectomy be in a Developing Area Where Goiter is an Endemic Problem?

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Editorial

Extent of thyroidectomy has always been a highly debated topic among thyroid surgeons, regardless of whether it is performed for a benign or malignant thyroid condition. Although lobectomy or subtotal thyroidectomy have long been favored because they have always been perceived as a procedure resulting in fewer recurrent laryngeal nerve (RLN) injuries, hypocalcemia and hemorrhage/hematoma [1] than total thyroidectomy, over the last 10-15 years, many surgeons have preferred doing a total thyroidectomy when the disease has involved both thyroid lobes (i.e. bilateral multinodular goiter) [2]. The rationale behind this change is the fact that with improving surgical techniques and experience, total thyroidectomy can be performed as safely as lobectomy or subtotal thyroidectomy [3]. Furthermore, total thyroidectomy virtually eliminates the future risk of remnant recurrence and risky reoperations [4]. In a large retrospective analysis of over 2000 patients who either had a total thyroidectomy or bilateral subtotal thyroidectomy, the authors found the latter procedure resulted in a significantly higher rate of completion thyroidectomy while the rate of permanent complications was not significantly different between the two procedures [5]. Based on these findings, they recommended total thyroidectomy for bilateral multinodular goiter to prevent recurrence and to eliminate the necessity for early completion thyroidectomy in case of a final diagnosis of thyroid carcinoma.

However, in the recent few years, this practice of doing routine total thyroidectomy has been increasingly questioned. In a large population study using the National Inpatient Sample from 2003 to 2009, among all adult patients who underwent a total thyroidectomy or lobectomy for benign or malignant conditions, the authors found there was a significantly increased risk of complications after total thyroidectomy compared to lobectomy (20.4 vs. 10.8%; $p < 0.0001$) [6]. This increased risk was also observed among the more-experienced, high-volume surgeons (i.e. surgeons performing >99 thyroid operations per year). Given that the majority of thyroid operations in the United States are now being done by lower volume surgeons (i.e. <10 thyroid operations per year), this implied the actual (or unreported) risks of RLN injuries and hypocalcemia might actually be significantly higher on the whole than many published single institution series [7]. This shift towards thyroid conservatism has also partly reflected in the most updated American Thyroid Association guidelines on thyroid nodules and differentiated thyroid cancer [8] where even for patients with thyroid cancer >1cm and <4 cm without high-risk factors, lobectomy is now a recommended alternative to total thyroidectomy. Therefore, in recent years, the pendulum have swung back in favor of doing a lesser extent procedure initially over a total thyroidectomy.

In the current issue of *Thyroid Disorder Therapy*, Burali et al. indirectly addressed this issue by reviewing their operative experience

in North Uganda [9]. Over a period of 3 and half years, as part of the mission supported by “Centri Salute Globale”, the authors performed over 200 thyroid operations and of these, 137 were eventually analyzed. With the lack of proper health support and medical personnel, their reported surgical results were truly impressive. There were only 5 (3.6%) complications directly from the surgery itself and there were no perioperative deaths in the period. The authors appropriately discussed the rationale behind doing a lesser procedure (i.e. lobectomy or subtotal thyroidectomy) over total thyroidectomy in North Uganda and their arguments would seem well justified and appropriate. The first argument relates to the enormous risk of hypothyroidism if a total thyroidectomy was done instead of a lesser procedure. Given the poor understanding of thyroxine replacement after a total thyroidectomy and the difficulty in accessing affordable thyroxine in North Uganda, the choice of a subtotal thyroidectomy or a lobectomy was preferred. Although some patients may still need small amount of thyroxine after a subtotal thyroidectomy or even a lobectomy, the effect of hypothyroidism is certainly less life-threatening than someone who has undergone a total thyroidectomy [10]. The second issue relates to risk of postoperative hypocalcemia. None of their patients experienced symptomatic hypocalcemia as a result of their surgery and this was partly due to their preference towards a lesser procedure over a total thyroidectomy. Therefore, there generally should not be one correct extent of thyroidectomy for benign multinodular goiter (or a “one fits all” approach) but rather, thyroid surgeons should adapt their surgical approach depending on a multitude of factors including patient preference, risks of complications and cultural and socio-economic factors.

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