



US005354295A

United States Patent [19]

Guglielmi et al.

[11] Patent Number: 5,354,295

[45] Date of Patent: * Oct. 11, 1994

[54] **IN AN ENDOVASCULAR ELECTROLYTICALLY DETACHABLE WIRE AND TIP FOR THE FORMATION OF THROMBUS IN ARTERIES, VEINS, ANEURYSMS, VASCULAR MALFORMATIONS AND ARTERIOVENOUS FISTULAS**

4,735,201	4/1988	O'Reilly .	
4,748,986	6/1988	Morrison	128/772
4,820,298	4/1989	Leveen et al. .	
4,994,069	2/1991	Ritchart et al. .	
5,108,407	4/1992	Geremia et al. .	
5,122,136	6/1992	Guglielmi et al.	606/32

[75] Inventors: **Guido Guglielmi**, Santa Monica; **Ivan Sepetka**, Redwood City, both of Calif.

FOREIGN PATENT DOCUMENTS

8801851	3/1988	World Int. Prop. O.	606/49
---------	--------	--------------------------	--------

[73] Assignees: **Target Therapeutics, Inc.**, Fremont, Calif.; **The Regents of the University of California**, Oakland, Calif.

Primary Examiner—Lee S. Cohen
Attorney, Agent, or Firm—Dawes, Daniel L.

[*] Notice: The portion of the term of this patent subsequent to Jun. 16, 2009 has been disclaimed.

[57] ABSTRACT

[21] Appl. No.: 840,211

An artery, vein, aneurysm, vascular malformation or arterial fistula is occluded through endovascular occlusion by the endovascular insertion of a platinum wire and/or tip into the vascular cavity. The vascular cavity is packed with the tip to obstruct blood flow or access of blood in the cavity such that the blood clots in the cavity and an occlusion is formed. The tip may be elongate and flexible so that it packs the cavity by being folded upon itself a multiple number of times, or may pack the cavity by virtue of a filamentary or fuzzy structure of the tip. The tip is then separated from the wire mechanically or by electrolytic separation of the tip from the wire. The wire and the microcatheter are thereafter removed leaving the tip embedded in the thrombus formed within the vascular cavity. Movement of wire in the microcatheter is more easily tracked by providing a radioopaque proximal marker on the microcatheter and a corresponding indicator marker on the wire. Electrothrombosis is facilitated by placing the ground electrode on the distal end of the microcatheter and flowing current between the microcatheter electrode and the tip.

[22] Filed: Feb. 24, 1992

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 492,717, Mar. 13, 1990, Pat. No. 5,122,136.

[51] Int. Cl.⁵ A61B 17/38; A61B 17/00

[52] U.S. Cl. 606/32; 606/41; 606/108; 606/191

[58] Field of Search 606/32, 41, 45, 28, 606/191, 108, 200; 128/772, 784, 786; 623/1, 12; 604/104

[56] References Cited

U.S. PATENT DOCUMENTS

4,512,338	4/1985	Balko et al. .	
4,522,205	6/1985	Taylor et al.	606/32

24 Claims, 6 Drawing Sheets

