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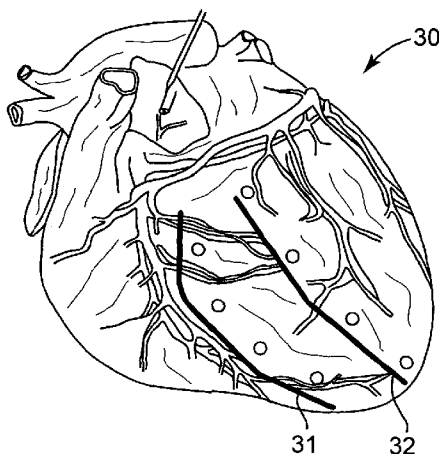
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(54) Title: INTRAMYOCARDIAL PATTERNING FOR TREATING LOCALIZED ANOMALIES OF THE HEART



(57) Abstract: Cardiomyopathy may be treated by distributing space-occupying agent within the myocardium in a pattern about one or more chambers of the heart, such that the space-modifying agent integrates into and thickens at least part of the cardiac wall about the chamber so as globally to reduce wall stress and stabilize or even reduce chamber size. Some patterns also cause a beneficial global reshaping of the chamber. These changes occur quickly and are sustainable, and have a rapid and sustainable therapeutic effect on cardiac function. Over time the relief of wall stress reduces oxygen consumption and promotes healing. Moreover, various long-term therapeutic effects may be realized depending on the properties of the space-occupying agent, including combinations with other therapeutic materials. Specific cardiac conditions treatable by these systems and methods include, for example, dilated cardiomyopathy (with or without overt aneurismal formations), congestive heart failure, and ventricular arrhythmias, myocardial infarctions, myocardial infarctions, and mitral regurgitation.

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27. The method of claim 23 wherein the pattern is similar to a pattern used for a Corridor procedure.

28. A kit for treating a heart having a myocardium, comprising:

means for establishing a pattern of intramyocardial supportive regions for encompassing a area of a heart disorder and portions of surrounding normal tissue of the myocardium; and

means for introducing biocompatible material into the myocardium in accordance with the pattern and to a therapeutically effective extent to form the intramyocardial supportive regions.

29. A kit for treating a heart having a myocardium, comprising:

means for establishing a pattern of intramyocardial supportive regions for treating a structure of the heart, the pattern encompassing at least part of the area of the heart structure; and

means for introducing biocompatible material into the myocardium in accordance with the pattern and to a therapeutically effective extent to form the intramyocardial supportive regions.

30. Use of a source of biocompatible space-occupying agent that is effective for thickening a myocardial wall; for the preparation of a medicament for treating a localized anomaly in a heart by delivery thereof in a therapeutically effective amount into the myocardial wall in proximity to the localized anomaly to establish a pattern of intramyocardial supportive regions for the localized anomaly at a predetermined depth in the myocardial wall, the pattern being aligned with muscle fibers of normal tissue of the myocardial wall at the predetermined depth.

31. Use as in claim 30 wherein:

the medicament is an injectate; and

the pattern of intramyocardial supportive regions is a plurality of injection sites at the predetermined depth in the myocardium.

32. Use as in claim 31 wherein the space-occupying agent consists essentially of an injectable non-living material.

33. Use as in claim 31 wherein the space-occupying agent comprises a non-living material in combination with living cells, growth factors, peptides, proteins, or any combination thereof.

34. Use as in claim 30 wherein:

the medicament is an implantable; and

the pattern of intramyocardial supportive regions is a plurality of implant sites at the predetermined depth in the myocardium.

35. A source of biocompatible space-occupying agent that is effective for thickening a myocardial wall, for use as a medicament for treating a localized anomaly in a heart by delivery thereof in a therapeutically effective amount into the myocardial wall in proximity to the localized anomaly to establish a pattern of intramyocardial supportive regions for the localized anomaly at a predetermined depth in the myocardial wall, the pattern being aligned with muscle fibers of normal tissue of the myocardial wall at the predetermined depth.

36. Use as in claim 35 wherein:

the medicament is an injectate; and

the pattern of intramyocardial supportive regions is a plurality of injection sites at the predetermined depth in the myocardium.

37. Use as in claim 36 wherein the space-occupying agent consists essentially of an injectable non-living material.

38. Use as in claim 36 wherein the space-occupying agent comprises a non-living material in combination with living cells, growth factors, peptides, proteins, or any combination thereof.

39. Use as in claim 35 wherein:

the medicament is an implantable; and

the pattern of intramyocardial supportive regions is a plurality of implant sites at the predetermined depth in the myocardium.