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# United States Patent [19]

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**Khosravi et al.**

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[54] **HELICAL MESH ENDOPROSTHESIS AND METHODS OF USE**

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[51] **Int. Cl.**<sup>6</sup> ..... **A61F 2/06**  
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 606/194, 195, 198

### [57] ABSTRACT

A stent comprising a helical mesh coil is provided having a substantially rectangular cross-section and a band width equal to at least one-quarter to one-third of the maximum expanded circumference of the stent. The helical mesh has a multiplicity of openings forming a lattice which preferably provides about 60% open space or more. Alternative embodiments of the helical mesh may include specially designed free ends that preferentially overlap neighboring turns of the coil, to ensure that the free ends of the stent do not project into the body lumen, and integrally formed barbs that induce a ratcheting effect that ensures that the stent resists localized compressive forces. Methods of deploying the helical mesh coil stent also provided.

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**21 Claims, 4 Drawing Sheets**

