Reviewer's report

Title: Clinicopathological study of centrally necrotizing carcinoma of the breast

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Reviewer: Rafael E. Jimenez

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The article by Zhang et al. is a comprehensive evaluation of a morphologically characteristic variant of breast carcinoma which may have significant clinical implications. The authors examined a set of 73 cases of centrally necrotizing carcinomas of the breast. They do a very good description of the clinical and pathologic features of this type of tumor and verified previous suggestions that these tumor may have a more aggressive behavior than its T stage would suggest, as well as a particular proclivity to metastasize to visceral organs, rather than bones and axillary lymph nodes. The paper is well written, comprehensive and exhibits clinically valuable data.

The main missing aspect in the series is the relationship of this type of tumor to BRCA mutations. Given the tendency to display a basaloid immunophenotype, and the association of this immunophenotype with BRCA mutations, it would be interesting to know if BRCA testing was performed on any these patients, or if there was any strong family history that would suggest such an association.

The authors suggest that because in two cases the biopsy results were inconclusive, that all cases in which CNC is suspected should be submitted to open biopsy. The authors do not present the data on needle core biopsy for the set of patients other than mentioning this finding. This would have been a valuable addition to the manuscript. Nevertheless, with only 2 cases with inconclusive biopsy it seems too strong of a statement to recommend open biopsy for cases in which this variant is suspected. Given that the clinical criteria to suspect this variant are not yet well defined, this would result in an unnecessary amount of open biopsies. It would seemed more logical to recommend open biopsy in those cases suspicious for CNC with an inconclusive needle core biopsy.

Minor Revisions:

1. The use of the term "stromal invasion" in several places of the manuscript (pages 7-18, 8-26, 11-3) to denote infiltrative edges is confusing, as this is a term that is used mostly to denote microscopic invasion of the stroma. I would suggest changing this to avoid confusion.

2. The presence of a tubular carcinoma in one of the cases (page 8-17) is puzzling. Was this a separate tumor, or did the entire invasive component was a tubular carcinoma? If the latter, the case may not fit the definition of CNC. Expansion in the description of this case is recommended.
3. Page 10-8 "In accordance with these results...." This phrase needs rewording. The axillary dissection was not performed "in accordance with" those results, but the results obtained were in accordance with what was previously published.

4. Page 10-11 "Lymphatic metastases" is better referred as "lymph node metastases"

5. Page 10-12 "less radiographically reported" does not sound appropriate. Presumably the authors want to say something in the lines of "reports on the radiographic features are scarce".

6. Page 10-13: Please correct "who showed characteristic results"

7. Page 14-21: "These results suggest that the central necrotic or acellular zone..." should read better if it says "These results suggest that the SIZE OF THE central necrotic or acellular zone...."

8. PAGE 15-9. It should read "It IS associated with..."

9. Picture 3-E is too low power to appreciate the granulomatous reaction. Recommend a higher power picture.

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 was the first author of a paper that was frequently referenced in the manuscript. Otherwise, I have no competing interests.