Angiography Technique Integrates Blood Flow Information

WARF: P150237US01

Inventors: Charles Mistretta, Charles Strother

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a method to provide high quality angiographic images with flow and velocity information.

Overview

A primary goal of angiography since inception has been to provide diagnostic images of the vasculature while reducing invasiveness. A method called 4-D DSA (digital subtraction angiography) was developed by UW–Madison researchers to generate time-resolved, 3-D images with outstanding temporal and spatial resolution. The system provides clinicians with more accurate information about the structure and anatomy of blood vessels.

But while anatomical information has improved, circulatory information continues to lag. Assessing blood flow and velocity requires a clinician to visually track a contrast bolus as it passes through the vasculature. Even the best deductions are qualitative and thus inherently limited.

The Invention

The researchers have now developed a method for integrating flow information with 4-D DSA images. The method involves generating a series of 3-D time-resolved vascular volumes and calculating blood velocity by tracking a contrast agent.

Applications

- Angiography
- Calculating absolute local flow, velocity changes following stenosis, etc.
- Clinical indications include aneurysm, vascular malformation and nidus AVMs.

Key Benefits

- Couples high quality imaging and flow information
- Quantitative

Stage of Development

Prototyping.

Additional Information

For More Information About the Inventors

- Charles Mistretta
- Charles Strother

Related Technologies

- WARF reference number P150083US01 describes a method that combines 4-D DSA with other imaging modalities such as MRI or ultrasound to provide physiological information.
- WARF reference number P110289US01 describes the researcher's method for ultra-high frame rate, time-resolved, 4-D MRA.

Tech Fields

- Medical Imaging : X-ray

For current licensing status, please contact Jeanine Burmania at jeanine@warf.org or 608-960-9846