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## REUTERS

Science

### Elastic ring shows promise as heart failure treatment in animal model

by Anthony J. Brown, MD

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Last Updated: 2007-10-22 17:00:13 -0400 (Reuters Health)

NEW YORK (Reuters Health) - Placing an elastic ring around the equatorial site within the left ventricle (LV) can improve the mechanics of acute LV dysfunction, according to the results of an animal study. This could have important treatment implications for the millions of patients with end-stage heart failure, the researchers say.

Decreased elasticity is known to occur in failing hearts, which can result in mechanical dysfunction, lead author Dr. Paolo Ferrazzi, from Ospedali Riuniti in Bergamo, Italy, and colleagues note in the Journal of the American College of Cardiology for October 30.

To his knowledge, Dr. Ferrazzi told Reuters Health, "This is the first time that it has been demonstrated that left ventricular dysfunction can be reversed by restoring the cardiac elasticity."

The researchers implanted an endoventricular elastic ring in 6 sheep with experimentally induced LV dysfunction. Seven untreated sheep with dysfunction served as controls.

The ring consists of a circular torsional steel spring attached to Dacron fabric that allows it to be sutured to the inner ventricular surface. The authors found that ring implantation was associated with significant improvements in cardiac contractility as well as in systolic and early diastolic function. Moreover, no negative effect on late diastolic function was noted.

The findings "raise new intriguing pathophysiologic issues, such as whether therapies using multiple passive elastic devices implanted at different levels of LV, aiming to achieve a complete elastic restoration of a failing heart, would improve the natural history of heart failure," the researchers conclude.

The next step, according to Dr. Ferrazzi, "will be to translate these insights from the bench to bedside. Moreover, an elastic mitral ring, with the same properties, is currently under investigation for the treatment of ischemic mitral regurgitation."

J Am Coll Cardiol 2007;50:1791-1798.

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