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Offline, Vendor Neutral Software Can Improve Adoption of Echocardiographic Strain Imaging Providing Valuable Benefits for Better Patient Cardiovascular Management

The benefits speckle tracking strain imaging brings to echo analysis and interpretation, as well as to overall cardiovascular patient management, are widely known. Today, strain imaging has become an integral component to a comprehensive analysis of an echo study.

Best practices for incorporation of strain imaging into the clinical setting have shown that an echo lab must have access to fast, reliable, well validated software that is capable of being highly integrated into the cardiovascular information system (CVIS) environment for seamless deployment across the hospital network. A beneficial feature for easy incorporation of strain imaging and broadscale usage is to ensure software is available off the ultrasound (US) cart and has vendor neutral processing capabilities.

Challenge at Hand: Traditional Echo Strain Imaging Analysis Software has been Isolated to the Ultrasound Cart, Causing Workflow and Adoption Challenges



This workflow has and can pose resource, workflow and safety challenges that may reduce the adoption of strain imaging.

Hospitals that were early adopters of echo strain imaging typically performed analysis on the US cart at the point of study acquisition and while the patient was still in the room.

“Applying strain imaging allows sonographers to image with a focus and a purpose, thinking much more about function and possible impacts of a disease. When strain imaging is applied to echocardiographic images, we can monitor patients more closely. Strain has become a critical tool used to help guide clinical decisions and increase clinical confidence.”

– Manager and Technical Director of Non-Invasive Imaging at U.S. Leading Academic Health System

Resource Challenges

- If a strain imaging analysis is tied to specific vendor-type US cart, the lab may not be taking advantage of its entire fleet of machines.
- At times, only a subset of sonographers are trained and have the expertise to conduct the strain analysis per the US machine manufacturer and software type requiring those staff to be available at point of acquisition and analysis.
- Study acquisition may take a longer amount of time for both sonographer and patient with an analysis in the room, restricting use of the US machine for another patient.
- A comprehensive full analysis of the entire heart may not be available on US machine thus limiting the assessment of inter-chamber relationships during certain disease presentations.

Workflow Challenges

- Analysis on US machines can be limiting; the ASE recommends to standardize monitoring of patient's serial studies by using the same vendor type and version of software.
- The sonographer is required to ensure comprehensive strain analysis at point of study acquisition with the patient in the room, which can reduce patient throughput and increase time spent in the room.
- Some software does not allow an analysis to be amended afterwards and exported to CVIS. An analysis may be eliminated completely if tracking/ROI is not accurate.

Safety Challenge

- Strain analysis at the US cart only increases the amount of time for potential exposure of COVID or other contagious diseases.

CASE STUDY

UC San Diego Health's Successful Utilization of Offline, Vendor Neutral Strain Imaging with EchoInsight® Zero Footprint (ZF)

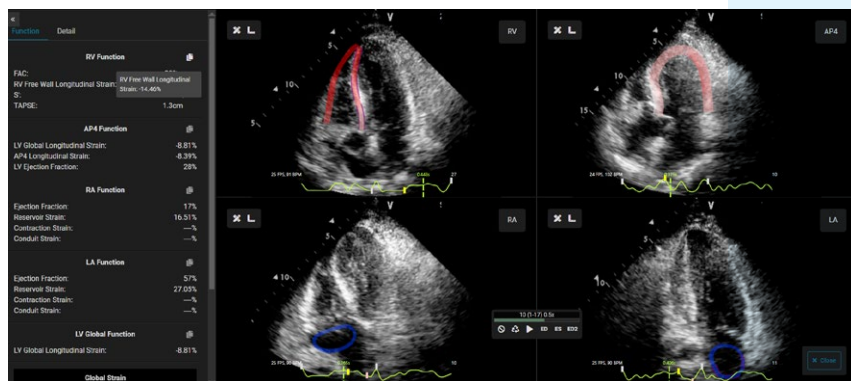
UC San Diego Health has been using the advanced capabilities of strain imaging for the past six years in their echo lab. The recent integration of their CVIS and EchoInsight® Zero Footprint (ZF) has taken clinical adoption of strain imaging to the next level by enabling improved access for more patient studies to benefit across their hospital network.

“By taking strain imaging off the cart and integrating it into our CVIS, it allows us more focused time to conduct a thorough analysis, and in an efficient manner; ultimately, allowing us to provide better patient care,” said Megan Kraushaar, Manager and Technical Director of Non-Invasive Imaging, UC San Diego Health. “Additionally, by dedicating time for strain analysis offline, we have improved our utilization of resources throughout the echo lab and streamlined patient throughput.”

As clinical use of strain imaging becomes more prevalent, UC San Diego Health continues to see its benefits in their adult echo program. “We are able to use studies from any ultrasound cart in our lab and throughout all our facilities for strain analysis,” Kraushaar said. “EchoInsight ZF is a vendor neutral software platform that allows us to process any DICOM study and provides a floating license architecture which has increased our overall access and use of strain. This has helped us to add strain analysis to more patient populations that can benefit, along with improve standardization across our program.”

“It is easy to amend or edit a study after acquisition with the click of a button on EchoInsight, if we need to re-trace our ROI (region of interest), we can easily do so on any workstation,” Kraushaar said. “We have full access to our LV, RV and atrial strain applications on EchoInsight, so if anything needs to be edited on a study, we have a more efficient approach versus needing to adjust directly at the ultrasound cart.”

The ability to perform strain analysis anywhere has also allowed for a safer work environment for both patient and clinical staff at UC San Diego Health. “With COVID precautions still taken very seriously, we are able to spend less time in contact with patients because once we are finished with acquisition, we can perform the quantifications outside of the room,” Kraushaar said.





Offline Strain Imaging that is Vendor Neutral with Floating License Architecture, and Integration within CVIS Offers a Faster and More Efficient Approach than Traditional Analysis

Hospitals and Echo Labs alike can benefit from an offline and vendor neutral solution for strain imaging which helps to improve workflow and patient management through the ease of access across an entire network. The floating license architecture along with the deep integration within a CVIS/PACS creates an environment in which strain is always available and easily viewed and manipulated if needed.

Benefits include:

Resource Benefits

- Available with vendor neutral DICOM analysis capabilities, increasing utilization of entire fleet of US systems for study acquisition and studies processed within seconds offline.
- Clinicians can batch process at a designated time of the day rather than at the point of study acquisition.
- Training is only necessary for one vendor strain analysis software since DICOM based.
- Strain analysis is now offline, along with automated chamber quantification measurements based on ASE guidelines. This reduces the need for sonographers to do any additional analysis in the exam room.
- Software can be a zero footprint architecture with a floating license, enabling clinicians to access strain analysis at any workstation with a web browser within the hospital network.
- A variety of applications with full heart, stress echo and LV contrast analysis capabilities are available.

Workflow Benefits

- Improved patient throughput with less time needed in the patient's room/exam room.
- Useful archiving to CVIS/PACS with DICOM-wrapped movies, images and data.
- Easy amendment of studies in CVIS/PACS with a click of a button.

Safety Benefit

- During the 2020 COVID-19 pandemic, the ASE encouraged echocardiographers to limit the time spent during acquisition.¹ Reduced exposure to COVID and other contagious viruses with less time needed in the study acquisition room gives a better chance for patient and echocardiographer safety.

About EchoInsight ZF

EchoInsight ZF makes it easy to incorporate echo strain imaging into routine clinical practice. As a fast, convenient, and integrated vendor neutral platform, EchoInsight ZF can be easily accessed directly from your CVIS reading environment or on any device with a web browser. EchoInsight ZF offers intuitive and reliable clinical strain imaging applications for improved echo analysis, interpretation, and patient monitoring covering a wide variety of indications across echo programs.

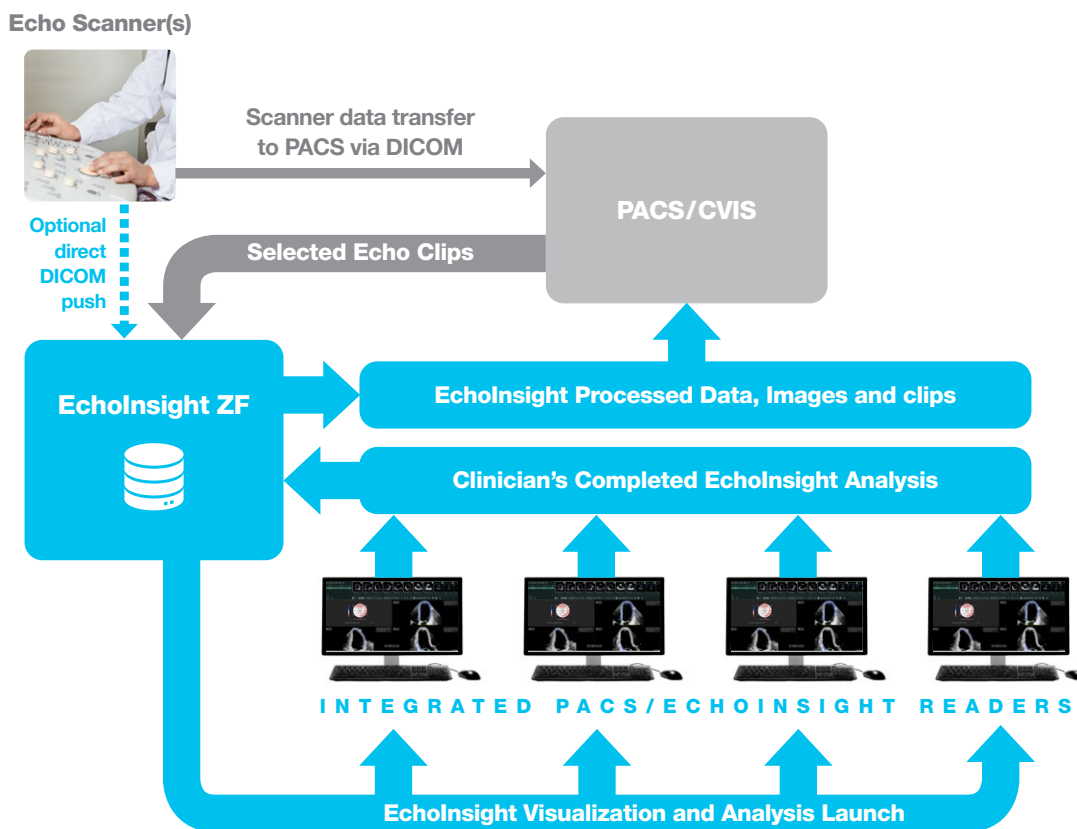
Features include:

- An integrated, zero footprint solution to enable a seamless and highly efficient workflow enabling users to read from any workstation (No software loaded on client workstations)
- Clinical strain imaging for improved confidence in assessment and monitoring of wall mechanics
- Easy to use features and clinical applications for fast analysis
- Automated cardiac function measurements for increased efficiency and standardization based on ASE guidelines
- Vendor neutral platform for standardization of analysis across a diverse fleet of US machines
- Integrated strain and cardiac function measurements with CVIS reporting packages
- Highly scalable deployment architecture to meet customer needs

Advance your echo program by taking strain imaging offline and expand the benefits to better manage your patient community. Visit epsilon-imaging.com.

1. ASE COVID-19 resource page. ASE Statement on COVID-19 (asecho.org)

How EchoInsight Works



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