Peer Review File

Reviewer A

The authors retrospectively reviewed the surgical outcomes of a consecutive series of 317 patients who underwent robotic thyroidectomy via the bilateral axillo-breast approach (BABA-RT). They demonstrated the feasibility and safety of BABA-RT in treating papillary carcinoma (88.9%) including T1 (57%), T2 (5.3%) and T3 (37.7%), follicular carcinoma (0.6%), and benign nodules (10.5%) of less than 6cm. Central neck and lateral neck lymph-node dissection was also feasible by BABA-RT. The complication rate was low. They also estimated the learning curve as 49-51 cases. BMI showed no significant influence in terms of surgical time or complication rate. They concluded that the BABA-RT can be performed safely in selected patients.

These retrospective data showed that patients who underwent BABA-RT were in good hands. The data support the safety of BABA-RT in selected thyroid patients including cancer cases.

My comments are as follows:
- Patients and methods:
1. Because of the prolonged period of the retrospective review - from 2008 to 2016 - did the authors use different versions of the da Vinci robotic system? Would this affect the time, procedure, or outcomes of surgery?
Reply: As the da Vinci Xi system was released in April 2014, a different version was used. However, when the experienced surgeon moved from Si to Xi, he did not experience any difficulties, so it did not affect the operation time, procedure, and surgical outcomes. Although not in BABA, we have published a paper comparing Si and Xi in TORT, and announced that the surgical outcomes do not differ depending on the system. (1)
Changes in the text: on line 5-7, page 12

- Results:
1. On Line 9, Page 15: "The mean age was 40.0±9.7 years (range 16–63 years). The mean age of patients who underwent robotic thyroidectomy was 30–50 years." This seems a mistyping?
Reply: Thank you for your meticulous pointing out. It was deleted because it was

incorrectly written as a duplicate sentence.

Changes in the text: it was deleted

2. On Line 11, Page 15: "There were 103 (2.5%) patients aged ≥45 years." The percentage seems a mistyping?

Reply: It's entirely a mistake. As you advised, it was 32.5, but it was a typo with 2.5. I appreciate that I could correct my mistake.

Changes in the text: on line 16, page 15, corrected

3. On Line 14, Page 17: "The 51st patient who underwent thyroidectomy was the 70th to undergo the BABA-RT procedures". Do the authors mean that the 51st patient who underwent total thyroidectomy was the 70th to undergo the BABA-RT procedures?

Reply: We apologize to cause your misunderstanding. This expression emerged because the patient undergoing bilateral lobectomy was calculated by two procedures.

Changes in the text: on line 11, page 18, corrected

- Table 1:

1. In the table, the number of total thyroidectomies is 201 (63.7%), the number of lobectomies is 112 (35.6%). The number seems different from the text. Should it be the number of total thyroidectomies is 202 and the number of lobectomies is 113?

Reply: It would have been a big deal if it weren't for you. I appreciate that I was able to make up for my mistakes. It has been corrected in the right direction.

Changes in the text: Table 1, corrected

I also have a few questions:

1. The surgeon showed an excellent outcome in their series, especially the low complication rate. Could the authors describe their tips or tricks in preventing hypoparathyroidism, especially when doing a central neck lymph node dissection?

Reply: Thank you for your good words about our study results. We always look for parathyroids in the same way when performing thyroidectomy with a robot. We have been asked a lot of questions at conferences about this, and we have explained it in other papers. Although the robotic surgery approach is different, there is a detailed explanation in our existing paper and attach it as a reference.(2)

Changes in the text: none

2. Regarding the obesity patient, the author showed that there is no difference in terms of surgical time and complications between BMI<25 and BMI≥ 25. However, in the literature, multiple studies investigate the effect of obesity on open thyroidectomy, which showed an increased risk of wound complications and a longer surgical time.

This difference seems not to be evident in robotic surgery. What do they think about this difference between open and robotic surgery?

Reply: We have already conducted a study on the difference in surgical results according to BMI in a similar robotic surgery, transoral robotic thyroidectomy. And as a result, we have already announced that there is no significant difference in operation time or complications.(3) Similarly in BABA, the difference in operation time does not seem to be large if a similar tool is used in the flap making time when performing robotic surgery with ordinary anatomy. In addition, it is thought to not increase the complication rate because the visual field of view of the operative field does not change significantly.

Changes in the text: none

Reviewer B

The paper reports a significant single surgeon experience with BABA robotic thyroid surgery. Their results would support the existing literature reinforcing the feasibility and safety of this technique.

There are some points that need minor revision:

- Intro: explore cultural aspects of korean/eastern population regarding aesthetic preferences, that help to understand why remote thyroid surgery is so popular in this region. Briefly describe BABA approach history. Retroauricular/facelift approach was no mentioned among other thyroid approaches.

Reply: I don't think there is a specific cultural background, but I think that it is aesthetically reluctant because of the characteristic that scars remain well due to the nature of Asians' skin. Since we don't perform retro-auricular or facelift approach in our institution, we did not mention in this article.

Changes in the text: none

- Methods: Which robotic systems were used in this experience? How frequently? Which are the criteria to use one or another? I think that step-by-step technique description should be placed in Methods.

Reply: As the da Vinci Xi system was released in April 2014, a different version was used. We added this in the method section.Xi was used in only about 30 cases in the late period. Almost Si is the main, and in the early Xi use cases, the same method as Si was applied, so I don't think there is a need for a separate step-by-step technical explanation.

Changes in the text: page 12, line 5-7

-Results: How was the follow-up range? Minimal was 6 months? Is that enough to analyze recurrence rates? Please elaborate on the 4 local recurrences...

Reply: The median follow-up was 61 ±23 months. This is written in page 17, line 9 and is considered to be a sufficient period to analyze the recurrence rate. Following your advice, four local recurrence cases have been described in more detail.
Changes in the text: already commented, no change

-Discussion: Explore the limitations of this technique/approach... was the visualization of levels VI-VII satisfactory? Check page 23/line 6 - There is a phrase out of context. Nerve dissection and preservation technique should be placed in Methods.
Reply: i) As you said, there is a limitation that LN dissection is difficult due to the fundamental problem of robotic surgery. This is true not only for BABA, but also for other approaches. Although not BABA, we have already covered this in a paper comparing TORT and open.(4) And, looking at the paper comparing BABA and TORT, more LN could be retrieved from BABA than from TORT.(5) It can be said that LN visualization is relatively well done within BABA, and many other robotic surgery papers have similarities in common.
We use intraoperative neuromonitoring for nerve preservation. This is from line 3 on page 12. The application method is in lines 2 to 4 on page 14. (Both in method section)
Changes in the text: already commented, no change

Reply: ii) page 23/line 6: Thank you for the detailed pointing out. Actually, it is about the extra RLN branch. Although I wrote it in too much detail, it is a description of the modified procedure for special cases, so we located it in the discussion part. The main IONM procedure has already been mentioned.
Changes in the text: already commented, no change

1. Kim HK, Kim HY, Chai YJ, Dionigi G, Berber E, Tufano RP. Transoral Robotic Thyroidectomy: Comparison of Surgical Outcomes Between the da Vinci Xi and Si. Surg Laparosc Endosc Percutan Tech. 2018;28(6):404-9.
2. Kim HK, Park D, Kim HY. Robotic transoral thyroidectomy: Total thyroidectomy and ipsilateral central neck dissection with da Vinci Xi Surgical System. Head Neck. 2019;41(5):1536-40.
3. Tai DKC, Kim HY, Park D, You J, Kim HK, Russell JO, et al. Obesity May Not Affect Outcomes of Transoral Robotic Thyroidectomy: Subset Analysis of 304 Patients. Laryngoscope. 2020;130(5):1343-8.
4. You JY, Kim HY, Chai YJ, Kim HK, Anuwong A, Tufano RP, et al. Transoral Robotic Thyroidectomy Versus Conventional Open Thyroidectomy: Comparative Analysis of Surgical Outcomes in Thyroid Malignancies. J Laparoendosc Adv Surg

Tech A. 2019;29(6):796-800.

5. Kim WW, Lee J, Jung JH, Park HY, Tufano RP, Kim HY. A comparison study of the transoral and bilateral axillo-breast approaches in robotic thyroidectomy. J Surg Oncol. 2018;118(3):381-7.