

Claims

1. A connecting structure of a stent and a valve leaflet for interventional pulmonary valves and interventional aortic valves, wherein the stent is a metal mesh tube, the valve leaflets are three fan-shaped valve leaflets arranged on the inner side of the stent, each of the three fan-shaped valve leaflets is provided with a free edge, an arc-shaped bottom edge and valve leaflet junction connecting parts extending in radial direction continuously on two sides, characterized in that three connecting posts are uniformly distributed on the metal mesh tube, and the junction connecting parts on the two sides of each valve leaflet are folded in radial direction on the inner side of each connecting post to form a cushioning portion, and then are connected and fixed to the connecting posts through sutures.
2. The connecting structure of the stent and the valve leaflet for interventional pulmonary valves and interventional aortic valves of claim 1, characterized in that double columns of holes or double columns of rectangular frames are arranged on the each connecting post, the number of the holes is four to eight, and the number of the rectangular frames is two or four.
3. The connecting structure of the stent and the valve leaflet for interventional pulmonary valves and interventional aortic valves of claim 2, characterized in that the junction connecting part is folded once or twice to form the cushioning portion and connected and fixed to the hole or the rectangular frame of the connecting post through sutures.
4. The connecting structure of the stent and the valve leaflet for interventional pulmonary valves and interventional aortic valves of claim 1, characterized in that the material of the stent is an implantable alloy material, the implantable alloy material is a cobalt-based alloy, a nickel-titanium alloy or a stainless steel material, and the material of the valve leaflet is an animal-derived tissue material or a medical polymer material.
5. An interventional pulmonary valve employing the connecting structure of the stent and the valve leaflet of any one of claims 1-4, comprising a stent being radially compressible and self-expandable with two ends in a uniform cylindrical flaring shape, three fan-shaped valve leaflets arranged on the inner side of the stent, wherein the three fan-shaped valve leaflets are respectively provided with a free edge, an arc-shaped bottom edge and valve leaflet junction connecting parts extending in radial

direction continuously on the two sides, characterized in that the stent is a metal mesh tube, three connecting posts are uniformly distributed on the metal mesh tube; and the junction connecting parts on the two sides of each valve leaflet are folded in radial direction on the inner side of each connecting post to form a cushioning portion, then are connected and fixed to the connecting posts through sutures, and a coating membrane is arranged on the wall body of the stent.

6. The interventional pulmonary valve of claim 5, characterized in that the stent is provided with a plurality of columns of axial supporting rods arranged between the connecting posts, six rows of transversely extending circumferential supporting rods are arranged between the connecting posts and the axial supporting rods, the lower first, second and third rows of circumferential supporting rods define an inflow end of the stent, the fourth, fifth and sixth rows of circumferential supporting rods define an outflow end of the stent, and each row of circumferential supporting rods consists of a plurality of groups of angular supporting rods connected together; each group of supporting rods is in the shape of a deformable V, the deformation angle is 0-90 degrees, each row of circumferential supporting rods and a plurality of columns of axial supporting rods form a plurality of rows of rhombic or honeycomb grids, and the coating membrane on the body wall of the stent is sewn to the grids in the middle row of the stent.

7. The interventional pulmonary valve of claim 5, characterized in that an angle between the outer edge of ~~the-a~~ balloon-expanded stent and ~~the-its~~ axis thereof is between 0° and 30°.

8. An interventional aortic valve employing the connecting structure of the stent and the valve leaflet of any one of claims 1-4, comprising a stent that can be radially compressible and in a slightly flaring shape after being expanded by a balloon, three fan-shaped valve leaflets arranged on the inner side of the stent, wherein the three fan-shaped valve leaflets are respectively provided with a free edge, an arc-shaped bottom edge and valve leaflet junction connecting parts extending in radial direction continuously on the two sides, characterized in that the stent is a metal mesh tube, and three connecting posts are uniformly distributed on the metal mesh tube; and the junction connecting parts on the two sides of each valve leaflet are folded in radial direction on the inner side of each connecting post to form a cushioning portion, then are connected and fixed to each of the connecting posts through sutures, and a coating membrane is arranged on the body wall of the stent.

9. The interventional aortic valve of claim 8, characterized in that the stent is provided

with a plurality of columns of axial supporting rods arranged between the connecting posts, three rows of transversely extending circumferential supporting rods are arranged between the connecting posts and the axial supporting rods, the lower first row of circumferential supporting rods define an inflow end of the stent, the second row of circumferential supporting rods and the third row of circumferential supporting rods spaced from the first row define an outflow end of the stent, and each row of circumferential supporting rods consists of a plurality of groups of angular supporting rods connected together; each group of supporting rods is in the shape of a deformable V, the deformation angle is 0-90 degrees, each group of circumferential supporting rods in the first row and the second row are arranged in parallel and opposite to the direction of each group of circumferential supporting rods in the third row, and the coating membrane on the body wall of the stent is sewn between the first row of circumferential supporting rods and the second row of circumferential supporting rods.

10. The interventional aortic valve of claim 8, characterized in that the stent is provided with four rows of transversely extending circumferential supporting rods and a plurality of columns of axial supporting rods arranged between the circumferential supporting rods, wherein the lower first and second row of circumferential supporting rods define an inflow end of the stent, the third and fourth row of circumferential supporting rods define an outflow end of the stent, each row of circumferential supporting rods consists of a plurality of groups of angular supporting rods connected together, and each group of supporting rods is in a deformable V shape; the deformation angle is 0-90 degrees, the plurality of columns of axial supporting rods and the plurality of groups of circumferential supporting rods are mutually connected to form a honeycomb space, and the coating membrane on the body wall of the stent is sewn between the first row of circumferential supporting rods and the third row of circumferential supporting rods.

11. The interventional aortic valve of claim 8, characterized in that a coating membrane is sewn between the first row of circumferential supporting rods and the second row of circumferential supporting rods outside the body wall of the stent.

12. The interventional aortic valve of claim 8, characterized in that the angle between the outer edge of ~~the~~a balloon-expanded stent and ~~the~~its axis thereof is between 0° and 30°.