

TGA, ccTGA, Truncus arteriosus

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- All of the following are correct for TGA EXCEPT from:
- A) The sinus node is in its anticipated position
- B)TGA is never associated with mirror-imaged atrial arrangement
- C)The coronary arteries always arise from aortic sinuses that are nearest the pulmonary trunk
- D)Ventricular septum in the majority of hearts is straight, without the curvature so typical of the normal hearts
- E) Simple TGA means TGA with an intact ventricular septum and absence of obstruction of LVOT



- Associated malformations found in patients with TGA include:
- A) Persistent LSVC
- B)Coarctation of the aorta
- C)Juxtaposition of atrial appendages
- D)Abnormalities of the mitral valve
- E) All of the above



- All of the following are components of TGA EXCEPT:
- A) Anterior, rightward aorta
- B) Fibrous discontinuity between pulmonary valve and mitral valve
- C)Ventriculo-arterial discordance
- D)Most hearts have a sub-aortic infundibulum
- E) Parallel course of great arteries



- Potential substrates of LVOTO in patients with TGA are all of the following EXCEPT:
- A) Bicuspid Ao valve
- B)VSD with deviated outlet septum
- C)Aneurysmal tissue tags
- D)Valvar pulmonary stenosis
- E)Abnormal attachments of mitral valve



- Different surgical approaches to TGA are all of the following EXCEPT:
- A) Jatene
- B)Senning/Mustard
- C)Glenn
- D)Nikaidoh
- E)Rastelli



- In which of the following surgical approaches for TGA, RV remains the systemic ventricle:
- A) Rastelli
- B) Jatene
- C) Senning
- D) Nikaidoh
- E) REV



- Commonest post-operative complication after arterial switch operation:
- A) Neo-aortic regurgitation
- B) Dilatation of the aortic root
- C) Branch PA stenosis
- D) Supra-PS
- E) Impaired function due to myocardial ischaemia



- VSD is the most commonly associated defect occurring in approximately:
- A)10-15%
- B)20-25%
- C)30-35%
- D)40-45%
- E)50-55%



- The second most common pattern of coronary artery anatomy in patients with TGA after usual coronary artery arrangement is:
- A) Single coronary arising from sinus 2
- B)LCx from RCA (sinus 2) and LAD from sinus 1
- C)Single coronary artery from sinus 1
- D)Inverted origins with RCA from sinus 1 and LCA from sinus 2
- E) Intramural LCA with origin of LCA and RCA both from sinus 2 and intramural course of LCA



- All of the following are correct about TGA EXCEPT:
- A) Rarely aorta can be located in a posterior and rightward position relative to pulmonary valve
- B)Dynamic LV outflow tract obstruction can be seen when LV pressure is subsystemic
- C)In 7% of patients bilateral subarterial conus is present
- D)Doubly committed VSD is never found in the setting of TGA
- E) Atypical outflow tract anatomy can be associated with unusual coronary anatomy



- The best echocardiographic view to determine spatial relationship between the semilunar valves and great vessels is:
- A) Subcostal long axis view
- B)Parasternal short axis view
- C)Parasternal long axis view
- D)5 C view
- E)Subcostal RAO



- Parallel course of great arteries can be found except TGA, in the following CHD:
- A) Tetralogy of Fallot
- B)AVSD
- C)ccTGA
- D)CoA
- E)HLHS



Top Tips

- Determine segmental anatomy
- Assess systemic and pulmonary venous connections
- Evaluate atrial septum for interatrial communication (adequate?)
- Evaluate AV valve morphology and function
- Determine presence of VSD, LVOTO
- Demonstrate VA connections, great vessels relationship, commisural alignment, semilumar valve anatomy and function
- Coronary artery anatomy (exclude intramural course!)
- Presence, size and direction of flow across PDA
- Ao arch sidedness, exclude Ao arch hypoplasia or CoA



- The term ccTGA describes hearts with:
- A) AV concordance and VA discordance
- B) AV concordance and VA concordance
- C) AV discordance and VA concordance
- D) AV discordance and VA discordance
- E) Morphological RA connected to morphological LV through tricuspid valve



- Associated defects of ccTGA include all of the following EXCEPT:
- A) VSD
- B) LVOTO
- C) Bicuspid Ao valve
- D) Malformation of the morphologically TV (including Ebstein's anomaly)
- E) Coarctation



- The commonest type of VSD in ccTGAs is:
- A) Muscular outlet
- B) Perimembranous
- C) DCSA VSD
- D) Muscular trabecular
- E) Muscular inlet VSD



- All of the following are correct about ccTGA EXCEPT
- A) Mirror-imaged arrangement of atria is present in 5% of patients
- B) There is malalignment between atrial septum and the inlet ventricular septum
- C) Mitral valve is in fibrous continuity with the pulmonary valve
- D) Apex can point to the left, to the right or it can be in the middle
- E) The position of the conduction system is not affected



- LVOTO can be caused by:
- A) Subvalvar stenosis caused by fibrous shelf
- B) Fibrous tissue tags originating from any of the valves near the outflow tract
- C) Valvar stenosis
- D) Large aneurysm of the membranous septum
- E) All of the above



- The position of the Ao in relation to the PA is usually:
- A) Posterior and to the right
- B) Posterior and to the left
- C) Anterior and to the right
- D) Anterior and to the left
- E) Side by side



- Which is the best 2D echocardiography view to assess reversed off setting of AV valves in ccTGA
- A) Subcostal RAO
- B) 4C view
- C) Parasternal long axis view
- D) Parasternal short axis view
- E) Suprasternal sagittal view



- All of the following are correct EXCEPT:
- A) Severe TR can be caused either by dysplasia of TV or secondary to annular dilatation
- B) TR is usually more severe in presence of LVOTO
- C) Complete heart block may be the first symptom in children, adolescents or adults
- D) Complete AV block continues to develop at a rate of 2% per year
- E) The reversed offset of AV valves might be more difficult to identify in cases with an inlet VSD



- Surgical approaches in patients with ccTGA include all of the following EXCEPT:
- A) ASO
- B) Mustard/Senning + ventricular redirection
- C) Mustard/Senning + ASO
- D) PA banding
- E) Pacemaker insertion



- RV is identified by EXCEPT:
- A) Offsetting of attachments of AV valves
- B) Smooth trabeculations
- C) Moderator band
- D) Septal attachment of AV valve
- E) Trileaflet AV valve



Top Tips

- Determine atrial arrangement
- Cardiac orientation
- AV and VA connections
- The two discordant connections cancel each other with respect to the circulation
- Diagnostic features: AV and VA discordance, reversed offsetting of AV valves, malalignment of atrial septum and inlet part of ventricular septum
- Assess associated malformations (Ebstein's, straddling of AV valve, LVOTO-severity and nature, ASD, PDA, LSVC, Ao arch)



- In sequential segmental analysis of the heart, common arterial trunk is one variant of:
- A) Double outlet heart
- B) VA discordance
- C) Single outlet heart
- D) AV discordance
- E) Aortic atresia



- Commonest type of common arterial trunk is:
- A) I
- B) II
- C) III
- D) IV
- E) V



- A key feature of truncus arteriosus is:
- A) ASD
- B) PDA
- C) VSD
- D) DORV
- E) AVSD



- The truncal valve most frequently has:
- A) One leaflet
- B) Two leaflets
- C) Three leaflets
- D) Four leaflets
- E) Five leaflets



- Associated defects of Truncus include all of the following EXCEPT:
- A) Interrupted Ao arch
- B) Right Ao arch
- C) Double Ao arch
- D) AVSD
- E) LSVC to coronary sinus



- Truncus in parasternal long axis view could be misdiagnosed as:
- A) TGA
- B) TOF
- C) AVSD
- D) HLHS
- E) TAPVC



- Suprasternal notch view is important in truncus for assessing:
- A) ASD
- B) PDA
- C) Interrupted Ao arch
- D) VSD
- E) Type of truncus



- Possible surgical approach for truncus is:
- A) Norwood
- B) Arterial switch
- C) Rastelli
- D) DKS
- E) BT shunt



- In truncus the most common abnormality of truncal valve is:
- A) Unicuspid
- B) Straddling
- C) Stenosis/regurgitation
- D) Prolapse
- E) Atretic



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Initial echocardiographic assessment in truncus should include:

- •Location and size of VSD, additional VSDs
- •AV valve anatomy and function
- Morphology and function of truncal valve
- •Presence or absence of MPA, branch PA position and size
- •Sources of pulmonary blood flow
- •Ao arch anatomy
- •Coronary artery origin and proximal course
- Associated lesions

PHILIPS

TIS1.5 MI 0.7

S12-4/Pediatric




If you saw this parasternal long axis view, you would suspect: A)TOF B)Normal heart C)TGA D)PS E)DORV



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What is the most possible coronary artery arrangement in this patient:

- A)Usual coronary artery arrangement
- B)Single coronary from sinus 2
- C)Intramural coronary artery
- D)Inverted origins
- E)LAD and RCA coming from sinus 1 and LCx from sinus 2





- This 5C view shows:
- A)Aorta from LV, small muscular VSD with R to L shunt
- B)PA from LV, small muscular VSD with R to L shunt, PDA
- C)Small muscular VSD with R to L shunt indicative of pulmonary hypertension
- D)Truncus
- E)ccTGA

TIS1.8





- This short axis view is from a patient with TGA. What is the associated defect?
- A)AVSD
- B)VSD
- C)Cleft of mitral valve
- D)RVOTO
- E)Straddling of mitral valve

07/10/2015 11:03:27 TIS1.5 MI 0.8 S12-4/Pediatric **R 95HZ** .0cm MЗ **D** 30% 43 Off Sen P G R JPEG

142 bpm







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What is the diagnosis?
A)AVSD
B)DORV, Transposed GAs, CoA
C)TOF
D)VSD, overriding aorta



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The relationship of great arteries is:
A)Aorta posterior and to the right
B)Aorta anterior and to the right
C)Aorta posterior and to the left
D)Aorta anterior and to the left
E)Aorta anterior to PA

TIS1.5





- This subcostal view of a patient with TGA shows all of the following EXCEPT:
- A)PDA is present
- **B)Confluent branch Pas**
- C)Small VSD with bidirectional flow
- D)PS
- E)No LVOTO

TIS1.7 |





This is a subcostal view of a patient with TGA. What is the finding?

- A)LVOTO
- B)Straddling of MV
- C)Circumflex from RCA
- D)Impaired function
- E)RVH

TIS1.5





What is the additional defect/abnormality in this patient with diagnosis of TGA?

- A)Dilated cardiomyopathy
- B)Multiple VSDs
- C)Cleft of MV
- **D**)Coarctation
- E)LSVC to CS





What is the diagnosis
A) Normal heart with PH
B) Late presentation of TGA
C) TOF
D) ccTGA
E) TGA with valvar PS





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What is the diagnosis: A)Sub AS and VSD B)TGA, LVOTO (sub PS and PS), VSD C)TOF D)TGA with VSD E)None of the above

TIS1.5 MI 0.8

S12-4/Pediatric





Short axis view of ventricles. What is the possible diagnosis?

A)Cleft of MV

B)Complete AVSD

C)Dilated LV

D)AV discordance

E)Partial AVSD

TIS1.5 MI 0.8





What is the relationship of great arteries in this patient?

- A)Ao anterior and to the left
- B)Ao anterior and to the right
- C)Ao posterior and to the left
- D)Ao posterior and to the right
- E)Side-by-side





What does this clip show?

A) Branch Pas anterior to Ao post Lecompte manoevre

- B) Spatial relationship of great arteries in TGA prior to surgery
- C) Spatial relationship of great arteries in ccTGA prior to surgery
- D) Truncus type I
- E) None of the above

TIS1.7





- If the above patient has usual atrial arrangement, what is the AV relationship?
- A)AV concordance
- B)AV discordance
- C)DILV
- D)Criss cross heart
- E)AV concordance with cleft of MV







- What diagnostic feature of ccTGA is demonstrated in this 4C view?
- A)Trileaflet tricuspid valve
- B)Reversed off setting of AV valves
- C)TV dysplasia
- D)LVOTO
- E)VA discordance

TIS1.2



TIS1.7



TIS1.7




The diagnosis (looking at the last 3 images) is:

- A)ccTGA
- B)TGA
- C)Situs inversus, TGA
- D)Situs inversus, ccTGA
- E)None of the above

TIS1.8

S12-4/Pediatric





- What are the AV, VA connections?
- A)AV concordance, DORV
- B)AV concordance, DOLV
- C)AV discordance, DORV
- D)AV discordance, VA discordance E)TGA

TIS1.5 |

S8-3/Ped-CHD



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What is the diagnosis? A)TOF B)DORV C)AP window D)Truncus type I E)Truncus type II

TIS1.3 |

S8-3/Ped-CHD





What is the finding? A)Dysplastic truncal valve B)Dysplastic Ao valve C)Normal truncal valve D)Normal Ao valve E)Dysplastic pulm. Valve in TGA

S8-3/Ped-CHD





How many are the leaflets of the truncal valve? A)1 B)2 C)3 D)4 E)5



Thank you!



Good luck!