

# Cardiac Morphology of TGA and its common associations

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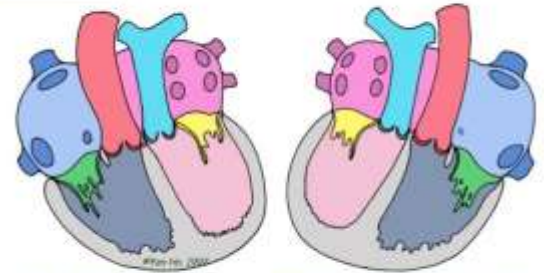
Brompton Cardiac Morphology  
Website: [www.rbht.nhs.uk/cardiacMorphology](http://www.rbht.nhs.uk/cardiacMorphology)

LinkedIn: Brompton Cardiac Morphology

## Transposition of the Great Arteries

Complete transposition, TGA, d-tga .....

### Definition



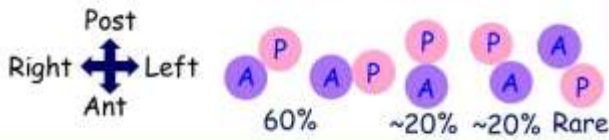
Usual atrial arrangement      Mirror-imaged atrial arrangement  
Concordant atrioventricular connections      and discordant ventriculo-arterial connections

[www.rbht.nhs.uk/morphology](http://www.rbht.nhs.uk/morphology)

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## Transposition of the Great Arteries

Complete transposition, TGA, d-tga .....



Great arteries tend to arise in parallel (loss of spiral relationship between aorta and pulm trunk)

Abnormal location of the aorta is a useful clue, but not always complete transposition!

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## Transposition of the Great Arteries

- 5 - 10% of congenital heart malformations
- Up to 20% of cardiac deaths in infancy if untreated



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## Transposition of the Great Arteries

### Complete transposition

#### 'Simple'

Intact ventricular septum  
No major associated malformations

#### 'Complex'

- + complicating lesions, e.g.
- VSD
  - Subpulmonary obstruction
  - Subaortic obstruction
  - Valvar anomalies
  - etc

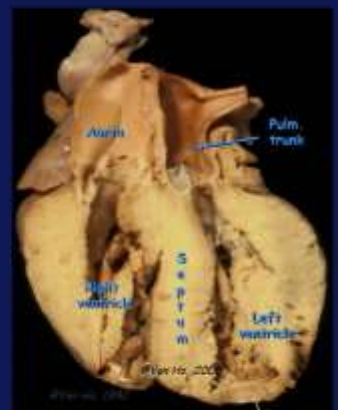
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## Transposition of the Great Arteries

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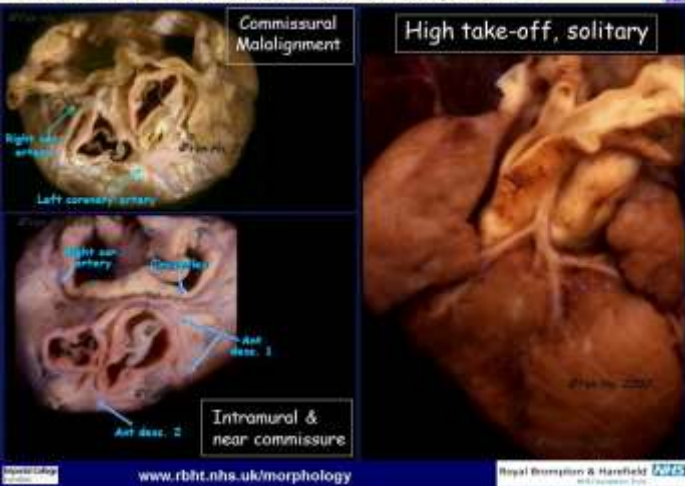
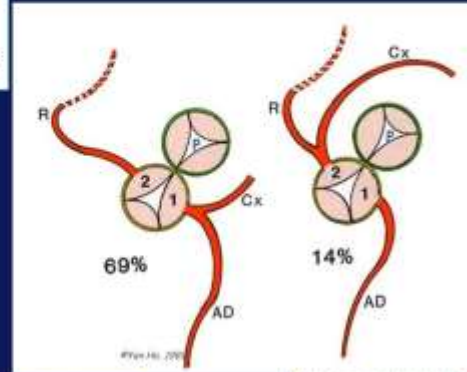
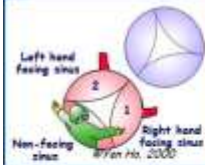
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**'Simple'**

- Intact ventricular septum
- No major associated malformations

However, may not be so 'simple' .....  
 e.g. variability in  
 coronary arteries  
 arterial relationships  
 infundibular morphology



**Origin of coronary arteries**

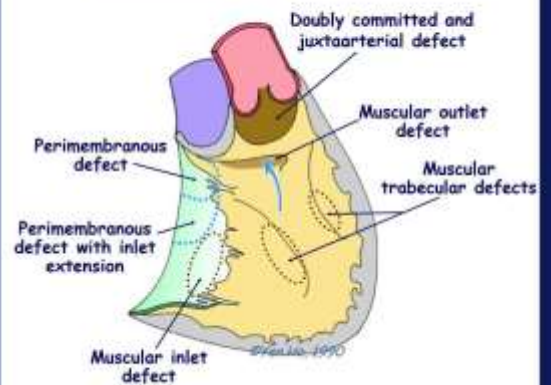
	Left Hand Sinus (Sinus 2)	Right Hand Sinus (Sinus 1)
ORTHOGONAL	53/61	58/60
TANGENTIAL	4/61	
INTRAMURAL	4/61	2/60

Li .....Ho, Heart 2000

**'Complex'**

- + complicating lesions, e.g.
- VSD 40 - 45% of cases (75% with malalignment of the outlet septum)
- Subpulmonary obstruction (LVOTO) 25% of cases
- Subaortic obstruction
- Coarctation 5% of cases
- Valvar anomalies
- etc

**Ventricular septal defects**





### VSD + malalignment



Hypoplastic RV

Malalignment of inlet septum - straddling TV

VSD with deviated outlet septum

Fibrous diaphragm or tunnel

Valvar stenosis

Aneurysmal tissue tags

Abnormal insertions of mitral valve

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### Subpulmonary obstruction: Septal bulge



### Subaortic obstruction (RV outflow)

- \* Muscular infundibulum
- \* Anomalous muscle bundles
- \* Anomalous tension apparatus
- \* Deviated outlet septum (with VSD)

### 'Complex'

- + complicating lesions, e.g.
- VSD 40 - 40% of cases (75% with malalignment of the outlet septum)
- Subpulmonary obstruction (LVOTO) 25% of cases
- Subaortic obstruction
- Coarctation 5% of cases
- Valvar anomalies
- etc



# Thank you



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