

Re: picking a lesion threshold

From: **Ryan Cabeen** | ryan.cabeen@loni.usc.edu

Wednesday, Jun 30, 2:22 PM

To: **Ayata, Cenk, M.D.** | cayata@mgh.harvard.edu

Hi Cenk,

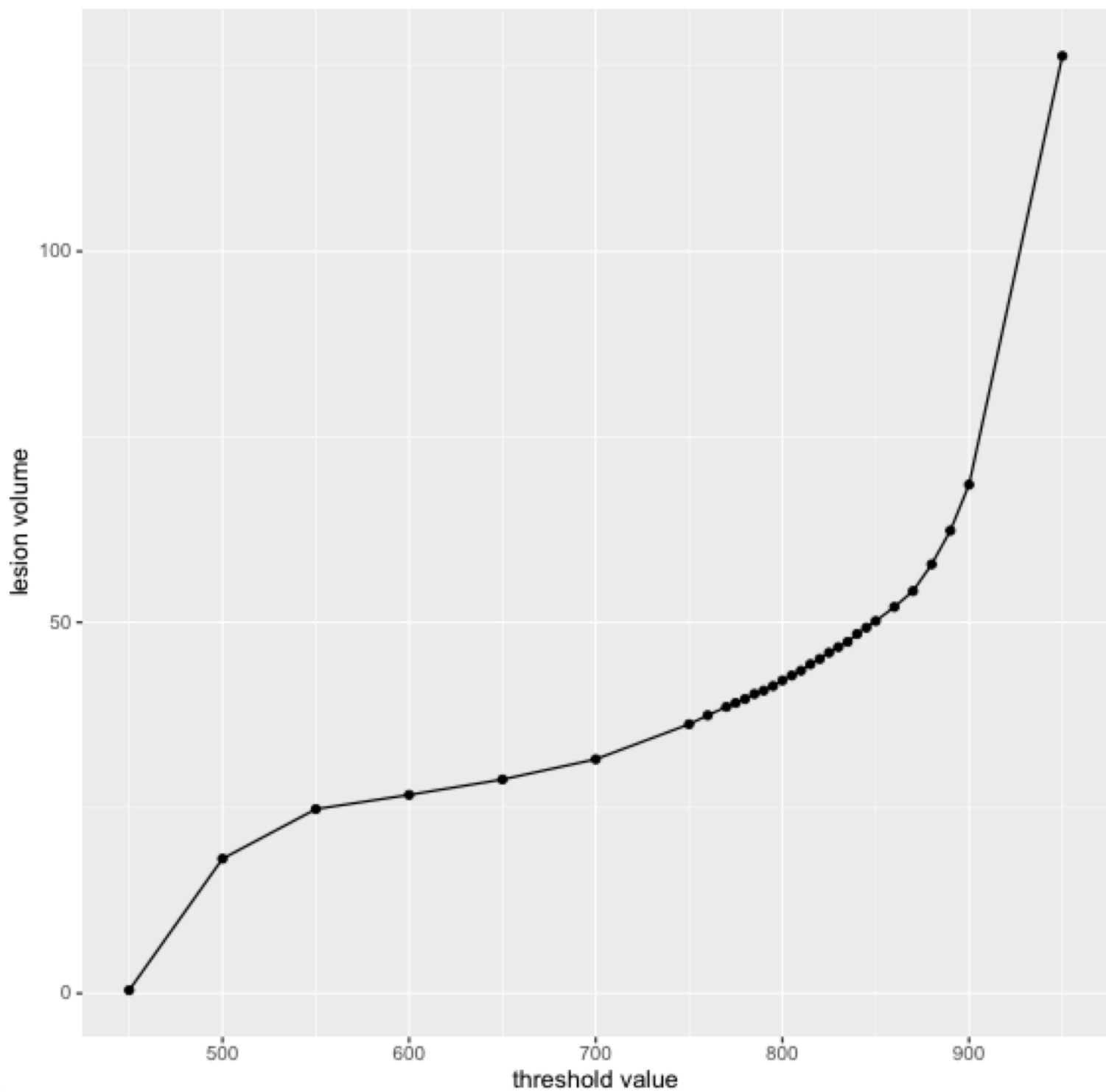
Just wanted to share some food for thought — a first pass at making the threshold vs lesion volume plot for a randomly selected case from stage one. Seems like it has a sigmoidal shape we discussed, although not terribly flat. However, it seems like the derivative is flat in that region, so maybe we can use something like an “elbow criteria” or “knee of the curve” to pick the threshold:

en.wikipedia.org/wiki/Knee_of_a_curve

Anyway, I'll repeat this for the whole cohort, and we can see how this plays out across individuals and sites, and we can review in detail next week.

Cheers,

Ryan



Ryan P. Cabeen, PhD
Chan Zuckerberg Imaging Scientist
Assistant Professor of Research Neurology
Laboratory of Neuro Imaging
USC Stevens Neuroimaging and Informatics Institute
Keck School of Medicine of USC
University of Southern California
2025 Zonal Ave.
Los Angeles, CA 90033

Tel: (323) 44-BRAIN
Email: rcabeen@loni.usc.edu
Web: cabeen.io
www.ini.usc.edu

From: **Ayata, Cenk, M.D.** | CAYATA@mgh.harvard.edu

Wednesday, Jun 30, 3:13 PM

To: **Ryan Cabeen** | Ryan.Cabeen@loni.usc.edu

Awesome, just as we predicted! The flat portion will likely be in similar region horizontally even if the magnitude (vertical axis) is different because of different lesion volumes. We can then look at the slope of the curve and get rid of the vertical axis differences. We could then justify the selection. It will be great to see how this fits at different sites.

C

From: **Ryan Cabeen** | Ryan.Cabeen@loni.usc.edu

Wednesday, Jun 30, 5:22 PM

External Email - Use Caution

Hi Cenk,

Just wanted to share some food for thought — a first pass at making the threshold vs lesion volume plot for a randomly selected case from stage one. Seems like it has a sigmoidal shape we discussed, although not terribly flat. However, it seems like the derivative is flat in that region, so maybe we can use something like an “elbow criteria” or “knee of the curve” to pick the threshold:

https://en.wikipedia.org/wiki/Knee_of_a_curve

Anyway, I'll repeat this for the whole cohort, and we can see how this plays out across individuals and sites, and we can review in detail next week.

Cheers,
Ryan

<Screen Shot 2021-06-30 at 2.15.19 PM.png>

Ryan P. Cabeen, PhD
Chan Zuckerberg Imaging Scientist
Assistant Professor of Research Neurology
Laboratory of Neuro Imaging
USC Stevens Neuroimaging and Informatics Institute
Keck School of Medicine of USC

University of Southern California
2025 Zonal Ave.
Los Angeles, CA 90033
Tel: (323) 44-BRAIN
[Email: rcabeen@loni.usc.edu](mailto:rcabeen@loni.usc.edu)
Web: cabeen.io
www.ini.usc.edu

The information in this e-mail is intended only for the person to whom it is addressed. If you believe this e-mail was sent to you in error and the e-mail contains patient information, please contact the Mass General Brigham Compliance HelpLine at www.massgeneralbrigham.org/complianceline . If the e-mail was sent to you in error but does not contain patient information, please contact the sender and properly dispose of the e-mail.

Please note that this e-mail is not secure (encrypted). If you do not wish to continue communication over unencrypted e-mail, please notify the sender of this message immediately. Continuing to send or respond to e-mail after receiving this message means you understand and accept this risk and wish to continue to communicate over unencrypted e-mail.
