

The '228 Patent

Another object of the present invention as aforesaid is to provide an aortic valve which may be anchored in the ascending aorta by a stent system.

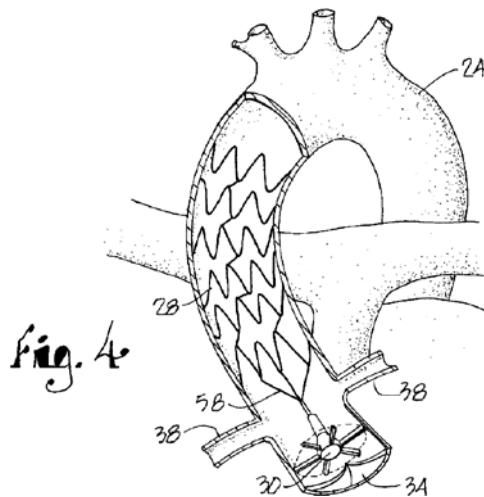
1:29-31

Valve **66** is anchored along the root of the aortic valve with connecting rods **80** which are connected to the ascending aortic stents 28 (see FIG. 4). Valve **66** is placed such that

5:22-24

4) to reduce peri-valvular leaks. Valve **100** is anchored along the root of the aortic valve with connecting rods **104** which are connected to the ascending aortic stents 28 shown in FIG. 4. Valve **100** is placed such that rods **104** are positioned

6:4-7



Excerpted from Ex. 1001 (IPR2014-00111)

The Declaration of Dr. Timothy Catchings

28. The prosthetic aortic valve invented by Dr. Norred has four characteristics that a person of ordinary skill in the art would consider functionally significant.

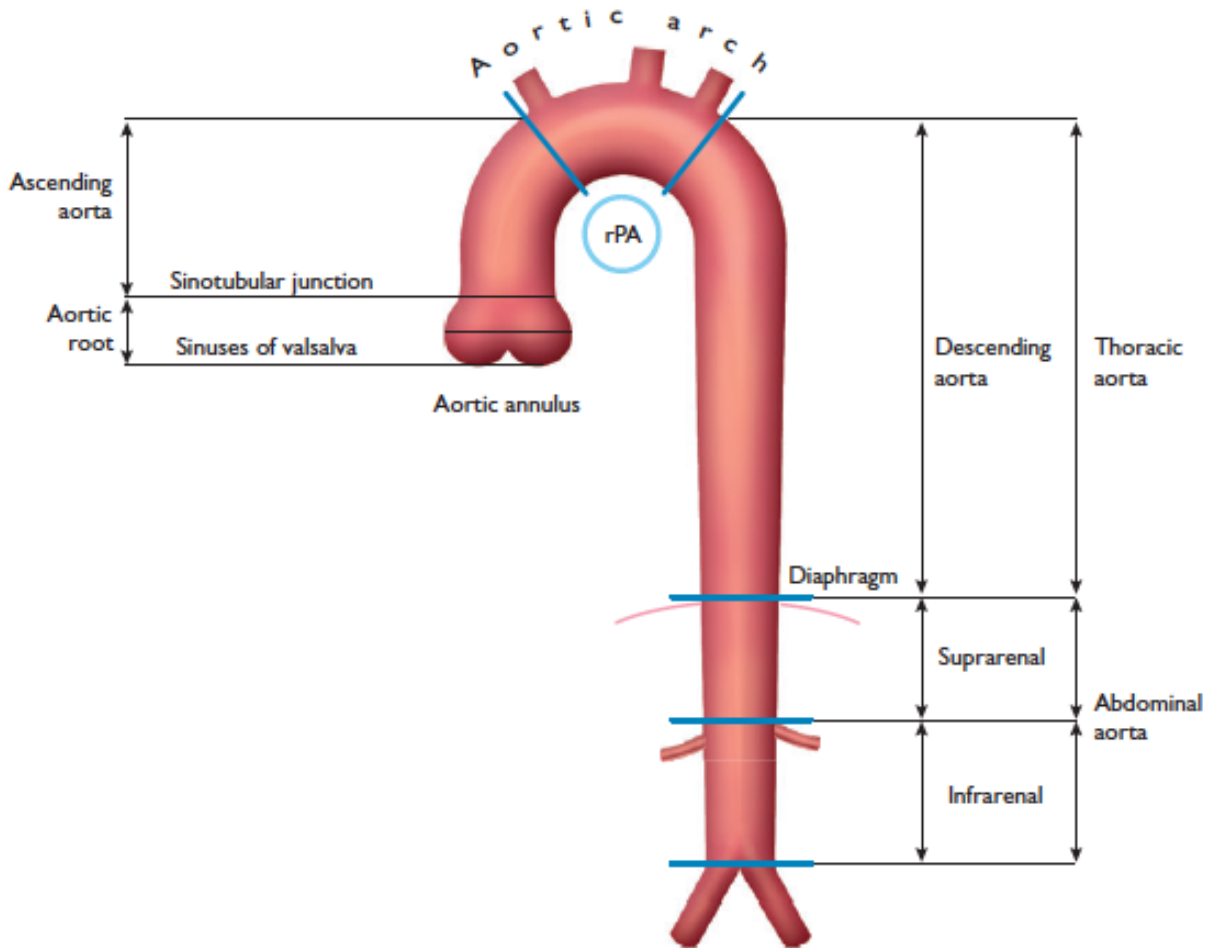
31. Third, the prosthetic aortic valve invented by Dr. Norred contains a stent structure that extends into the ascending aorta. This extended stent structure allows for the circumferential dispersion of force, mimicking the manner in which the native valve disperses force through the leaflets, commissures and sinuses acting in concert with one another. This is important because it reduces the stress and strain on the leaflets, and contributes toward the longevity of the valve. In addition, this extended stent structure makes it significantly easier to place and correctly align the prosthetic valve.

36. I would understand the term “means for maintaining” as used in claim 19 to mean the interconnected rods that form the stent system that extends into the ascending aorta. This is consistent with the specification. The specification provides that stent system 28 is made up of a small, slotted stainless steel tube or series of interconnected rods. *Norred*, 2:60-62. The stent system 28 is depicted in its entirety in Fig. 5. The inflow region of the stent system is depicted in Fig. 18. Rods 104 are shown in Fig. 18 as an integrated part of the stent system 28. *Norred*, 6:4-7.

Excerpted from Ex. 2195 (IPR2014-00111)



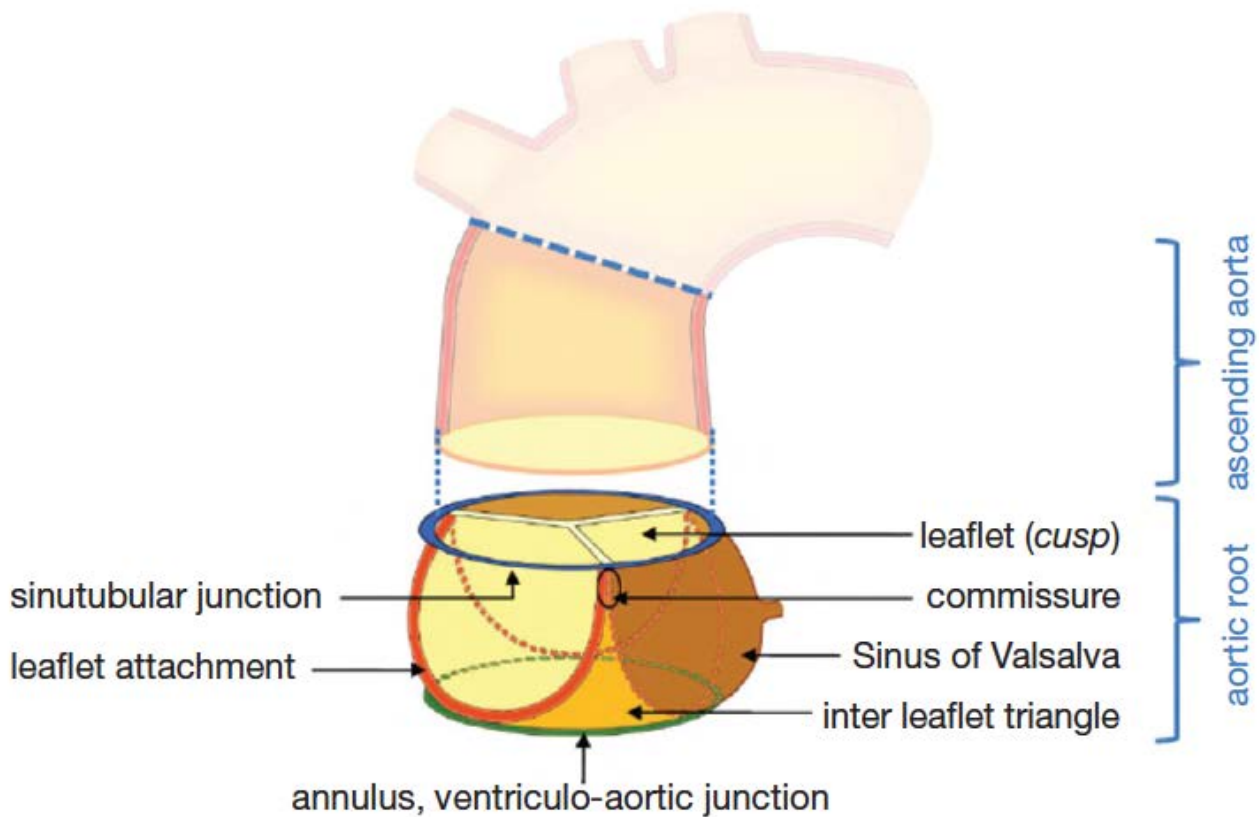
2014 ESC Guidelines on the diagnosis and treatment of aortic diseases



Excerpted from Ex. 2234 (IPR2014-00111)

Anatomy of the aortic root: implications for valve-sparing surgery

Efstratios I. Charitos, Hans-Hinrich Sievers



Excerpted from Ex. 2224 (IPR2014-00111), cited by Alexander Hill, PH.D. in Ex. 1026, ¶ 35 (IPR2014-00111)

Chapter 2

The Anatomy and Function of the Semilunar Valves

Michael G. Bateman, Jason L. Quill, Alexander J. Hill, and Paul A. Iaizzo

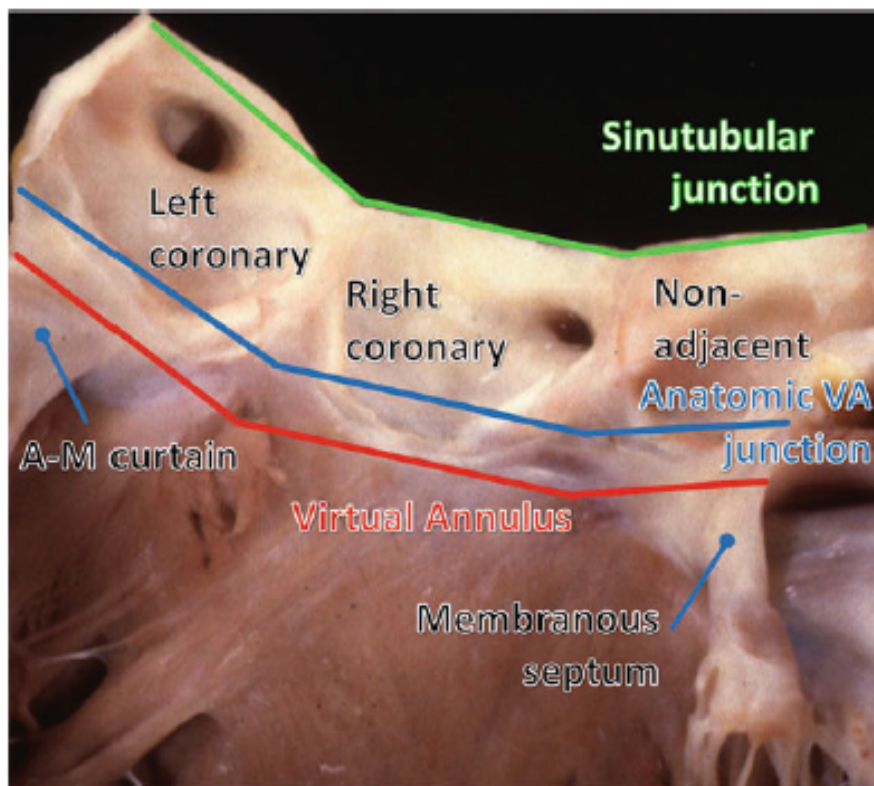


Fig. 2.9 The aortic leaflets have been removed from this human aortic root specimen; one can then observe the locations of the three defined aortic rings, i.e., relative to the crown-like hinges of the leaflets. A-M=aortic-mitral, VA=ventriculoarterial [3]. Image was modified from an original figure provided by Professor Robert H. Anderson; Professor Anderson retains the intellectual copyright of the original image

apposition, between the aortic valve leaflets [11]. Hence the sinutubular junction dictates the transition from the aortic root into the ascending aorta. The semilunar

Excerpted from Ex. 2224 p. 12 (IPR2014-00111)

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