

Intraplaque hemorrhage on carotid mri in stroke patients

Citation for published version (APA):

Kassem, M. (2023). *Intraplaque hemorrhage on carotid mri in stroke patients: On the road towards clinical application*. [Doctoral Thesis, Maastricht University]. Maastricht University.
<https://doi.org/10.26481/dis.20231212mk>

Document status and date:

Published: 01/01/2023

DOI:

[10.26481/dis.20231212mk](https://doi.org/10.26481/dis.20231212mk)

Document Version:

Publisher's PDF, also known as Version of record

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

Intraplaque Hemorrhage on carotid MRI in stroke patients: on the Road Towards Clinical Application

Mohamed Kassem

Maastricht, 12 December 2023

1. Intraplaque hemorrhage is caused by the entry of blood from the vascular lumen through fissures or ruptures in the fibrous cap. (this thesis)
2. Carotid intraplaque hemorrhage does not show an increase over a two-year period in stroke patients who initiated antiplatelet treatment after the event compared to those who had already their antiplatelet medication. (this thesis)
3. Routinely acquired mask images from CE-MRA can be used to visualize IPH. (this thesis)
4. MATCH images of carotid plaque acquired with a single 5-minute scan, are suitable for scoring plaque components like the presence of a lipid-rich necrotic core and intraplaque hemorrhage. (this thesis)
5. Incorporating MRI for detecting carotid IPH into the clinical care of ischemic stroke patients with carotid artery disease will facilitate personalized treatment. (impact)
6. In clinical trials, imaging endpoints can provide objective measures of treatment efficacy, helping to bring new therapies to the market.
7. Randomized control trials are required to assess the benefit of carotid revascularization in patients with a high-risk plaque, such as plaques with intraplaque hemorrhage (IPH).
8. One day, evaluation of plaque characteristics will be part of standard clinical care, rather than solely relying on the degree of stenosis, in patients with ischemic cardiovascular diseases.
9. Science is the art of asking 'why' and the skill of finding 'how'.
10. "Life isn't about finding yourself. Life is about creating yourself." - George Bernard Shaw