

Claims

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

(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

10 (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),

wherein in the area of sections (c) or (d) a separation zone (T1, T2) is arranged that closes off at least partially the neck of the aneurysm, the distal section (d) being provided with a plurality of filaments and/or loops (12) connecting
 15 to section (c) and at least some of said filaments/loops (12) forming an angle of between -45° and $+175^\circ$, $+90^\circ$ and $+135^\circ$, and/or $+135^\circ$ and $+175^\circ$ in relation to the longitudinal axis of the implant (1), wherein a positive angle is indicative of filaments/loops pointing radially outward and a negative angle of filaments/loops (12) pointing radially inward.

20 ~~2. Implant according to claim 1, characterized in that the filaments/loops (12) form an angle of between $+45^\circ$ and $+90^\circ$ in relation to the longitudinal axis of the implant (1).~~

32. Implant according to claim ~~1 or 2~~, characterized in that the filaments/loops (12) in the distal section (d) are provided with eyelets (17).

43. Implant according to ~~any one of~~ claims 1 ~~to~~ 32, characterized in that the filaments/loops (12) in the distal section (d) are provided with rounded spouts (18) at the distal end.

54. Implant according to any one of claims 1 to 43, characterized in that the loops (12) are provided inside with a membrane (16) or that a membrane (16) is spanned between the filaments.

65. Implant according to any one of the claims 1 to 54, characterized in that the filaments/loops (12) are attached to section (c) by means of individual, in particular one or two connecting points.

76. 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):

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

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

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

wherein in the area of sections (c) or (d) a separation zone (T1, T2) is arranged that at least partially closes off the neck of the aneurysm, with said distal section (d) taking on an enlarged shape similar to a ~~sphere~~, mushroom, anchor or ellipsoid.

87. Implant according to any one of the claims 1 to 76, 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 coupling wires.

5 98. Implant according to claim 87, characterized in that the coupling elements (10) are brought together eccentrically on the periphery of the implant (1) in its expanded form.

10 109. Implant according to claim 98, characterized in that the coupling elements (10), preferably coupling wires, form an angle ranging between 0° and +60°, preferably +10 to +30°, in relation to the longitudinal axis of the implant (1), with a positive angle being indicative of coupling elements (10) pointing outward.

15 110. Implant according to any one of claims 1 to 109, characterized in that the separation zone (T1, T2) is provided with separation elements consisting of filaments (6) arranged orthogonally to the longitudinal axis of the implant (1), preferably extending substantially in a plane.

121. Implant according to any one of claims 1 to 110, characterized in that the separation zone (T1, T2) is provided with a membrane (24) spanning orthogonally to the longitudinal axis of the implant (1).

20 132. Implant according to claim 112, characterized in that the membrane (24) is secured to filaments (6) arranged in the separation zone (T1, T2).

143. Implant according to claim 121 or 132, characterized in that the membrane (24) extends in proximal direction and, preferably, has a conical or pyramid form.

25 154. Implant according to any one of the claims 121 to 143, characterized in that the membrane (24) has one or several openings (25) or that in the membrane (24) one or several openings can be produced by a piercing method.