Reviewer's report

Title: Pseudomyxoma peritonei - two novel orthotopic mouse models portray the PMCA-I histopathologic subtype

Version: 2 Date: 13 March 2007

Reviewer: Kim Geisinger

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General
Flatmark et al have conducted and reported an interesting and potentially valuable investigation of an animal model of pseudomyxoma peritonei (PMP). I find no problems with their actual study methods or general conclusions.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

My major criticism is personal but I think important. My colleagues and I have published several papers in which we claim (& I think demonstrate) that all forms of PMP are malignant. Thus, we do not accept DPAM in the Ronnett classification.
References include: Bradley et al Am J Surg Pathol 2006;30:551-9 and Stewart et al Ann Surg Oncol 2006; 13:624-34. We categorize PMP as 2 entities: mucinous carcinoma peritonei (MCP), low grade and MCP, high grade. The malignant nature of DPAM was shown more recently (Geisinger Am J Clin Pathol 2007; 135-43) as several cases metastasized to the pulmonary parenchyma. I believe the authors should acknowledge this new classification in the introduction and discussion. (From the description of their 2 models, it appears as if they would be considered by us as MCP, low grade).

In the last paragraph of the Introduction, the authors state that PMP is characterized by noninvasive growth. This is true in the majority of instances, but does occur in a large minority. This is stated in the histologic classification of Ronnett that they cite. This needs to be addressed.

Did either or both patients receive chemotherapy before tissue was taken for growth in mice? This could affect some aspects of the behavior or characterization of the tumors. This should be stated in the Material seciton.

Patient #2 had a primary adenocarcinoma, but in the model most of the tumor cells appeared benign (adenomatous). Can they please explain that in the results or discussion section(s)?

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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Discretionary Revisions (which the author can choose to ignore)
In the second paragraph of the discussion the authors state that one difference between human and mouse tumor is the free, fluid based growth of the latter by cells in the murine peritoneal cavity. Perhaps this helps to explain the lack of invasion of tissue in their model.

What next?: Accept after minor essential revisions

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:**

Please see my review. The first statement declares my own professional interest in this arena. There is nothing of a financial nature of conflict.