

Peer Review File

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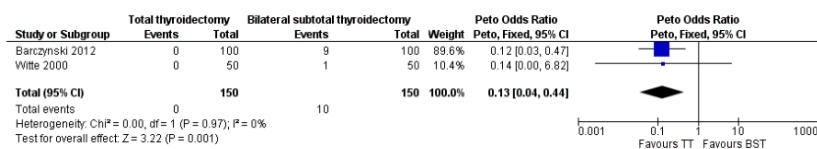
Reviewer A

Comment 1: Limited number of enrolled studies were the major drawback of this meta-analysis. Figure 3. indicated that the data for recurrence of hyperthyroidism was from only one study of 205 patients.

Reply 1: We are so sorry that we didn't find more original studies to analyze the recurrence of hyperthyroidism after the two surgical procedures. And it may be because the two surgical procedures have removed almost all visible thyroid tissue, the recurrence rate of postoperative hyperthyroidism is very low, four of our five original studies did not observe postoperative hyperthyroidism (Figure 3), the sole study (Elisabeth Maurer et al.2019) only observed 1 case of recurrent hyperthyroidism in 205 patients.

Similarly, a meta-analysis (Liu et al.2015) published in Cochrane Library analyzed total thyroidectomy (TT) versus subtotal thyroidectomy (ST) for Graves' disease. Their original research was also limited (n=5), and the comparison of postoperative hyperthyroidism was from two studies of 300 patients as shown below. NT is the least used procedure between the three surgical procedures, and the corresponding original research is even less. So, we assume that the original articles on this topic were really rare. Raising investigators' interest and promote more original studies on the surgical approach of Graves' disease are also our expectation. We thought that our work has certain values, it summarizes the existing studies and may have more potential value in the future. We are sorry for our limited studies again.

Figure 5. Forest plot of comparison: I Total thyroidectomy versus bilateral subtotal thyroidectomy, outcome: I.1 Recurrent hyperthyroidism.TT: total thyroidectomy, BST: bilateral subtotal thyroidectomy



Changes in the text: None.

Comment 2: English proofreading may be helpful.

Reply 2: Thank you for your valuable comment. On the basis of our own proofreading, we also choose the AME editing service from AME publishing company to help us

polish the language.

Reviewer B

Comment 1: In the discussion, the authors allude to the possible difficulty in fashioning a <1gm remnant in NT. The authors however did not mention how they determined that the methods in the 4 additional papers that were reviewed controlled for consistency in the amount of TT thyroid remnant.

Reply 1: We agree with this comment. We did not really mention the methods in the other 4 papers. Their methods were as follows: The size of the thyroid remnant was measured during the operation with a ruler in the study by Michael et al, the weight of the remnant was estimated from the calculated volume (1 mL ~1 gm as determined with the resected thyroid tissue specimen). In the study by Witte et al, the actual postoperative remnant was measured by ultrasonography in those patients 3 to 6 months postoperatively. NT was defined as a thyroidectomy with 1g of residual thyroid tissue in the study by Scott M et al, but they did not mention how to measure the amount of the remaining thyroid. And the other study (Yamanouchi et al.) described the NT group included patients who underwent near-total thyroidectomy with less than two grams of remaining tissue, but they also didn't mention their measuring method.

Changes in the text: None.

Comment 2: The studies by Witte et al left a remnant between 1-2gm and the study by Yamanouchi et al left a thyroid remnant <2gm. The authors define near-total as leaving a remnant of ≤ 1 gm and subtotal thyroidectomy (ST) with remnant between 2-4gm. Why was the decision made to include this study in the analysis? Including these studies also functionally includes subtotal thyroidectomy with small remnants.

Reply 2: Thank you for your comment. Actually, we defined near total thyroidectomy (NT) with remnant ≤ 1 g on each side (page 2, line 21) (Elisabeth Maurer et al.2019), it means the total remnant is ≤ 2 gm. So, we included the two studies in our analysis.

Changes in the text: None.

Comment 3: Why do the authors think is the reason for higher rates of permanent hypoparathyroidism in the patients with TT? If the papers that possibly included ST (Witte and Yamanouchi) were not included, what the difference in permanent hypoparathyroidism still significant?

Reply 3: Thank you for this comment. We think that the high incidence of permanent hypoparathyroidism after total thyroidectomy (TT) may be because the operation is more likely to damage the parathyroid glands compared to NT. NT retains less than 1g of thyroid tissue on each side, as it mentioned in the study by Maurer et al, their remnant

was left at Berry's superior suspensory ligament, a high-risk and dangerous area because the recurrent laryngeal nerve parathyroid glands are prone to damage during surgery. So, the overall parathyroid gland damage is slightly less, and the corresponding incidence of hypoparathyroidism is also lower. In addition, the prevalence of postoperative hypoparathyroidism might be lower because of the reduced risk of intraoperative devascularization of the upper parathyroid glands. And we have modified our text according to the Reviewer's comment (see Page10, line185-192).

Special thanks to you for your good comments.

Changes in the text: Page12-13/ Line281-290.