Claims

1. Device for the introduction of an implant into blood vessels of the human body, said device comprising an implant, a pusher or insertion wire, and a tube-like sheathing, wherein the implant is capable of being deformed inside a microcatheter in a manner that allows it to assume a shape of reduced diameter and, after omission of such external constraint exerted by the microcatheter, expand at the placement site and adapt to the blood vessel diameter, and wherein the implant is provided at the proximal end with connection elements attaching it to a retaining element by means of which the implant is coupled to the pusher wire, and wherein the retaining element is provided with peripheral cutouts into which the connecting elements are fitted, with the tube-like sheathing being drawn in a form-closed manner over the retaining element with fitted connection elements such that the connection elements are secured within the cutouts of the retaining element and the implant is released by the retraction of the tube-like sheathing in proximal direction,
wherein the outer diameter of the tube-like sheathing varies between the proximal end and the distal end, and
wherein the device further comprises a distal section of the tube-like sheathing, an adjacently arranged middle section of small outer diameter extending in proximal direction, and a proximal section of large outer diameter arranged adjacent to the middle section and extending in proximal direction.

2. Device according to claim 1, wherein the outer diameter of the tube-like sheathing is larger in the distal section than in the middle section.

3. Device according to claim 1 or 2, wherein a proximal end of small outer diameter adjoins the proximal section of the tube-like sheathing in proximal direction.

4. Device according to any of claims 1 to 3, wherein in the sections of the tube-like sheathing of large outer diameter the wall thickness of sheathing is greater than in the sections of small outer diameter.

5. Device according to any of claims 1 to 4, wherein the tube-like sheathing is of one-piece design and obtained in such a way that based on a sheathing of uniform outer diameter and constant wall thickness said outer diameter and the wall thickness are reduced by the removal of material in partial sections, in particular in the middle section.

6. Device according to any of claims 1 to 4, wherein the tube-like sheathing comprises a plurality of parts and is obtained in such a manner that at least one partial section of the sheathing of small outer diameter is connected to partial sections of the sheathing of large outer diameter.

7. Device according to claim 6, wherein the partial sections of sheathing are connected by adhesive bonding.

8. Device according to claim 6 or 7, wherein a layer of the sheathing of small wall thickness extends up to the proximal end of sheathing and, in the proximal and/or distal section, is enwrapped by and attached to an outer layer of the sheathing.

9. Device according to any of claims 1 to 8, wherein the diameter of the pusher wire varies over its length.

10. Device according to claim 9, wherein the average diameter of the pusher wire is smaller in the distal half than in the proximal half.

11. Device according to any of claims 1 to 10, wherein the distal end of the pusher wire extends further distally than the distal end of the implant in a state fixed in the retaining element.

12. Device according any of claims 1 to 11, wherein the implant has a wall composed of individual filaments intersecting with one another and forming a tubular braiding.

13. Method for the manufacture of a tube-like sheathing to be employed in combination with a device according to any of claims 1 to 12, wherein based on a sheathing of uniform outer diameter and constant wall thickness said outer diameter and the wall thickness are reduced by the removal of material in partial sections, in particular in the middle section.

14. Method for the manufacture of a tube-like sheathing to be employed in combination with a device according to any of claims 1 to 12, wherein at least one partial section of the sheathing of small outer diameter is connected to partial sections of the sheathing of large outer diameter, in particular by adhesive bonding.