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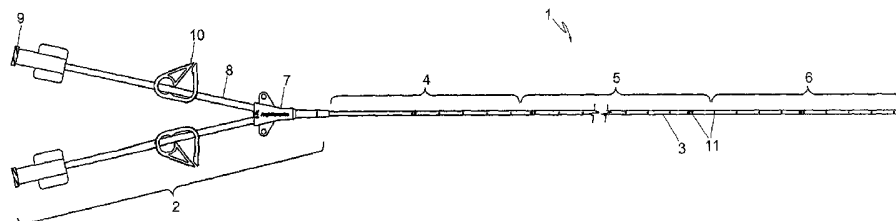
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(54) Title: VARIABLE CHARACTERISTIC VENOUS ACCESS CATHETER



(57) Abstract: A central venous catheter is provided having a proximal tube segment, a distal tube segment and a transition tube segment interposed between the proximal and distal tube segments which are preferably formed as a single integrated tube containing polymer material of different durometer and varying amounts of radiopaque filler material. The polymer durometer of the proximal segment is higher than the polymer durometer of the distal segment. By contrast, the percentage by weight of the filler material contained in the distal segment is higher than that of the proximal segment. The variation in the polymer durometer and the filler amount along the length of the tube provide the desired tensile strength, hardness, chemical resistance and fatigue resistance at the proximal segment and at the same time provide the desired flexibility and radiopacity at the distal segment.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/39040

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) : A61M 25/00
 US CL : 604/525
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 604/ 264,523,525,529; 138/118,120,155

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 East search: catheter, tube , picc, iv, durometer, radiopaque, radiopacity, filler, vary , flexibility

C. DOCUMENTS CONSIDERED TO BE RELEVANT

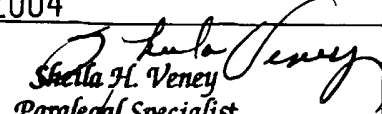
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,542,937 A (CHEE et al.) 06 August 1996, see abstract, see figures 1-3, 5-10, columns 1-4.	1-6,9,16, 18-20,22 ----- 7-8,10-15,17,21
X	US 5,908,413 A (LANGE et al.) 01 June 1999, see abstract, see figures 1-3, see columns 3-6.	1-3,9-11,15
X	US 5,769,830 A (PARKER) 23 June 1998, see abstract , see figures 3-4, see columns 2-6.	1-22
A	US 6,059,769 A (LUNN et al.) 09 May 2000 , see abstract, see figures 1-2,5, columns 1-5.	1-22
Y	US 5,895,378 A (BEREBSTEIN et al.) 20 April 1999, see abstract, see figure 1, columns 2-4.	1-22

Further documents are listed in the continuation of Box C. See patent family annex.

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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

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