

Peer Review File

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Reviewer A

This is a single-institution retrospective analysis from China of patients undergoing planned hemithyroidectomy and prophylactic central neck dissection for suspected unifocal papillary thyroid cancer, with the aim of describing and studying the authors' practice of using intraoperative frozen section to determine whether patients undergo immediate total thyroidectomy. Total thyroidectomy was performed based on certain situations, such as at least 5 metastatic lymph nodes, extrathyroidal extension, and multifocality. They compared clinical/pathological characteristics between those who had HT versus those who ultimately underwent TT. The primary findings were that those who underwent TT were older, had larger tumor sizes, had a higher rate of certain medical comorbidities, and a higher rate of multifocality/E TE/metastatic LNs.

This is largely a descriptive study of their institutional practice of using intraoperative frozen section, as most of the comparative analyses here are limited by:

1) lack of a multivariable comparison that controls for all other variables to determine what are actually independently associated factors.

Reply 1: The aim of our study was to investigate the impact of intraoperative frozen section in surgery determining rather than other risk factors of total thyroidectomy. However, we still made a multivariable comparison controlled for other variables which had been shown in Table 3 (see Page 6, line 3-6; Page 7, line 1-2). And we have modified the Table 2 to avoid ambiguity.

2) findings that are either expected based on study design (e.g. if one does a TT based on intraoperative frozen section results showing more lymph nodes, then the comparison between HT and TT will obviously show more lymph nodes in the TT group) or known more generally in the literature.

Reply 2: The study aims to determine the effectiveness of this strategy in minimizing the probability of a second open surgery. Our analysis revealed that some patients who underwent HT required for TT according to their postoperative PR result. The analysis focused on surgical outcomes, and oncological outcomes such as LN, as mentioned by your expert, were not the expected target of this study.

3) lack of operative or oncological outcomes data - e.g. we know that microscopic E TE and multifocality are not associated with worse outcomes, and we all know about the controversies surrounding the purpose and efficacy of prophylactic central neck dissection even if PTC generally has a very high rate of microscopic nodal metastases.

Reply 3: We added the surgical procedure outcomes of all patient according to our strategy. (see Page 5, line 34-39) The data showed that 72 patients were able to

avoid a possible secondary surgery, demonstrating the benefits of this tactic. The oncological finding of particular interest to us was the pathology of the contralateral lobe, as shown in Table 5. This helped us to understand the necessity of this strategy.

Reviewer B

Thanks for the good work that was carried out looking at PTC and value of Intraoperative Frozen section on plan of surgery. although a retrospective study but the sample size is reasonable.

Looking at this paper the main value of IFS is for extrathyroidal extension and or multifocal carcinoma rather than its value in identify number of LN metastasis, as it is written among the 72 cases who had TT, in 68 of these cases only 2 cases had more than 5 lymph node met? is this correct.

Reply 1: We added the surgical procedure outcomes in Figure 1. (see Page 5, line 34-39) Among the 72 cases who had TT, 4 cases had >5 lymph node metastasis and 68 cases had ≤5 lymph node metastasis

One could argue that potentially other risk factors such as higher age group, BMI, higher lipid level and hypertension with a good USS findings of the size of the tumour would reduce missing cases to a great deal without IFS.

Overall good extensive work.