We Claim

1. A stent graft comprising:

a main body stent graft defining a single lumen and having a distal end and a proximal end;

a first bifurcation in the main body stent graft defining a first lumen and a second lumen, wherein the main body stent graft defines a tubular wall that is contiguous with the first lumen and the second lumen such that any fluid entering the main body stent graft must exit by entering one of the first lumen or the second lumen, wherein the main body stent graft has a diameter at the proximal end in the range from about 28 mm to about 42 mm, wherein the first lumen has a diameter in the range from about 22 mm to about 28 mm and the second lumen has a diameter in the range from about 16 mm to about 22 mm;

a second bifurcation within the first lumen defining a first leg and a second leg, wherein the first leg and the second leg each have a diameter in the range from about 14 mm to about 16 mm;

a third bifurcation within the first leg about 0 mm to about 10 mm distal from the second bifurcation defining a third leg and a fourth leg, wherein the third leg and the fourth leg each have a diameter in the range from about 7 mm to about 12 mm, wherein the third leg and the fourth leg each have a length in the range from about 30 mm to about 50 mm; and

a fourth bifurcation within the second leg between about 10 mm and about 20 mm distal from the second bifurcation defining a fifth leg and a sixth leg, wherein the fifth leg and the sixth leg each have a diameter in the range from about 7 mm to about 12 mm, wherein the third leg and the fourth leg each have a length in the range from about 30 mm to about 50 mm.

2. The stent graft of claim 1, wherein the first lumen has a diameter of about 22 mm.

3. The stent graft of claim 1 or 2, wherein the first bifurcation occurs in the range from about 20 mm to about 30 mm from the proximal end of the main body stent graft.

4. The stent graft of any one of claims 1-3, wherein the second bifurcation occurs in the range from about 30 mm to about 60 mm from the proximal end of the main body stent graft.

5. The stent graft of any one of claims 1-4, wherein the length from the proximal end of the main body stent graft to the distal end of the second lumen is in the range from about 100 mm to about 200 mm.

6. The stent graft of any one of claims 1-4, wherein the length from the proximal end of the main body stent graft to the distal end of the second lumen is about 150 mm.

7. The stent graft of any one of claims 1-6, wherein the first lumen and the second lumen each retain a substantially cylindrical profile.

8. The stent graft of any one of claims 1-7, wherein the main body, the first lumen, the second lumen, the first leg, the second leg, the third leg, the fourth leg, the fifth leg and the sixth leg comprise a single unitary structure.

9. The stent graft of any one of claims 1-8, wherein the first lumen and the second lumen are attached to the distal end of the main body via one of a common graft covering, stitching, adhesive, bonding, or welding.

10. The stent graft of any one of claims 1-9, wherein the first leg and the second leg are attached to the distal end of the first lumen via one of a common graft covering, stitching, adhesive, bonding, or welding.

11. The stent graft of any one of claims 1-10, wherein the third leg and the fourth leg are attached to the distal end of the first leg via one of a common graft covering, stitching, adhesive, bonding, or welding.

12. The stent graft of any one of claims 1-11, wherein the fifth leg and the sixth leg are attached to the distal end of the second leg via one of a common graft covering, stitching, adhesive, bonding, or welding.

13. The stent graft of any one of claims 1-12, wherein the first lumen is secured to the second lumen along a shared length.

14. The stent graft of claim 13, wherein the first lumen and the second lumen are secured together along the shared length via one or more of a common graft covering, stitching, adhesive, bonding or welding.

15. The stent graft of any one of claims 1-14, further comprising:

a cylindrical stent structure disposed on an exterior of the main body stent graft.

16. The stent graft of any one of claims 1-15, further comprising:

a stent valve affixed to the proximal end of the main body stent graft, wherein a free end of the stent valve is covered and a portion of the stent valve extending between the free end and the main body stent graft is uncovered.

~~17. A method for placement of a stent graft, the method comprising:~~

~~introducing a guidewire into an aorta via arterial access;~~

~~loading a delivery catheter containing a stent graft according to any one of claims 1-16 onto the guidewire;~~

~~moving the delivery catheter along the guidewire and introducing the delivery catheter into the aorta via arterial access; and~~

~~deploying the stent graft into the aorta.~~

~~18. The method of claim 17, further comprising:~~

~~introducing a second guidewire into the aorta via arterial access;~~

~~loading a second delivery catheter containing an extender stent graft onto the second guidewire;~~

~~moving the second delivery catheter along the second guidewire and introducing the second delivery catheter into a leg or a lumen of the stent graft via arterial access; and~~

~~deploying a proximal end of the extender stent graft into the leg or the lumen of the stent graft.~~

17. A stent graft comprising:

a main body stent graft defining a single lumen and having a distal end and a proximal end, wherein the main body stent graft has a diameter at the proximal end in the range from about 22 mm to about 28 mm;

a first bifurcation within the single lumen of the main body stent graft defining a first leg and a second leg;

a second bifurcation within the first leg defining a third leg and a fourth leg, wherein the third leg and the fourth leg each have a diameter in the range from about 7 mm to about 12 mm; and

a third bifurcation within the second leg defining a fifth leg and a sixth leg, wherein the fifth leg and the sixth leg each have a diameter in the range from about 7 mm to about 12 mm.

18. The stent graft of claim 17, wherein the first leg and the second leg each have a diameter in the range from about 14 mm to about 16 mm.

19. The stent graft of any one of claims 17-18, wherein the first leg and the second leg each have a length in the range from about 30 mm to about 50 mm.

20. The stent graft of any one of claims 17-19, wherein the first lumen has a diameter of about 24 mm.

21. The stent graft of any one of claims 17-20, wherein the first bifurcation occurs in the range from about 30 mm to about 40 mm from the proximal end of the main body stent graft.

22. The stent graft of any one of claims 17-21, wherein the second bifurcation occurs in the range from about 0 mm to about 10 mm distal from the first bifurcation.

23. The stent graft of any one of claims 17-22, wherein the third bifurcation occurs in the range from about 10 mm to about 20 mm distal from the first bifurcation.

24. The stent graft of any one of claims 17-23, wherein the distance between the second bifurcation and the third bifurcation is at least about 10 mm.

25. The stent graft of any one of claims 17-24, wherein the main body, the first leg, the second leg, the third leg, the fourth leg, the fifth leg and the sixth leg comprise a single unitary structure.

26. The stent graft of any one of claims 17-25, wherein the first leg and the second leg are attached to the distal end of the main body via one of a common graft covering, stitching, adhesive, bonding, or welding.

27. The stent graft of any one of claims 17-26, wherein the third leg and the fourth leg are attached to the distal end of the first leg via one of a common graft covering, stitching, adhesive, bonding, or welding.

28. The stent graft of any one of claims 17-27, wherein the fifth leg and the sixth leg are attached to the distal end of the second leg via one of a common graft covering, stitching, adhesive, bonding, or welding.

29. The stent graft of any one of claims 17-28, further comprising:

a cylindrical stent structure disposed on an exterior of the main body stent graft.