

## A study with profound implications: Rapid Aneurysm demonstrates strong performance with 95% sensitivity and 100% specificity



A well-validated AI programme that detects cerebral aneurysms is expected to be an asset to radiologists. AI programmes that detect cerebral aneurysms on CTA have been shown to improve radiologists' sensitivity for the detection of aneurysms."



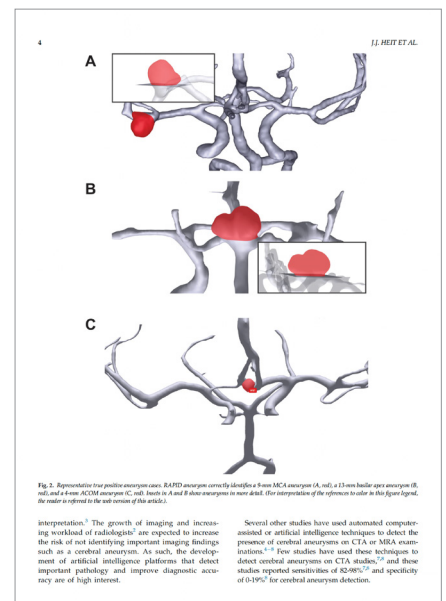
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*Rapid Aneurysm: Artificial intelligence for unruptured cerebral aneurysm detection on CT angiography Journal of Stroke and Cerebrovascular Disease, Vol. 31, August 2022*

### STUDY SUMMARY:

**Rapid Aneurysm is highly accurate for the detection of cerebral aneurysms on CTA**

The accuracy of Rapid Aneurysm in detecting and locating aneurysms was evaluated in a retrospective cohort study, *Rapid Aneurysm: Artificial intelligence for unruptured cerebral aneurysm detection on CT angiography*, published in the Journal of Stroke and Cerebrovascular Disease and written by Dr. Jeremy Heit and co-authors. The study's conclusion: Rapid Aneurysm is highly accurate in its detection, and warrants a positive outlook for aneurysm patients and implementation of the product at more institutions.



**Fig. 2. Representative True Positive Aneurysm Cases.** Rapid Aneurysm Correctly Identifies A 9-Mm Mca Aneurysm (A, Red), A 13-Mm Basilar Apex Aneurysm (B, Red), And A 4-Mm Acom Aneurysm (C, Red). Insets In A And B Show Aneurysms In More Detail. (For Interpretation Of The References To Color In This Figure Legend, The Reader Is Referred To The Web Version Of This Article.).



*Our findings suggest that adoption of aneurysm detection platforms like Rapid Aneurysm may be a valuable tool to assist radiologists in their interpretation of CTA studies."*

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## ANALYSIS

Dr. Heit and team evaluated fifty-one consecutive CTAs from three centers performed between January 2019 and December 2020. The unruptured aneurysms included in the study were > 3mm in diameter and located in the intracranial circulation.

The expert neuroradiologists screened the scans and helped set up the reference standard. They weren't aware of the patient's clinical history, initial CTA results, and Rapid Aneurysm results.

## FINDINGS

The expert neuroradiologists determined the median aneurysm diameter to be 5.4 mm. The aneurysms were located in the internal carotid artery/posterior communicating artery (36.7%), middle cerebral artery (30%), and anterior communicating artery (25%). The expert neuroradiologists detected sixty aneurysms. Rapid Aneurysm detected 57 aneurysms. Rapid Aneurysm ascertained the absence of aneurysms in 909 vessel segments.

### RAPID ANEURYSM PERFORMANCE METRICS

Measure	Estimate	Lower 95% CI	Upper 95% CI
Sensitivity	0.95	0.863	0.983
Specificity	1.000	0.996	1.000
Positive Predictive Value	1.000	0.937	1.000
Negative Predictive Value	0.997	0.990	0.999
Accuracy	0.997	0.991	0.999

**Table legend:** Vessel segments evaluated included anterior cerebral artery (ACA), anterior communicating artery (ACOM), anterior inferior cerebellar artery (AICA), basilar artery, internal carotid artery or posterior communicating artery (ICA/PCOM), middle cerebral artery (MCA), posterior cerebral artery (PCA), posterior inferior cerebellar artery (PICA), superior cerebellar artery, or vertebral artery.

## CONCLUSION:

**The Rapid Aneurysm imaging platform aids physicians in finding unruptured brain aneurysms in CTA scans**

The reported sensitivity of radiologists in identifying these types of aneurysms on CTA ranges from 76-98%, and variability in identification between readers is well documented in literature.

Given radiology staff shortages in many hospitals and increasing radiology workload, adding AI software like Rapid Aneurysm to the radiology workflow can improve efficiency and help ensure aneurysms aren't missed.

**Learn more about Rapid Aneurysm, our FDA-cleared imaging platform for cerebral aneurysm surveillance and management at [rapidai.com](https://rapidai.com).**