31st Annual State of the Art Echocardiography | San Diego, CA
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ASD, VSD, Ebstein Anomaly

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Disclosures

Speakers Bureau (Philips, Medtronic)
Advisory Board (Siemens)

Ebstein Anomaly
Anatomy of Normal Tricuspid Valve

Tricuspid valve has been described and named more than 2,000 years ago!

- The tricuspid valve was discovered, described, and named by Erasistratus.
- Tricuspid, in Greek, is *triglochin* - τριγλώχιν
- The meaning of *glochin* – γλώχιν was any projecting point, such as the end of a yoke strap or the barb of an arrow.
- The Greek glochin was translated into Latin as *cuspis*, meaning a point, especially of a spear. (Chest. 1983 Oct;84(4):462-8).

He was the first to establish that the heart is a pump, a concept unknown to Hippocrates (c. 460 BC – c. 370 BC). He was also the first to describe heart valves (ὑμένης | hymens).
Anatomic Specimen Drawing of Tricuspid Valve

Probably the first drawing of a dissected tricuspid valve was done by Leonardo da Vinci.

Leonardo probably drew an ox heart.

Leonardo did not use the term 'tricuspid valve' as it has not been invented yet.

He referred to valves as 'heart sieves'.

Drawn circa 1512-13
British Royal Collection

Tricuspid Valve Videography

Intracardiac video recordings performed after the blood is replaced with a transparent, oxygen-carrying fluid.
3D TEE: Tricuspid Valve

Right Atrial Side

Right Ventricular Side

Apical 4-Chamber View: Normal TV

Tricuspid valve annulus is normally more apical than the mitral annulus...

... but not by much (< 0.8 cm/m²)
Ebstein Anomaly

- **1.** Tricuspid Valve Dysplasia → Tricuspid regurgitation

- **2.** ASD / PFO → Right-to-left shunt & cyanosis
  
  *Up to 94% of Ebstein’s have atrial shunt.*

- **3.** Wolff-Parkinson-White (WPW) → Arrhythmia

  *Up to 36% of Ebstein’s have WPW.*

Prevalence 1 in 200,000 live births.
Primary TR: Ebstein’s Anomaly
Thank You!

New York University Langone Medical Center