Reviewer's report

Title: Right thyroid hemiagenesis with adenoma and hyperplasia of parathyroid glands - case report

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Reviewer: Marek Ruchala

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The paper by Merima Oruci et al. is an interesting report of a rare case of thyroid hemiagenesis associated with hyperparathyroidism. In general, the case study is worth presenting, however requires minor essential revisions, according to the following points:

1. The case description proves that in a patient with thyroid hemiagenesis, despite unilaterally abnormal development of the thyroid gland, the parathyroid glands are present on the side of agenesis, what should be underlined in the conclusions.

2. Was the cytological examination (FNAB) of the thyroid lesion performed before the surgery?

3. Was the renal function evaluated in this patient?

4. All the abbreviations used in the paper should be explained on first appearance in the text.

5. I suggest to rewrite the sentence from the background section “If this anomaly is associated with other morbidity it requires surgical intervention.” - not all morbidities coexisting with hemiagenesis need to be cured surgically.

6. The Conclusion section should be rewritten and named rather “Discussion”, because it mainly discusses the literature, while conclusion section should be much shorter and present the message derived from this particular case study.

7. The sentence beginning with “Certain familial hemiagenesis cases…” suggests, that mutations of known thyroid transcription factors cause familial cases of thyroid hemiagenesis. If fact, only minority of cases of congenital hypothyroidism could be explained with such changes and it predominantly concerns cases of thyroid ectopy and agenesis, while in vast majority of patients with hemiagenesis the genetic background is unknown.

8. The section describing genetic background of hemiagenesis and hyperparathyroidism in my opinion is too long and a bit out of the scope of the paper. On the contrary, this section lacks discussion on the literature about patients with thyroid hemiagenesis and concomitant parathyroid lesions. The paper by Ruchala M et al (2011) evaluating a potential influence of disturbed thyroid development in patients with thyroid hemiagenesis on calcium-phosphate balance would be worth citing.

9. I suggest to add to the figures section pictures from ultrasound examination,
MIBI scintiscan or surgery, if available, instead of three from histopathology, which might be more interesting to the reader.

10. The manuscript needs to be revised and corrected by an English native speaker, because of some language mistakes (grammar - i.e. incorrect word order in the sentences; spelling - i.e. hyperparathyroidism, hemiagenesia, double, hipothyreosis; articles - a, the).

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests