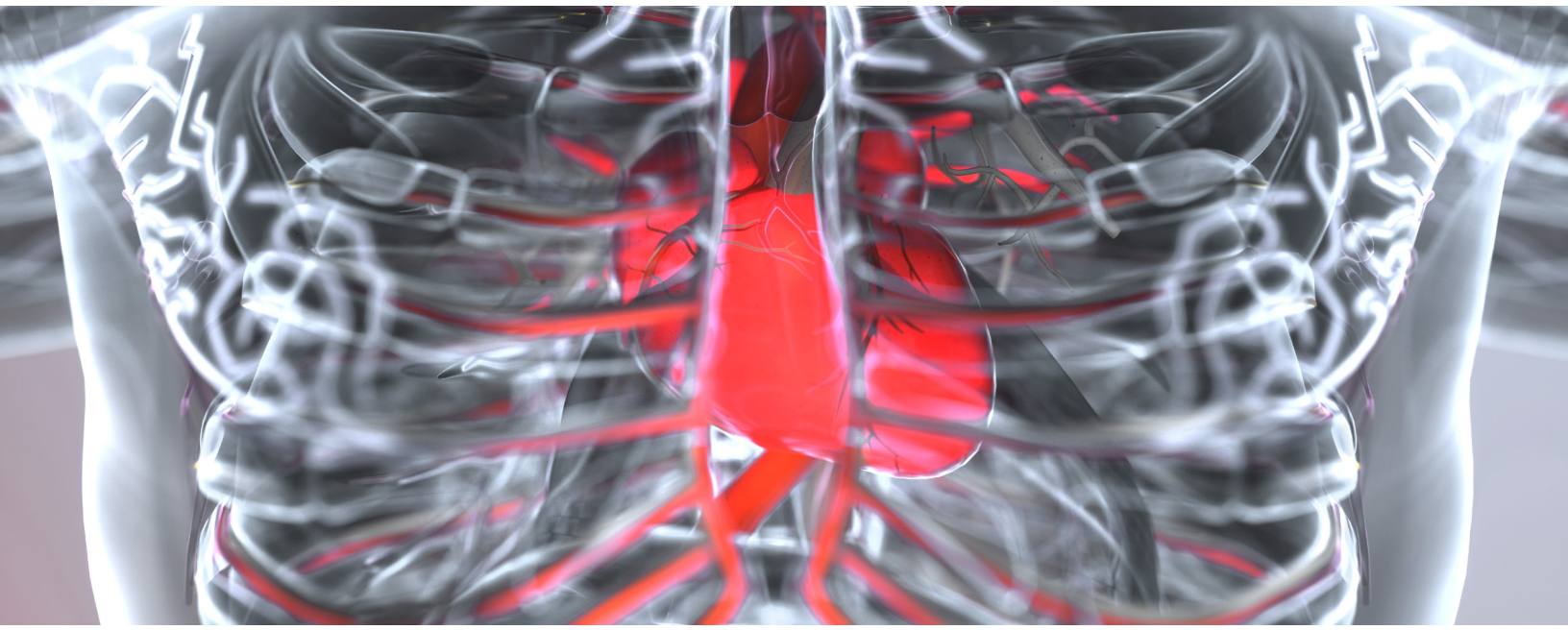
Case Study

TRANSFORMING CORONARY CALCIUM SCORING WORKFLOW WITH CT VSCORE+

South Tampa Cardiology Sees Improved User Efficiency by 2.3x Through Automation



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Abstract

The increasing demand for coronary artery disease (CAD) screenings is placing growing pressure on cardiology practices to deliver fast, consistent, and clinically reliable calcium scoring. As imaging volumes rise, traditional manual workflows are becoming more difficult to sustain—particularly in cases with higher calcium burden, where processing becomes more time-intensive and variable.

CT VScore+, part of the Vitrea® Advanced Visualization platform, automates coronary calcium scoring directly from cardiac CT datasets, reducing manual effort while preserving clinician oversight. In a real-world evaluation conducted at South Tampa Cardiology using 100 institution-selected patient cases, the solution demonstrated a 2.3x* improvement in workflow efficiency, driven by a 57%* reduction in processing time. Performance gains increased with case complexity while maintaining consistency in clinical scoring. In select evaluation cases, CT VScore+ identified subtle coronary calcium findings that were not initially reflected in the manual scoring workflow, including cases where manual scoring initially recorded a zero-calcium assessment.

* Results are based on a specific customer evaluation. Individual outcomes may vary depending on workflow configuration, user experience, case complexity, and site-specific operational factors.

Customer Overview

South Tampa Cardiology is a leading private cardiology and advanced imaging practice in Tampa, Florida, dedicated to the early detection and prevention of coronary artery disease. Led by Dr. Alberto Morales, a cardiac imaging specialist, the practice delivers comprehensive cardiovascular care through a fully integrated, single-site model—combining advanced imaging technologies with a strong emphasis on proactive diagnosis, personalized care, and patient education.

This commitment to early detection has driven steady growth in their cardiac CT program, with the team reviewing up to 15 studies per day. As their cardiac CT program expanded, the team began to evaluate not only how to manage increasing volumes—but how to do so in a way that would scale sustainably over time.

Meeting the Growing Demands of Cardiac Imaging

Across cardiology practices, the volume of cardiac CT studies continues to rise—driven by increased adoption of preventive screening and a greater focus on early detection of coronary artery disease. With this growth comes a parallel increase in post-processing demands, placing added strain on technologists and physicians to deliver timely, accurate results.

At South Tampa Cardiology, these pressures were becoming increasingly evident. Their imaging environment includes an Arineta cardiac CT scanner alongside multiple post-processing systems, including a manual calcium scoring approach performed on a GE workstation. The workflow is supported by Chief Technologist Touria Sidqui, who has more than 15 years of experience in cardiac imaging and post-processing. The team relied on a traditional manual calcium scoring workflow that required careful segmentation, labeling, and validation of coronary calcium across each study. While clinically effective, this approach introduced variability and limited the ability to scale efficiently as volumes increased.

> “As our cardiac CT program has grown, the bottleneck has not been acquiring the images—it has been keeping up with post-processing in a consistent and timely way, especially in more complex cases.”

Alberto Morales, MD
Cardiologist and Founder | **South Tampa Cardiology**

South Tampa Cardiology
ADVANCED IMAGING CENTER

Alberto Morales, MD
Cardiologist and Founder
South Tampa Cardiology

Touria Sidqui
Chief CT Technologist
South Tampa Cardiology

A Shift from Manual Processing to Automation-Enabled Review

Recognizing the limitations of their existing workflow, South Tampa Cardiology began exploring how to consolidate post-processing and interpretation within a single platform. This included expanding their use of Vitrea to support additional capabilities. At the same time, CT VScore+ emerged as a new solution for alleviating their postprocessing bottleneck in coronary calcium scoring workflow.

"The timing was ideal," Dr. Morales explained. **"We were already thinking about bringing everything into one system, and this gave us an opportunity to evaluate not just consolidation—but automation."**

This convergence of growing volume, workflow fragmentation, and the need for scalability led the team to pilot CT VScore+ within their real-world clinical environment. The study included 100 consecutive patient cases selected entirely by the institution, ensuring a realistic representation of everyday clinical conditions. Rather than replacing clinical expertise, CT VScore+ reframes how that expertise is applied. Calcium scoring is performed automatically upon image load, allowing technologists and physicians to move immediately into a review-first workflow—focusing on validation rather than manual construction. This shift was immediately noticeable.

"Previously, I had to build each case step by step. With CT VScore+, the calcium score is already populated when the study opens, so my role shifts to reviewing and validating the findings rather than creating the score from scratch."

—Touria Sidqui, Chief Technologist

Real-World Results: Efficiency That Scales

The evaluation demonstrated a 2.3x* improvement in workflow efficiency, reflecting a substantial reduction in the time required to process each case. More importantly, these gains were not uniform—they increased as cases became more complex.

In low or zero calcium cases, efficiency improvements were meaningful. But as calcium burden increased, the benefits became significantly more pronounced, with the greatest time savings observed in highly calcified studies—traditionally the most time-intensive to process manually. This pattern highlights a critical advantage of automation: it delivers the most value exactly where manual workflows struggle the most.

"The difference is most noticeable in complex or heavily calcified cases. Those are the studies that used to take the most time, and automation makes the workflow much smoother." stated Sidqui

MEASURED IMPACT

Key Findings from 100 Real-World Cases

57% reduction*
in processing time

2.3x improvement*
in workflow efficiency

Up to 70% reduction*
in high-calcium cases

58% reduction*
in challenging cases (n=6)

Time savings observed*
across all calcium score categories

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Consistency Without Compromise

Beyond efficiency, based on validation studies, CT VScore+ demonstrates strong clinical reliability*, delivering expert-level accuracy with near-perfect agreement to clinical readers. In validation studies, the solution achieved an overall ICC of 0.997 versus expert interpretation, reinforcing confidence in both total calcium scoring and vessel-level analysis. In practice, the majority of cases required little to no adjustment*, enabling a streamlined review process. When edits were needed, they were typically minor refinements rather than full rework. This high level of agreement extended across all major coronary vessels including LM/LAD, LCX, and RCA ensuring consistent, high-performance results aligned with expert assessment. Importantly, while some variability in numeric scores was observed, clinical risk classifications remained consistent in most cases, reinforcing confidence where it matters most. This consistency is particularly critical in calcium scoring, where small differences near diagnostic thresholds can influence patient management decisions.

"For us, the key is confidence in the risk category. Small numerical differences can occur in calcium scoring, but when the clinical classification holds, we can make decisions with greater consistency." said Dr. Morales.

Identification of Calcium at the Zero-Score Threshold

In select cases during the South Tampa Cardiology evaluation, CT VScore+ identified low-volume coronary calcium in patient studies where manual scoring had initially resulted in a zero-calcium assessment. While numerically small, these findings resulted in a change from a zero to non-zero calcium score, highlighting the importance of consistent calcium identification in cases near critical scoring thresholds.

"Borderline cases matter. A score of zero versus the presence of even minimal calcium can influence the conversation we have with a patient about risk and prevention. Having confidence in that detection is critical," Dr. Morales added.

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Impact on Workflow and Throughput

By reducing manual effort and accelerating processing—particularly in complex cases—CT VScore+ is designed to support cardiology teams in better managing growing imaging volumes within their current operating model. The shift from manual creation to automation-enabled review allows technologists to work more efficiently, while also helping standardize workflows across users with varying levels of experience.

Dr. Morales notes, **"The efficiency gain matters because it helps us keep up with growing cardiac CT volume without adding strain to the team. It supports a more sustainable workflow and reduced processing time per case."**

Conclusion

As cardiac imaging volumes continue to rise, the ability to scale post-processing workflows without compromising clinical confidence is becoming increasingly important.

CT VScore+ transforms coronary calcium scoring by introducing automation that enhances efficiency, improves consistency, and supports clinical confidence. With a demonstrated 2.3x* improvement in workflow efficiency, and even greater gains in complex cases, CT VScore+ is designed to support a more streamlined workflow.

Support scalable cardiac CT workflows. Discover how CT VScore+ is designed to transform your calcium scoring process.

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Canon Medical Informatics develops Vitrea® Advanced Visualization, a powerful system of integrated software tools and technologies designed to automate image processing and workflows. Vitrea helps technologists, radiologists and physicians perform their jobs more quickly and efficiently to facilitate diagnostic and treatment decisions, while helping IT teams develop an infrastructure that achieves operational cost-savings, sustainability and growth.

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