

Claims

1. Implant having a mesh structure (3, 4) to be used for the occlusion of aneurysms in the area of vessel branches, particularly bifurcation aneurysms (A), which – from proximal to distal – is provided with sections (b) to (d):

5 (b) a fixation section by means of which the implant can be supported on a vessel wall,

 (c) a permeable section for the vessel branching area, and

 (d) a distal section where in comparison with section (b) the implant is expanded radially and which is meant to be placed into the aneurysm (A),

10 wherein in the area of sections (c) or (d) a separation zone (T1, T2) is arranged that closes off the neck of the aneurysm, the distal section (d) being provided with a plurality of loops (12) consisting of wire elements starting from section (c), then forming a loop and returning to section (c) and said loops (12) forming an angle of between -45° and $+175^{\circ}$ in relation to the longitudinal axis of the im-
15 plant (1), wherein a positive angle is indicative of loops pointing radially outward and a negative angle of loops (12) pointing radially inward,

 wherein the separation zone (T1, T2) is provided with one or more membranes (24),

 wherein the loops (12) are provided inside with one or more membranes
20 (16) and membranes (16) are also arranged in the spaces between the loops (12), and

wherein the membranes (16, 24) are impermeable to blood.

2. Implant according to claim 1, characterized in that the one or more membranes (24) of the separation zone (T1, T2) span orthogonally to the longitudinal axis of the implant (1).

5 3. Implant according to claim 2, characterized in that the one or more membranes (24) are secured to filaments (6) arranged in the separation zone (T1, T2).

4. Implant according to any of claims 1 to 3, characterized in that the one or more membranes (24) extend in proximal direction and, preferably, have a
10 conical or pyramid form.

5. Implant according to any of claims 1 to 4, characterized in that the one or more membranes (24) have one or several openings (25) or that in the membranes (24) one or several openings can be produced by a piercing method.

6. Implant according to any of claims 1 to 5, characterized in that the
15 loops (12) form an angle of between $+45^\circ$ and $+90^\circ$ in relation to the longitudinal axis of the implant (1).

7. Implant according to any of claims 1 to 6, characterized in that the loops (12) in the distal section (d) are provided with eyelets (17).

8. Implant according to any of claims 1 to 7, characterized in that the
20 loops (12) in the distal section (d) are provided with rounded spouts (18) at the distal end.

9. Implant according to any of claims 1 to 8, characterized in that the loops (12) are attached to section (c) by means of individual, in particular one or two connecting points.

10. Implant according to any of claims 1 to 9, characterized in that the implant (1) proximal to section (b) is provided with a section (a), wherein said section (a) is a tapering proximal section in which the mesh structure (3, 4) is brought together in the form of one or several coupling elements (10), preferably
5 coupling wires.

11. Implant according to claim 10, characterized in that the coupling elements (10) are brought together eccentrically on the periphery of the implant (1) in its expanded form.

12. Implant according to claim 11, characterized in that the coupling el-
10 ements (10), preferably coupling wires, form an angle ranging between 0° and $+60^\circ$, preferably $+10$ to $+30^\circ$, in relation to the longitudinal axis of the implant (1), with a positive angle being indicative of coupling elements (10) pointing outward.

13. Implant according to any of claims 1 to 12, characterized in that the separation zone (T1, T2) is provided with separation elements consisting of fila-
15 ments (6) arranged orthogonally to the longitudinal axis of the implant (1), preferably extending substantially in a plane.