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## Peer Review File

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### Reviewer A

Although less innovation, this study provides good data collection and good surgical images for managing a mega goiter in a low resource setting. I am glad to review this valuable study.

1. About the definition of mega goiter, the author mentioned the goiter with superior pole above the level of hyoid are chosen for lateral approach, which fits the title of this article. However, as mentioned in Background “A significant number (20%) of goiter patients have infraclavicular or substernal extension.” Definition for the level of lower pole, and more description about the procedure for these patients may add in Discussion.

**Line was added in selection for criteria that inferior extension is not an indication for lateral approach but surgeons assessed for infraclavicular extension at preoperative ultrasound.**

**“Infraclavicular extension of the gland did not qualify the patient for lateral approach, but was noted on preoperative ultrasound to aid in operative planning.”**

**– Added to discussion**

2. When discussing about the complications of surgery, especially the voice and swallowing. A study conducted by Ko et al. entitled “U-shaped strap muscle flap for difficult thyroid surgery.” was published in Gland Surgery 2020 Apr; 9(2): 372–379. The lower level strap muscles transection procedure is different from current study, but there are still more similarities than other studies with backdoor lateral approach.

**Thank you for pointing out this article. I made a comparison to it in the discussion as below:**

**Ko et al described a U-shaped muscular flap to aid in operative exposure that is similar to our muscular flap, but their approach does not place an emphasis on opening the investing fascia of the sternocleidomastoid and exposing the great vessels prior to dissection of the thyroid gland.**

3. In conclusion, the author mentioned “...should be a consideration in difficult

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thyroid cancer cases, especially those with bulky lateral neck lymphadenopathy and in revision surgeries.” I can understand the compromises made in treatment of disease combined with malignancy or thyroiditis in this low resource setting. However, a more detailed description about how to modify your procedures for these patients and determine the volume of thyroid tissue remnant is necessary.

**I added clarification in the operative technique that in our study these patients underwent lobectomy or Dunhill procedure and added to discussion modifications for thyroid cancer surgery as below:**

**Our technique may prove useful in difficult thyroid cancer surgeries wherein lateral exposure of the great vessels and a muscular flap can aid in safe dissection of large thyroid tumors or revision cases. Our described technique leaves a remnant thyroid tissue of the non-goiterous lobe, which would be contraindicated in advanced thyroid cancers. To modify this technique for thyroid cancer surgery, bilateral incision of investing fascia of sternocleidomastoid and exposure of bilateral great vessels is necessary. Additionally, instead of performing the Dunhill procedure, a total thyroidectomy would be performed.**

#### **Reviewer B**

It might help to define your standard approach to a large goiter, as a comparison to your standard technique and in particular where the differences lie?? And maybe articulate what each difference confers in benefit??

I really feel this needs to be teased out as strap division and great vessel identification are intraoperative tools regularly utilized by the surgeon familiar with large goiters

**Our technique incorporates both the lateral exposure similar to a neck dissection with the muscular flap, which has not been described before. I added a paragraph in discussion as below:**

**This technique differs from the traditional thyroidectomy technique in several ways. After subplatysmal flaps are raised, instead of dividing the midline raphe as would be done in the traditional approach, exposure is first gained laterally similar to a neck dissection by opening the fascia enveloping the SCM and exposing the great vessels. This allows a plane to be safely developed between the great vessels and the gland which is often abutting the medial wall of the carotid or internal**

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**jugular vein. Additionally, the inferiorly based muscular flap distinguishes this technique from the traditional thyroidectomy approach and aids in dissection of the superior pole vessels.**

The complication data shows the technique to be safe

Does this technique help in substernal disease?

**The technique is not thought to be helpful for infraclavicular extension alone and a sentence was added to discussion as below:**

**The lateral approach is not beneficial for goiters with infraclavicular extension without suprahyoid extension or large superior pole vessels.**