Response to letter: How much will a catheter tip expand in aspiration thrombectomy?

We thank Liu and Kallmes for their interest and valuable observations, which might help to improve the understanding of our study.1

Our findings show, in all catheters, an increased aspiration effective force as compared with the expected theoretical force corresponding to the labeled catheter diameter.2 This is an objective and evidenced finding.

We agree with Liu and Kallmes that the reasons for these differences are probably basically due to two different factors:

- Catheter tip distensibility
- Clot–catheter friction.

The proportional impact of each factor might certainly be discussed. Both causes are also correlated, because a higher distensibility leads to a larger clot–catheter interaction surface. In our study, after adjusting for tip distensibility, an almost straight correlation is found between the measured force and the effective inner diameter (ID) for all catheters. This is very revealing and hard to believe that it is a coincidence if friction forces exert a higher effect.

Liu and Kallmes point out several flaws that might have been committed in our study. Distensibility substantially influences the aspiration catheters and optimize the efficiency and procedure outcomes. We invite Liu and Kallmes to contact us directly and will be pleased to make in situ demonstrations when the health situation makes it possible. That would allow sharing of information and experimental conditions, enabling us to reach common conclusions after fruitful discussions.

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Contributors All authors contributed equally to this work.
Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.
Competing interests None declared.
Patient consent for publication Not required.
Provenance and peer review Commissioned; internally peer reviewed.

Accepted 26 June 2021

http://dx.doi.org/10.1136/neurintsurg-2021-017856
http://dx.doi.org/10.1136/neurintsurg-2021-017487
doi:10.1136/neurintsurg-2021-017919
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