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New Laser May Identify Deadly Plaques
Fatty Buildups Pose Heart Dangers

Boston, Mass. -- August 5, 2005 -- They have been called a ticking time bomb, and some doctors say they're a bigger risk for heart attacks than clogged arteries.

NewsCenter 5's Liz Brunner reported Thursday that plaques are fatty buildups within the coronary artery wall that can rupture and lead to a heart attack.

Now, researchers at Harvard and Mass General Hospital have created a new laser technique they say can identify these potentially fatal plaques.

Joseph Fama suffered his second heart attack in April -- four years after his first.

"I had a 100-percent blocked artery. It was very severe, and I was lucky," he said.

His doctors compared his angiogram following the first heart attack in 2001 -- showing a perfectly normal artery -- to his most recent one.

"When we did the angiogram, we found out one of the normal looking coronary arteries in 2001 was totally blocked," Dr. Ik-Kyung Jang said.

Vulnerable plaque was to blame. They are fatty buildups within the coronary artery wall isolated by a thin fibrous layer called a cap. Inflamed cells can eat away at the cap, which can create a clot that blocks the flow of blood to the heart and can lead to a heart attack.

"With current technology, we cannot distinguish vulnerable plaque from more stable plaque," Jang said.

But that may soon change. Researchers at Mass General are developing what's called Laser Speckle Imaging to identify vulnerable plaques before they become dangerous.

"The laser speckle imaging works by shining a single wavelength of light onto a plaque and looking at how the pattern you detect changes over time," Mass General researcher Gary Tearney said.

The laser is inserted into the patient's body through a catheter. A not moving or thick pattern signifies stable plaque. A flickering or thin pattern means the plaque is vulnerable.

"We think this technology will help us identify those plaques that are more likely to cause a heart attack, so that we can prevent that from happening," Tearney said.

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