handle placement of a stent into a tubular organ of small diameter of around 2 mm, a result of which there has been a risk of damaging a body tissue.

In order to solve such problems, a spiral stent has been devised as a technology exhibiting high flexibility while being a stent having a closed cell structure (for example, refer to Japanese Unexamined Patent Application (Translation of PCT Publication), Publication No. 2010-535075.) The stent disclosed in Japanese Unexamined Patent Application (Translation of PCT Publication), Publication No. 2010-535075 includes spiral circular bodies having a wavy-line pattern and coiled elements connecting adjacent circular bodies in an expanded state.

Patent Document 1: Japanese Unexamined Patent Application (Translation of PCT Publication), Publication No. 2010-535075

Summary

According to a first aspect, a highly flexible stent is provided comprising:

a plurality of wavy-line pattern bodies having a wavy-line pattern and arranged side-by-side in an axial direction; and

a plurality of coiled elements arranged between the wavy-line pattern bodies that are adjacent and extending in a spiral manner around an axis,

wherein all apices on opposite sides of the wavy-line pattern of the wavy-line pattern bodies that are adjacent are connected by way of the coiled elements,

wherein, when viewing in a radial direction perpendicular to the

axial direction, a circular direction of the wavy-line pattern bodies is inclined with respect to the radial direction, and

wherein a winding direction of one of the coiled elements located at one side in the axial direction with respect to the wavy-line pattern bodies and a winding direction of one other of the coiled elements located at the other side in the axial direction are opposite, a result of which a deformation amount in the radial direction of the stent with respect to a distortion load is suppressed.

DISCLOSURE OF THE INVENTION

Problems to be Solved by the Invention

However, after a stent has been placed in a superficial femoral artery, for example, inner and outer rotational actions of a femoral area cause inner and outer rotations of a blood vessel. The stent in the blood vessel thereby is also distorted in an inner rotational direction and an outer rotational direction. However, in Japanese Unexamined Patent Application (Translation of PCT Publication), Publication No. 2010-535075, since the deformed form of a stent differs depending on a direction in which the stent is distorted,

CLAIMS

1. A highly flexible stent comprising:

a plurality of wavy-line pattern bodies having a wavy-line pattern and arranged side-by-side in an axial direction; and

a plurality of coiled elements arranged between the wavy-line pattern bodies that are adjacent and extending in a spiral manner around an axis,

wherein all apices on opposite sides of the wavy-line pattern of the wavy-line pattern bodies that are adjacent are connected by way of the coiled elements,

wherein, when viewing in a radial direction perpendicular to the axial direction, a circular direction of the wavy-line pattern bodies is inclined with respect to the radial direction, and

wherein a winding direction of one of the coiled elements located at one side in the axial direction with respect to the wavy-line pattern bodies and a winding direction of one other of the coiled elements located at the other side in the axial direction are opposite.

2. The highly flexible stent according to claim 1, wherein

an angle at which the circular direction of the wavy-line pattern bodies inclines with respect to the radial direction is 30° to 60°.

3. The highly flexible stent according to claim 1 or 2,

wherein the wavy-line pattern bodies form a circular body by connecting, in a circumferential direction, a plurality of waveform elements of substantially V-shape made by coupling two leg portions at an apex, and

wherein the length of the one of the coiled elements is longer than the length of the leg portion and the length of

the one other of the coiled elements is shorter than the length of the leg portion.

4. The highly flexible stent according to claim 3, wherein

the length of the one of the coiled elements is no more than 1.5 times the length of the leg portion.

5. The highly flexible stent according to claim 1 or 2, wherein

the wavy-line pattern bodies are non-continuous in a circumferential direction and do not form a circular body, and have a shape in which one or a plurality of struts that constitutes the wavy-line pattern bodies is omitted, as compared with the wavy-line pattern bodies that form a circular body.

6. The highly flexible stent according to one of claims 1 to 5, wherein

a cross sectional shape is a substantially triangular shape.

CLAIMS

1. A highly flexible stent comprising:

a plurality of wavy-line pattern bodies having a wavy-line pattern and arranged side-by-side in an axial direction; and

a plurality of coiled elements arranged between the wavy-line pattern bodies that are adjacent and extending in a spiral manner around an axis,

wherein all apices on opposite sides of the wavy-line pattern of the wavy-line pattern bodies that are adjacent are connected by way of the coiled elements,

wherein, when viewing in a radial direction perpendicular to the axial direction, a circular direction of the wavy-line pattern bodies is inclined with respect to the radial direction, and

wherein a winding direction of one of the coiled elements located at one side in the axial direction with respect to the wavy-line pattern bodies and a winding direction of one other of the coiled elements located at the other side in the axial direction are opposite, a result of which a deformation amount in the radial direction of the stent with respect to a distortion load is suppressed.

2. The highly flexible stent according to claim 1, wherein

an angle at which the circular direction of the wavy-line pattern bodies inclines with respect to the radial direction is 30° to 60°.

3. The highly flexible stent according to claim 1 or 2,

wherein the wavy-line pattern bodies form a circular body by connecting, in a circumferential direction, a plurality of waveform elements of substantially V-shape made by coupling two leg portions at an apex, and

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4. The highly flexible stent according to claim 3, wherein

the length of the one of the coiled elements is no more than 1.5 times the length of the leg portion.

5. The highly flexible stent according to claim 1 or 2, wherein

the wavy-line pattern bodies are non-continuous in a circumferential direction and do not form a circular body, and have a shape in which one or a plurality of struts that constitutes the wavy-line pattern bodies is omitted, as compared with the wavy-line pattern bodies that form a circular body.

6. The highly flexible stent according to one of claims 1 to 5, wherein

a cross sectional shape is a substantially triangular

shape.