Author’s response to reviews

Title: Does the principle of minimum work apply at the carotid bifurcation: a retrospective cohort study.

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Author’s response to reviews: see over
Revision Summary:

Referee 2

Major Compulsory Revisions

Discretionary Revisions

1. The results of the nonlinear regression methods seem not entirely consistent with those of the root-finding method. The median values of n from figure 3 (based on the root-finding method) are between 1.5 and 1.6, while the regression methods (table2) return n≈1.3 approximately, with confidence intervals of about [1.2, 1.45]. The difference is not large, not sure if it significant, and it does not change the conclusion of the paper, but it would be interesting to find out where this difference comes from (some outliers that have a high impact on the regression result perhaps?). What also worries me: the fit in figure 2 does not seem very well. There are many more points below the line y=x. Is there an explanation for this?

The cause of the difference has been investigated by removing possible outliers and changing the solver used in the nonlinear regression, neither of which changed the result noticeably. We attribute the difference to the weighting process used by nonlinear regression. We have added a plot (Figure 4) to show the quality of fit produced using the mean of the individual estimates. The y=x line does track the centre of the data more closely in this case. Short extensions to the results (last paragraph) and discussion (first paragraph) have been made accordingly. The range of n values used throughout the paper has now been changed to 1.2-1.6. This does not change the conclusions, as noted by this reviewer.

Minor Essential Revisions

1. Section Results, "are summarised Table 1" -> "are summarised in Table 1"
2. Caption figure 2: please mention the value of n (=1.32) in the caption, for convenience.

Both of these changes have been made.