Reviewer’s report

Title: Case report: Recurrent pituitary adenoma has increased load of somatic variants

Version: 0 Date: 19 Jun 2019

Reviewer: George Kontogeorgos

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My comments are as follows:

The authors should follow the current terminology to define pituitary adenomas, as it was adopted by the recent WHO classification of 2017. Accordingly, somatotropinomas and corticotropinomas are now called somatotroph adenomas and corticotroph adenomas respectively.

Background
Page 7, Line 108 … "somatic mutations in PA in a primary and recurrent tumour"..

This is not true. See: Zahedi et al. Clin Endocrinol. 55:549,2001 Distinct clonal composition of primary and metastatic adrencorticotrophic hormone-producing pituitary carcinoma.

Page 8, Lines 134, 135:
… "for luteinizing hormone beta polypeptide (LH), glycoprotein hormones alpha polypeptide (CGA),"
…..
Replace polypeptide by subunit.

Page 9, Lines 136, 137 and 152, 153:
"Transitional-type immunostaining of CK8 was observed in more parts of the section"
This phrase does not mean anything. The authors have to describe whether the distribution of CK8 was dot-like or diffuse.

Page 16, Line 303, 304:
… "rapid regrowth of PA is accompanied by the expansion of the tumour mutational load"..
This is a speculation non proved by the low Ki-67 index reported in the 1st and second operation (1.5% and 1%).
The tumor regrowth is more likely attributed to the adenoma mass left behind in the 1st operation.

Lastly, Figure 3 is suboptimal. The tumor is mostly chromophobic, not basophilic. Only the nuclei are basophilic.
The "acidophilic elements" indicated by arrows in Figure legend 1, probably represent red blood cells

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Unable to assess

Does the work include the necessary controls?
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Unable to assess

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No

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