**Author’s response to reviews**

**Title:** Evaluation of the thyroid characteristics of patients with growth hormone-secreting adenomas

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**Author’s response to reviews:**

Dear editor,

We are grateful for the thoughtful review provided for our paper. We appreciated the opportunity to revise the manuscript as well as offer a point-by-point response to reviewers. We hope that our responses address the comments of reviewer. The revised parts to our manuscript are highlighted within the document by using “tracked changes” in MS Word. Please contact me with any questions or concerns you may have any question.

Sincerely,

Zhiyong Chen

**Reviewer reports:**
Christian Happel (Reviewer 1): Comments to the Author

1. Abstract:

Please announce NF when you use the abbreviation for the first time (line 12 on page 2). It is true that you append the abbreviations at the end of your manuscript, but I think an explanation should appear already in the abstract.

Response: We have added the definition of NF.

line 12 on page 2: non-functioning (NF)

2. In the conclusion you state that surgery significantly changed solid nodules to cystic nodules in patients with growth hormone secreting adenoma and reduces the number of heterogeneous and vascular thyroid nodules. Could you please add a short explanation of the reasons for this?

Response: We have added a short explanation in conclusion.

Conclusion:

The reason may be due to decreased growth hormone levels after pituitary growth hormone adenoma resection, resulting in decreased thyroid cell proliferation and increased apoptosis. At the same time, the blood supply will be reduced after the thyroid cells are reduced, so that the solid nodules are transformed into cystic nodules. However, this reason remains to be confirmed in further study.

3. Methods / Fine needle aspiration biopsy (FNAB):

In the first sentenced of this section you state that fine needle aspiration biopsy was performed by a practitioner on patients with "goiter" volume exceeding 1 cm³ or a node with two or more of diverse signals. Is this true or should this sentence should better be replaced by "fine needle aspiration biopsy was performed by a practitioner on patients with "nodule" volume exceeding 1 cm³ or a node with two or more of diverse signals”.

Response: We have changed to “FNAB was performed by a practitioner on patients with "nodule" volume exceeding 1 cm³ or a node with two or more of diverse signals”

4. In my opinion there is a typing error in line 28 on page 5: the word "flu" should be replaced by "flow".

Response: We have changed "flu" to "flow".
5. Results:

There is much information from line 27 on page 6 to line 3 on page 7 which is very difficult for the reader to realize. Maybe you can put this section in a table to relieve readability.

Response: We have put this section in a Table 1.

After consideration of the above mentioned minor revisions the manuscript is in my opinion appropriate for publication in BMC Endocrine Disorders.

With many regards,

Yours sincerely,

Carl Friedrich Classen (Reviewer 2):

1. The abbreviation „NF pituitary adenoma“ should be explained at first appearance.

Response: We have added the definition of NF.

line 12 on page 2: non-functioning (NF)

2. The authors do not tell whether cases of pituitary adenoma were part of a syndromous disease, like for example McCune Albright syndrome or multiple endocrine neoplasia syndrome Type 1, or others. Such conditions should be discussed in the paper.

Response: Pituitary tumors which enrolled in our study are isolated pituitary adenomas. McCune Albright syndrome and multiple endocrine neoplasia syndrome Type are multi-organ endocrine adenomas with special genetic mutations that were excluded during enrollment.

3. As the authors state, a number of laboratory examinations were performed. If they led to some more insight, they should be reported.

Response: We have added the TSH, FT3, and FT4 data in figure 5.

4. In fig. 1, the arrangement of subcategories - nodular goiter, thyroid cancer etc. - is different in the left and the right side of the graph, this should be corrected.

Response: We have corrected the arrangement of subcategories in Fig.1.
Unfortunately, the English language of the work is not perfect and requires workup by a native speaker. In particular, the terms „increased" or „decreased", when used for the comparison of two patient cohorts, are most often used incorrectly.

Response: We have checked the increased" or „decreased". Additionally, Revised manuscript was improved the article for language by Editage company (https://www.editage.cn/).