Reviewer's report

Title: MUTYH-associated colorectal carcinomas display histopathological similarities to microsatellite unstable carcinomas

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Reviewer: Reinhard Buettner

Reviewer's report:

This is a very interesting and well performed study addressing histopathological and molecular features of MUTYH-associated colorectal carcinomas. I think it has strong merits and compiles enough cases (58 carcinoma cases) to validate the conclusions if the mutational data can be completed.

However some of the mutational data were done on significantly smaller numbers and therefore represent only subsets.

The following numbers of cases are given in the text (p 8)

MSI analysis: 42 cases
APC: 36 cases
K-RAS: 38 cases
CTNNB1: 37 cases
p53 immunostaining: 36 cases
p53 sequence analysis: 16 cases
SMAD staining: 26 cases

Since all tumors were used for MMR-protein immunostaining there is no reason why the immunostaining of the other analytes cannot be performed completely. Also microsatellite analysis works nicely on paraffin-embedded tissue blocks and, hence, should be doable.

Since the main conclusions on the manuscript depend on the percentage of mutations, my strong advice is to perform all of these analyses on all 58 carcinomas listed in table 1. If this is not possible for some reason, only those carcinomas should be listed that were analyzed entirely.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

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'