

The Use Of Accipio Ax Could Have Helped Avoid the Errant Administration of tPA. A Case Study.

Correctly identifying suspected intracranial hemorrhage (ICH) could help prevent the in-error administration of tPA to a stroke patient. Assistance in ICH identification for stroke treatment care can make a difference. This case study outlines the impact of utilizing AI solutions to empower the physician treatment decision.

Introduction

During the evaluation of the MaxQ AI ACCIPIO ICH and Stroke Platform for use with stroke patients, the lead stroke neurologist at a major US acute facility considered a recent patient case where Accipio Ax could play a key role in intracranial hemorrhage (ICH) identification; helping avoid the possible misdiagnose of missed ICH in a non-contrast head CT. With Accipio's findings empowering ICH identification, the potential to prevent the errant administration of tPA to a stroke patient exists. MaxQ AI's Accipio Ax— providing automatic, rapid, highly-accurate slice-level annotation and prioritization of ICH—can support the skilled physician in real-time. Accipio Ax is part of the comprehensive, seamless, and secure ACCIPIO® Platform, comprised of Accipio Ix, Accipio Ax, and Accipio Dxx.

A Stroke Case Where Accipio Could Help

Consider this Patient Case: A patient suddenly developed difficulty speaking and began experiencing left-sided weakness. His family rushed him to a hospital. Upon his arrival at the Emergency Department, the stroke team evaluatee him and determined that he is having a stroke. They ordered an expeditd non-contrast CT, which was interpreted as negative for ICH at the scanner console. The administration of emergent therapy (IV tPA) was started. Per protocol, the scan was immediately re-read retrospectively by another radiologist, who determined the patient did have a small, subtle subdural hemorrhage that had been missed. tPA is immediately stopped and pharmacologically reversed. The combined efforts of the stroke team prevented an adverse event.



20%

ICH accounts for approximately 20% of all strokes and presents in up to 30% of all head injuries*

About MaxQ AI®

MaxQ AI is at the forefront of medical diagnostic artificial intelligence (AI). Our mission is to reinvent patient diagnosis through artificial intelligence (AI), improved triaging and diagnostics processes, and reduction of avoidable medical errors and costs. MaxQ AI's solutions are seamlessly integrated and globally deployed through trusted global healthcare OEM partners, cyber-secure with leading 3rd party validated certification. At MaxQ AI, we have developed a comprehensive workflow software platform, ACCIPIO (meaning "to learn" in Latin), that uses artificial intelligence to interpret medical images, such as non-contrast head computed tomography (CT) scans and surrounding patient data. Our platform will provide real-time triage, rule out, annotation, quantification, and notification in the acute care setting, where every minute counts. Our AI solutions are well-suited to help acute care physicians, who are under extreme pressure to make quick and accurate decisions while treating a large number of patients, reach faster, more accurate decisions when diagnosing stroke, head trauma, and other life-threatening conditions.

The ACCIPIO Platform

Accipio Ix™

Provides automatic, rapid, highly accurate identification and prioritization.

Accipio Ax™

Provides automatic, rapid, highly accurate slice-level annotation and prioritization.

Accipio Dxx™

Automatic, Rapid, Highly accurate triage for suspected ICH presence or High NPV absence.

To learn more, visit www.maxq.ai or follow us on LinkedIn.

Schedule a demo at [maxq.ai/schedule demo/](http://maxq.ai/schedule-demo/)

Why ACCIPIO?

MaxQ AI will support the complete ACCIPIO Clinical Platform with INSIGHT™. It will support the Radiology Department, Emergency Room, Neuroradiology, and the Stroke teams with a fully automated solution. The ACCIPIO platform will provide tools for suspected positive ICH triage and prioritization (Ix), slice-level annotation (Ax), lesion-level annotation (Ax Plus) and quantification (Ax Pro), triage of suspected positive and negative ICH triage (Dxg), and diagnostic rule-out (Dx).

Accipio Ax

Provides automatic, rapid, highly accurate slice-level annotation and prioritization.



The Solution

This use case, where a patient is initially diagnosed as negative for ICH and is given tPA therapy could lead to potentially serious consequences. MaxQ AI's Accipio Ax, empowering the physician interpretation, could be used in real-time to provide identification of ICH in seconds.

"MaxQ AI's ACCIPIO platform would have been an important addition to determining the treatment path of this patient had it been available at that time," stated the physician. "Seamless integration is key as physicians need to be able to view the images in many places, such as on the CT scanner, on the PACS at a radiologist's location, or by a tele-neuroradiologist who is at home looking at the images on their device. MaxQ AI's seamless integration and secure workflow allows a multi-faceted approach to the patient's stroke care and is a welcomed workflow assistant."* MaxQ AI is ushering in empowered care — the dawn of partnership between AI and the skilled care provider — to extend expertise to every patient and care-provider.

Fast Answers with AI on Intel:

To handle the demands of the acute care environment, MaxQ AI chose Intel AI technologies for cost-effective performance in a flexible and easily managed platform. The company's machine-learning experts optimized the solution's performance by working with the Intel® AI Builders program, which brings together a range of companies and organizations committed to fulfilling the potential of AI. The collaboration paid off. MaxQ AI's optimizations produced a 3x improvement in the image processing time for Accipio Ix without compromising accuracy, according to Steve Kohlmyer, vice president of research and clinical collaborations at MaxQ AI. "The original product release of Accipio Ix took an average of 4.1 minutes to process a radiology exam," he said. "The average processing time for the first 4,000 exams at Capital Health has been 1.4 minutes. That improvement reflects the optimization we did through the Intel AI Builders partnership." MaxQ AI has taken advantage of a broad range of Intel® tools and technologies. It uses the Intel® Math Kernel Library for Distributed Neural Networks (Intel® MKL-DNN) to fine-tune model performance on Intel processors. MaxQ AI also deploys the Intel Distribution of OpenVINO toolkit to speed up image recognition applications on Intel® architecture-based platforms.

Conclusion

This physician and MaxQ used this case study to demonstrate an all-to-common event, a missed ICH, and how the MaxQ AI ACCIPIO solution could have helped accurately identify the ICH in seconds, leading to a possible better treatment path. It is MaxQ AI's mission is to reinvent patient diagnosis through artificial intelligence (AI), improved triaging and diagnostics processes, and reduction of avoidable medical errors and costs—all leading to better patient outcomes.

MaxQ AI's Regulatory & Quality Compliance

MaxQ AI is a healthcare technology company developing innovative medical diagnostic artificial intelligence software to augment emergency room physicians in their daily practice. We prioritize absolute rigor in all certifications, systems, security, and compliance to ensure the company behind the platform leads by example.

- ISO 27001 Information Management Security System Certification
- Multiple FDA, CE, Australia regulatory approvals
- ISO 13485 certified (medical manufacturing)
- Supports HIPAA compliance (patient privacy)
- FDA Breakthrough Status (awarded to a single company for a single indication)
- FDA Pre-Certification Member (standards—shaping of the future)

To learn more, visit www.maxq.ai or follow us on LinkedIn.

Schedule a demo at maxq.ai/schedule-demo/

MaxQ AI Global Headquarters
96 Yigal Alon Street, Entrance A
Tel Aviv, Israel 6789140

What if Accipio Ax was assisting the physician in real time?

