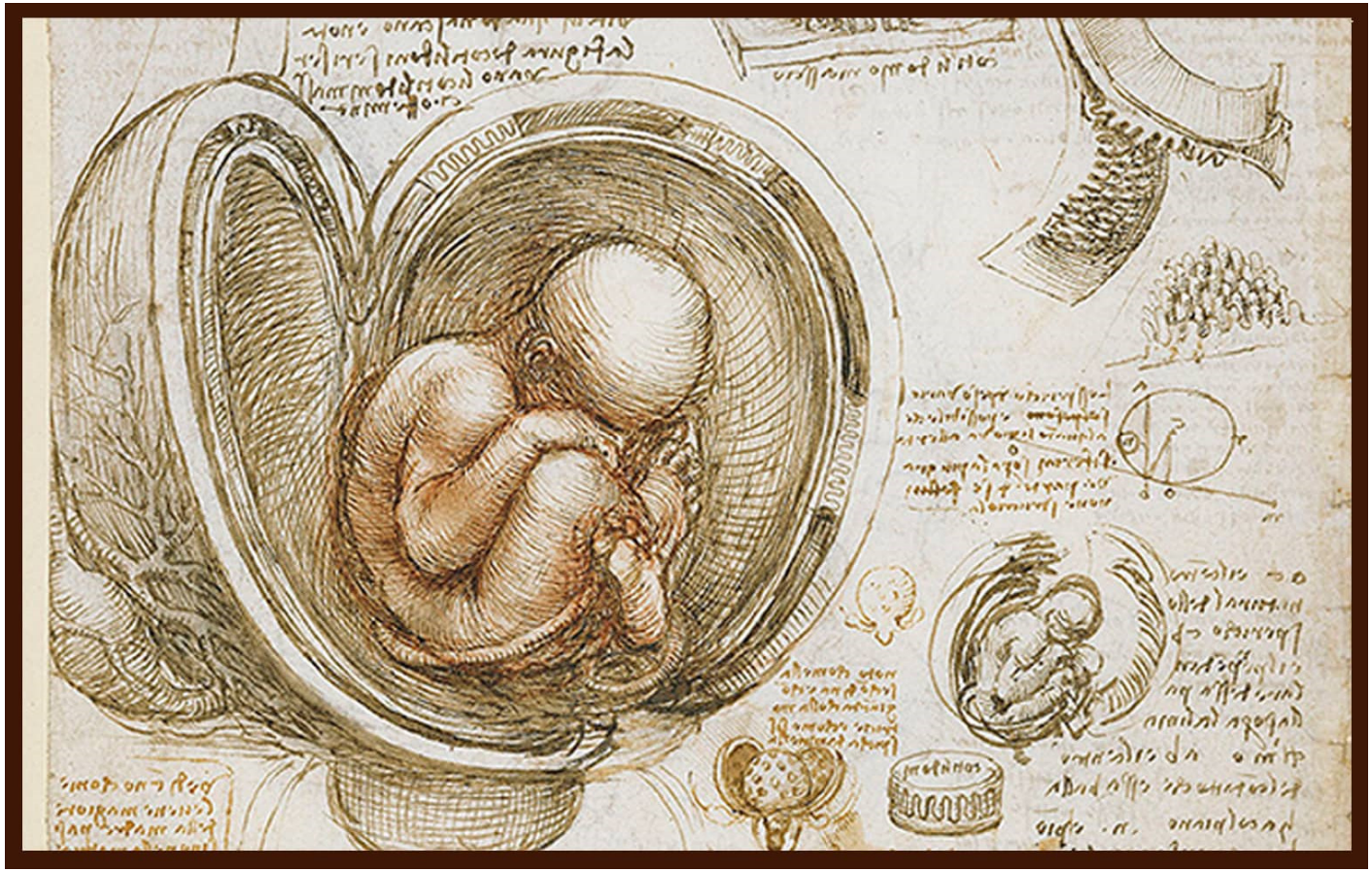
Wilhelmina Kinderziekenhuis

7e ‘Utrecht Sessions’ over aangeboren hartafwijkingen:

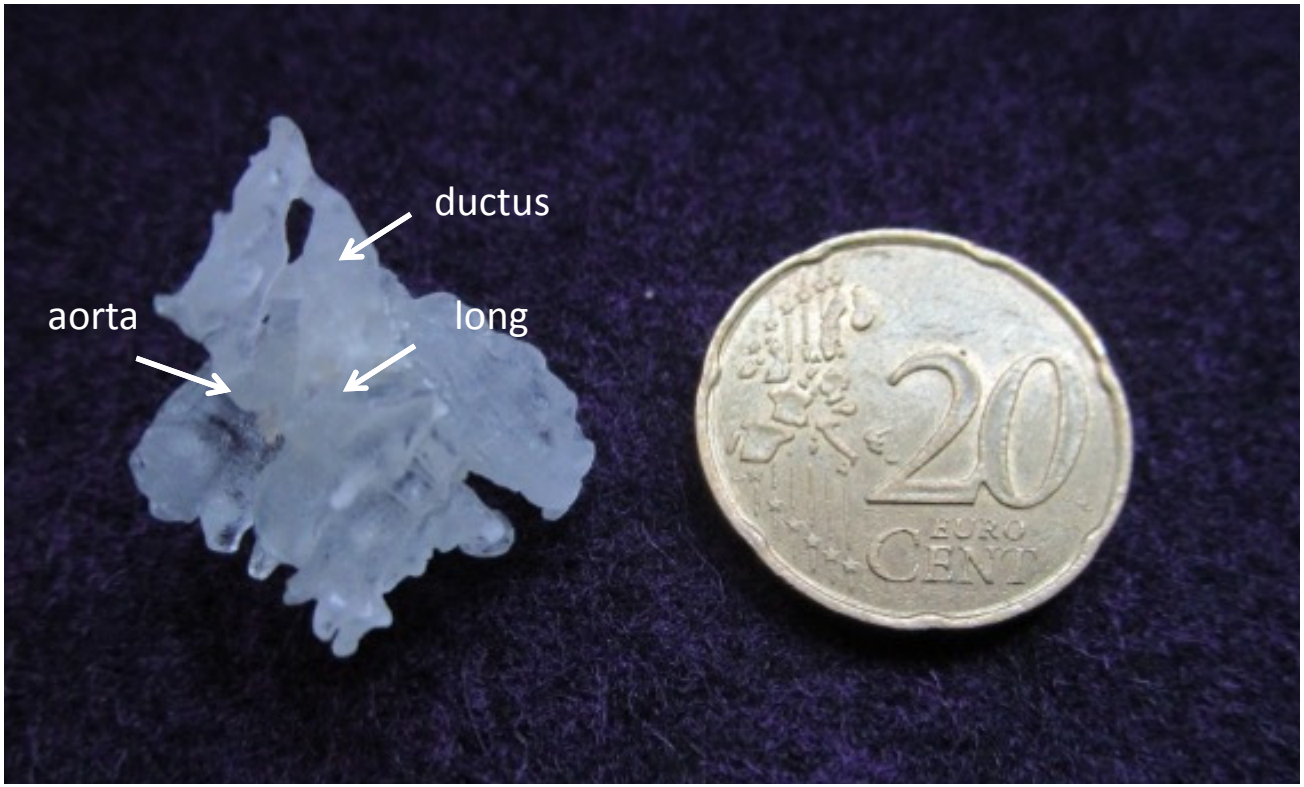
De aortaboog

Henriëtte ter Heide
Kindercardioloog



Studies of a Fetus in the Womb, a drawing by Leonardo da Vinci, c. 1510 to 1512

Wilhelmina Kinderziekenhuis


ductus
aorta
long
20
EURO
CENT

Hartafwijkingen

- Geboortecijfer 2018: 168.525 (CBS)
  - ✓ 0.6% aangeboren hartafwijkingen:
    - ✓ - ongeveer 1030 kinderen per jaar
    - ✓ 1/3: geringe afwijking
    - ✓ 1/3: matige afwijking
      - ✓ behoeft of eenvoudige ingreep of medicamenteuze ondersteuning
    - ✓ 1/3: ernstige afwijking
      - ✓ alleen palliatieve of risicovolle chirurgie, letaal
- Aangeboren hartafwijkingen zijn de meest voorkomende aangeboren afwijkingen

Geboorteprevalentie aangeboren hartafwijkingen

5-jaarsgemiddelde over de periode 2013-2017

Type afwijking	Per 10.000 levend geborenen	Jaarlijks aantal afwijkingen
Alle hartafwijkingen	60	1.030
Alle ernstige hartafwijkingen	19	330
Ventrikelseptumdefect	32	560
Atriumseptumdefect	6	110
Pulmonaire klepafwijkingen	5	90
Coarctatio van de aorta	3	55
Transpositie van de grote vaten	4	70
Tetralogie van Fallot	2	30
Aortaklep stenose	3	35
Hypoplastisch linkerhart	1	20
Totaal aangeboren afwijkingen	230	3.900

Bron: Eurocat (2019)

Jaarlijks aantal: Er is hier aangenomen dat er jaarlijks in Nederland 175.000 kinderen geboren worden

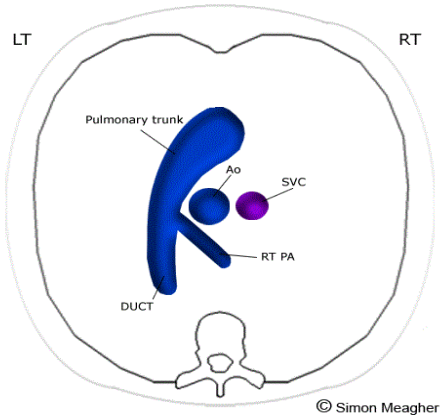
Nationaal prenataal screeningsprogramma

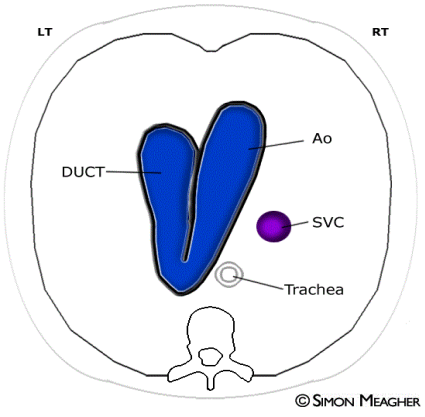
2007:

Introductie nationaal prenataal screeningsprogramma

2012:

Toevoegen uitstroombanen en three vessel view





NVOG Standaard 2012

Structureel echoscopisch onderzoek

Hart

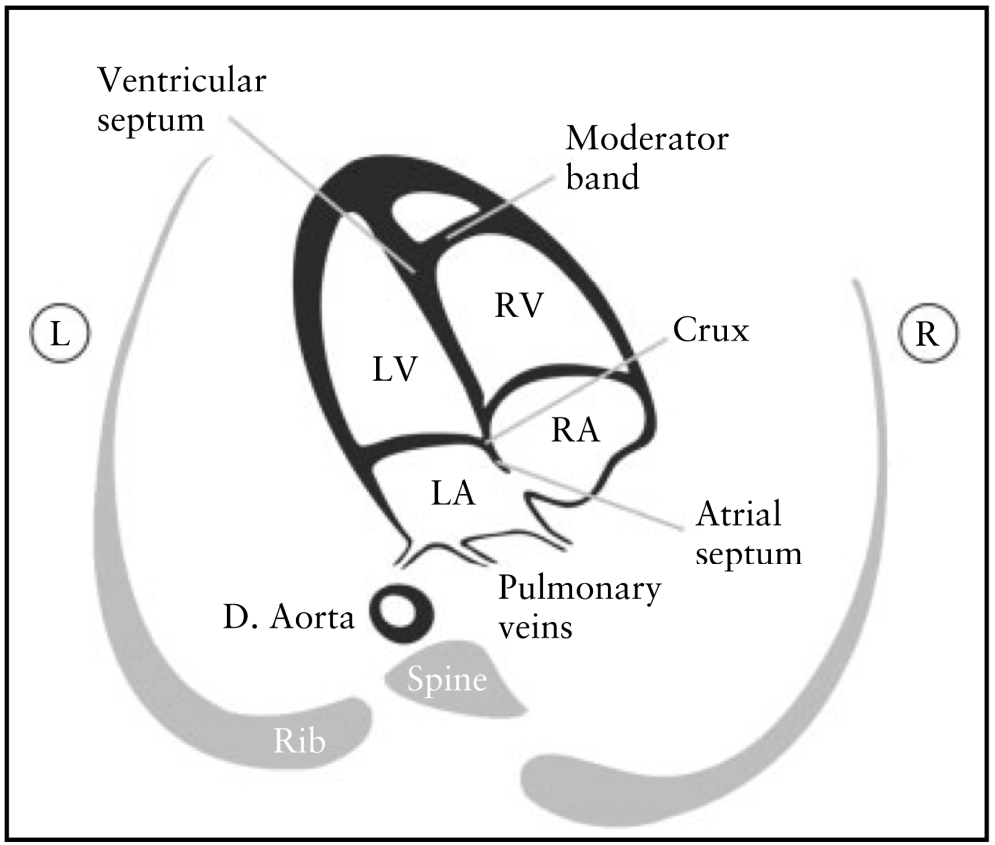
- ✓ Beoordeling positie en grootte hart
- ✓ Beoordeling 4-kamerbeeld: symmetrie, identificatie beide AV-kleppen, crux
- ✓ Beoordeling aorta uit linker ventrikel, longslagader uit rechter ventrikel
- ✓ Beoordeling kruising van de grote vaten
- ✓ Beoordeling ‘three vessel view'

NVOG Standaard 2012

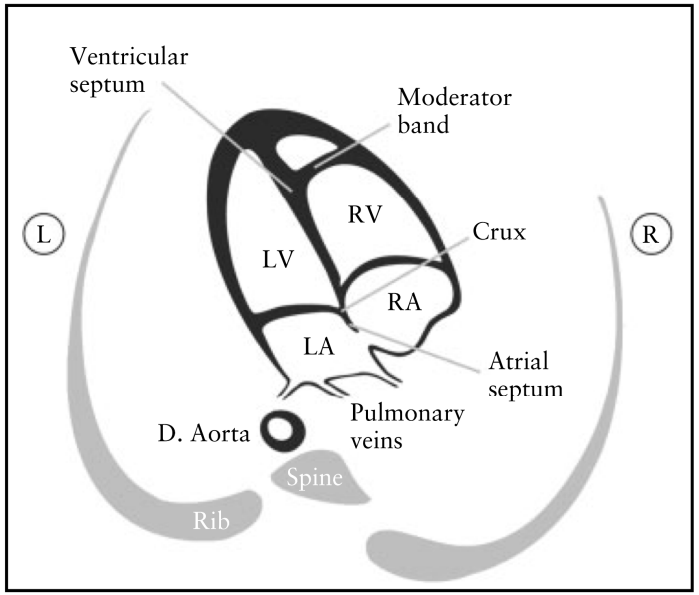
Structureel echoscopisch onderzoek

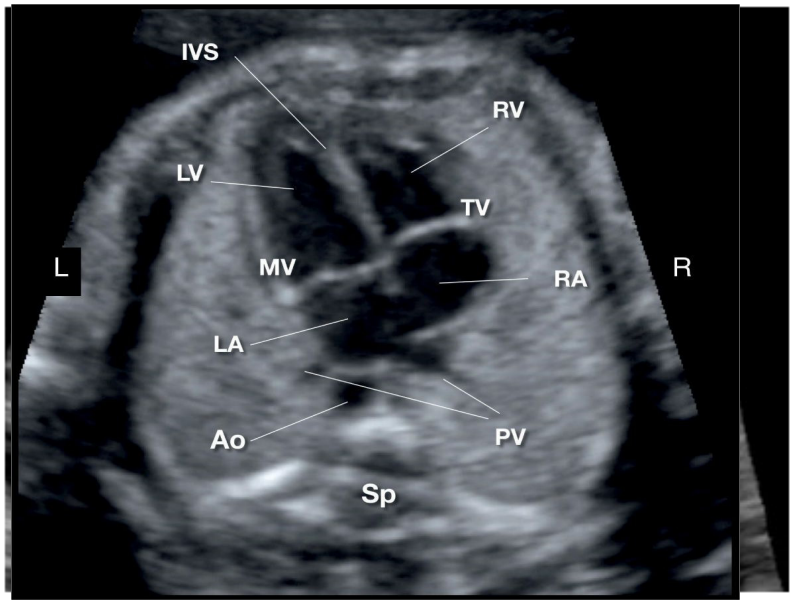
4- kamerbeeld: >50% sensitiviteit

✓ *HLHS, tricuspidaalklep atresie, AVSD*

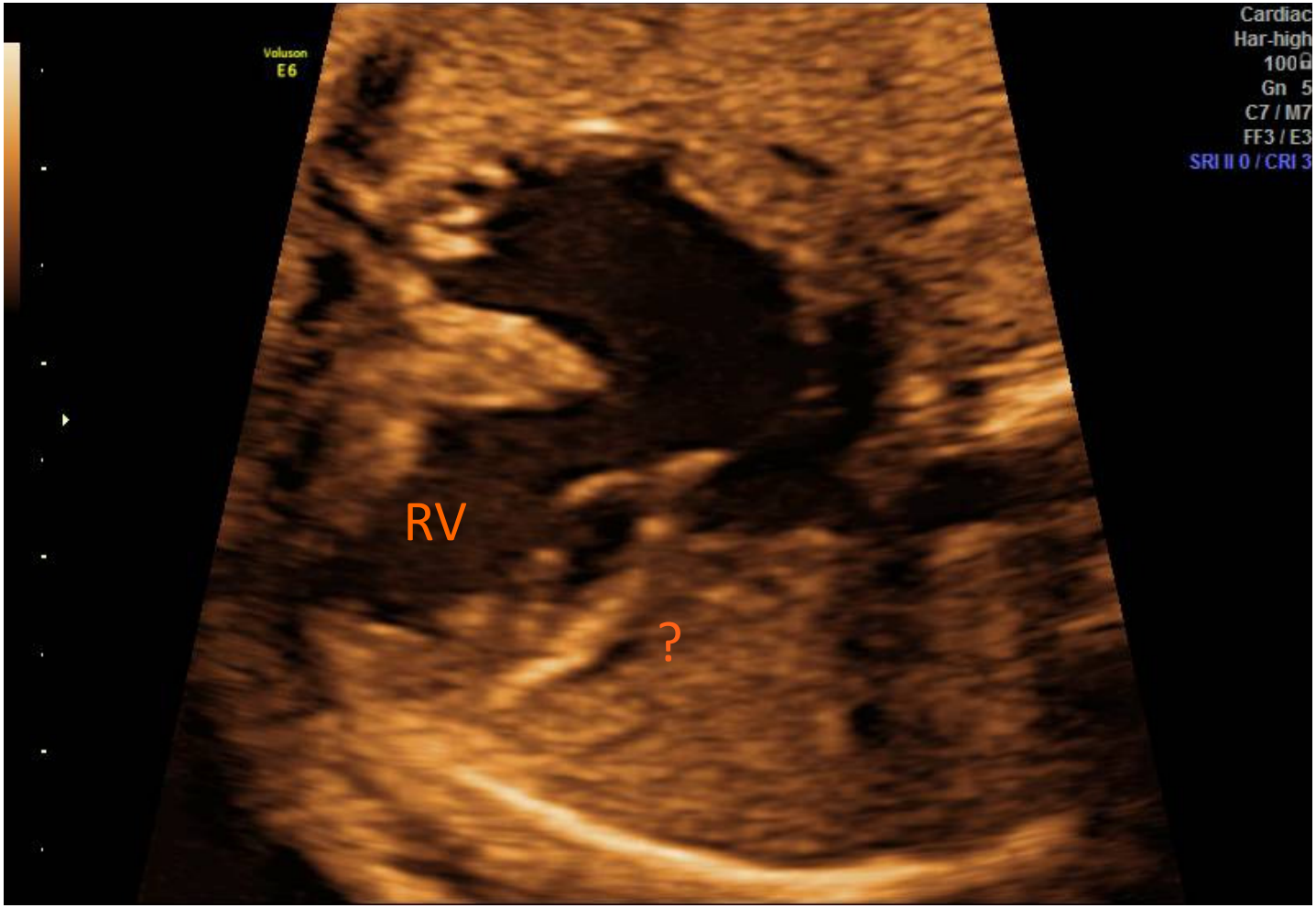


4 chamber view





4 chamber view


Voluson
E6
Cardiac
Har-high
100
Gn 5
C7 / M7
FF3 / E3
SRI II 0 / CRI 3
RV
?

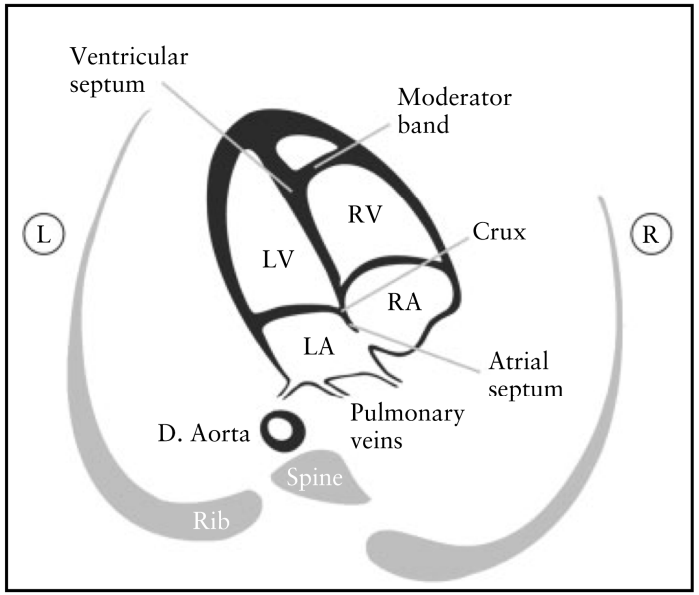
Structureel echoscopisch onderzoek

4- kamerbeeld: >50% sensitiviteit

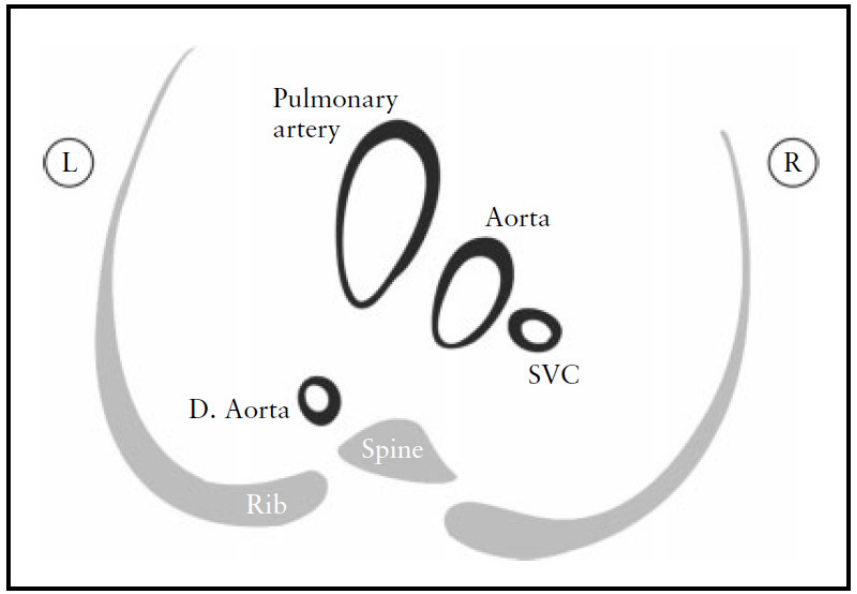
✓ *HLHS, tricuspidaalklep atresie, AVSD*

+ Uitstroombanen en ‘three vessel view’ : 90% sensitiviteit

✓ *TOF, DORV, Truncus arteriosus, TGA*

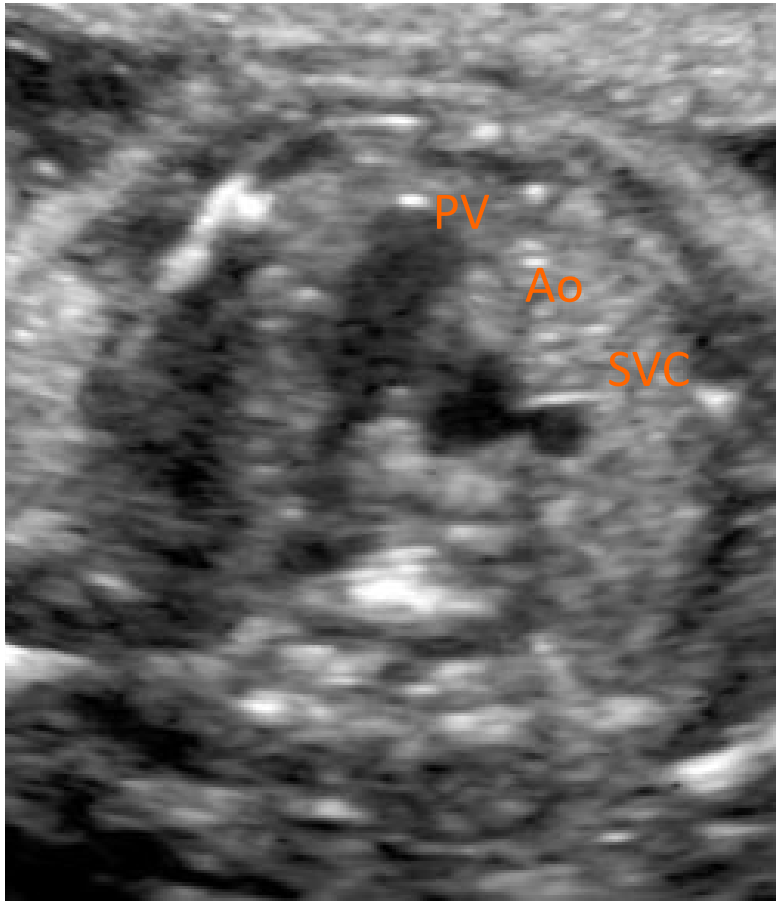


4 chamber view



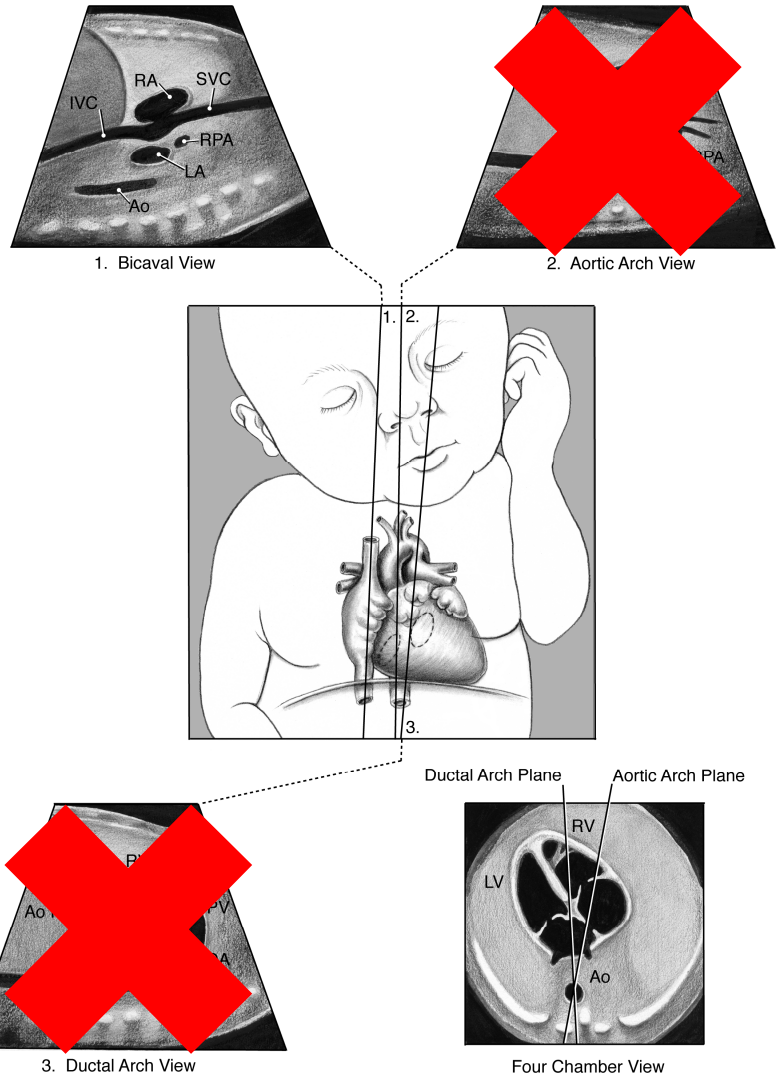
3 vessel view

4 chamber view

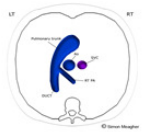
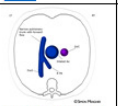
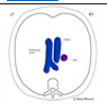
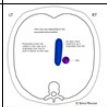
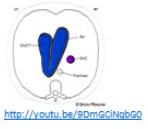
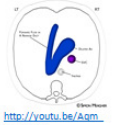
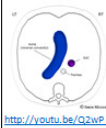


3 vessel view

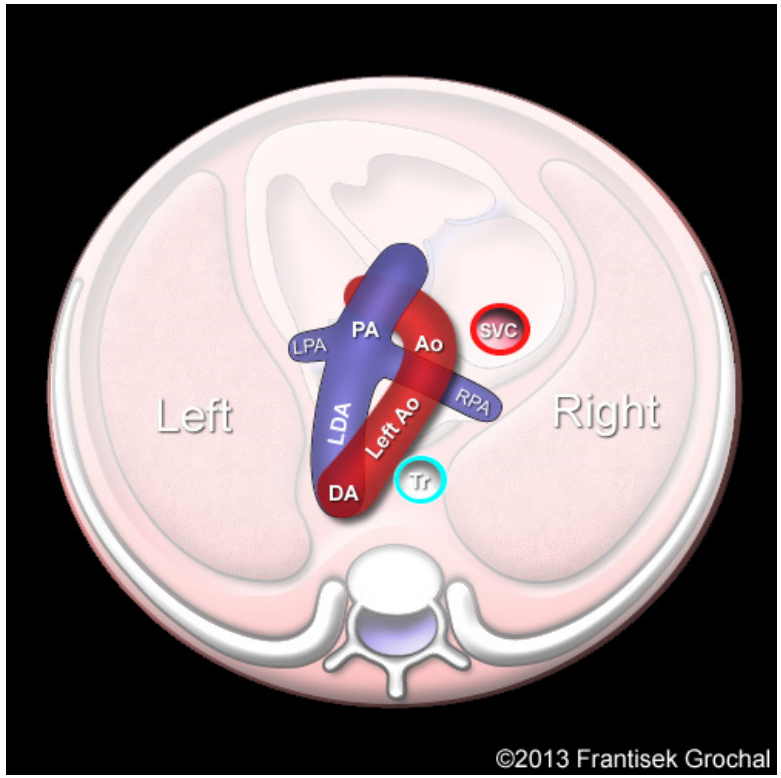
En de bogen dan?



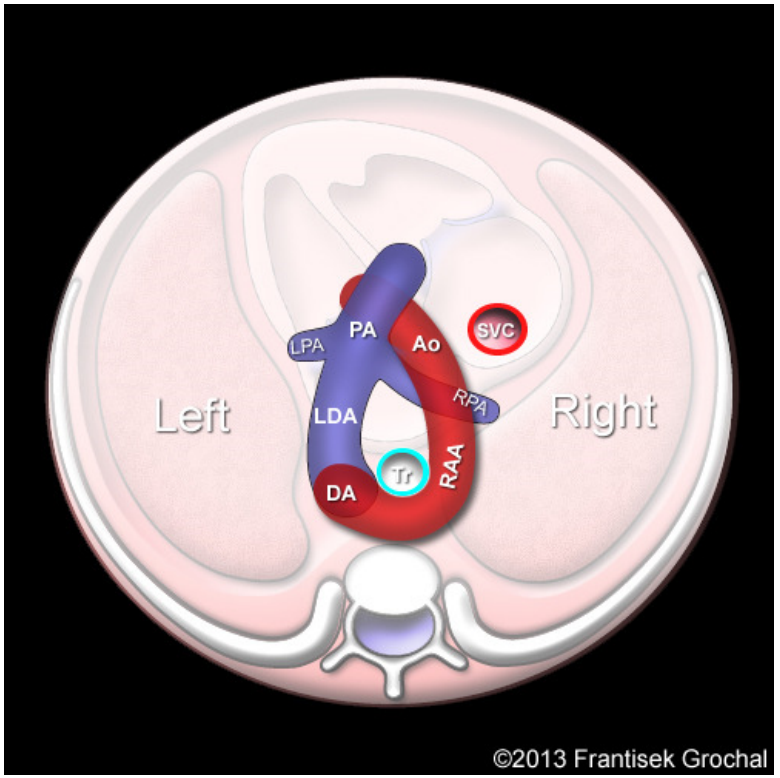
En de bogen dan?

ROFT/ 3vv  http://youtu.be/UUE0zmXFcBo http://youtu.be/6NGW5yvZjhk	**Main subtypes:** (VSD/PA/MAPCAs-see rare cardiac table) Pulmonary stenosis (75% cases) http://youtu.be/s2V_wrY-rLw http://youtu.be/ePb5f0EIxIE	Pulmonary atresia (20% http://youtu.be/9kwzLLPoo00	Absent (dysplastic/ring) pulmonary valve syndrome (5% cases) http://youtu.be/KesSs1LLHxg http://youtu.be/-Mq3Wv3HPsQ	 http://youtu.be/7N5NBVKuW4M	 http://youtu.be/HkaIxDwfn2A	 No video	 http://youtu.be/G4MDZs4XCUY	 http://youtu.be/E5smuE0N3dk	 http://youtu.be/IkokBFyEE_U	 http://youtu.be/Ksu7ACooWYU	 http://youtu.be/6KnveXnKM7M
Transverse arches/ 3vT  http://youtu.be/9DmGCiNqbG0	 http://youtu.be/PctXMePw9G8	 http://youtu.be/jpDwJ9J8tEI http://youtu.be/uQdvwvqpfJc	 http://youtu.be/tefgLsPfjoE	 http://youtu.be/Aqm_S2OBG3Q	 http://youtu.be/JQtiprjBMQ0	 No video	 http://youtu.be/CpPT4pNXlUw	 http://youtu.be/orFIbEJGni4	 http://youtu.be/Q2wP_GlWoZI	 http://youtu.be/SmvJ7qvTde0	 http://youtu.be/6KnveXnKM7M
Overview videos http://youtu.be/kfNZHFKLBOY http://youtu.be/86KIIF5a1Jk	http://youtu.be/e02Q-RvEVOo	http://youtu.be/Bm937otqeFU http://youtu.be/GYFnQ4BvmeY	http://youtu.be/ZZIiOD8-VYg http://youtu.be/bRkoGUVNWcY	http://youtu.be/l6CXACb6nvs	http://youtu.be/JGVcmB7DS2k	No video	http://youtu.be/ZgmyBiNfCaA	http://youtu.be/C_KCaUjIL0U http://youtu.be/R4rCiu414rg Advanced clips:http://youtu.be/6aXed5gtHLkM http://youtu.be/Ld5jxuOfFxU	http://youtu.be/xgeLd6znxM0 Advanced clips: http://youtu.be/kAQLxb45zb0 http://youtu.be/lDza1T6kqvE	http://youtu.be/fcDZ0NkyO2Q	http://youtu.be/3hUexKoNX04

Aortabogen



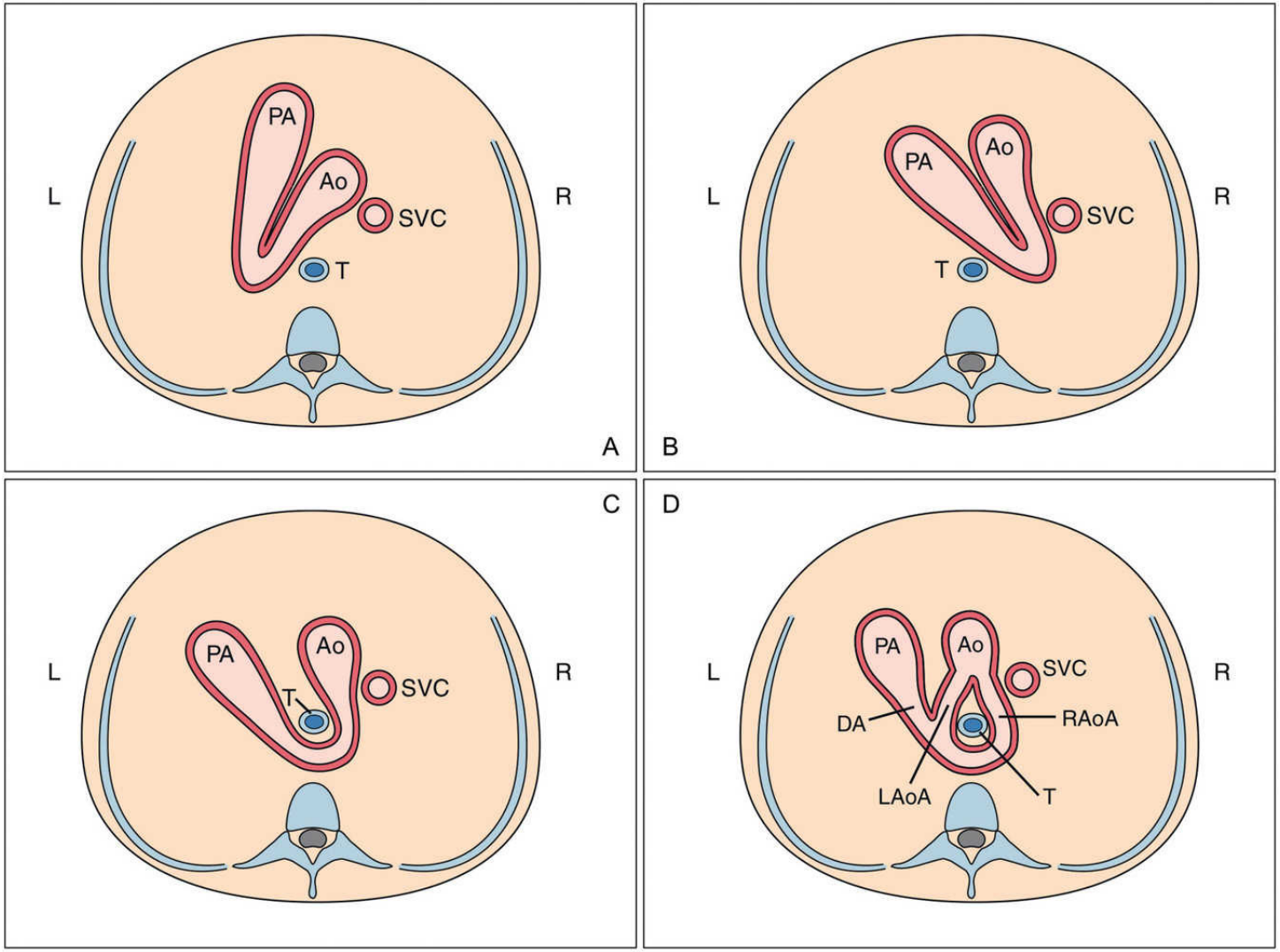
Linker boog



Rechter boog

Linker boog, linker ductus

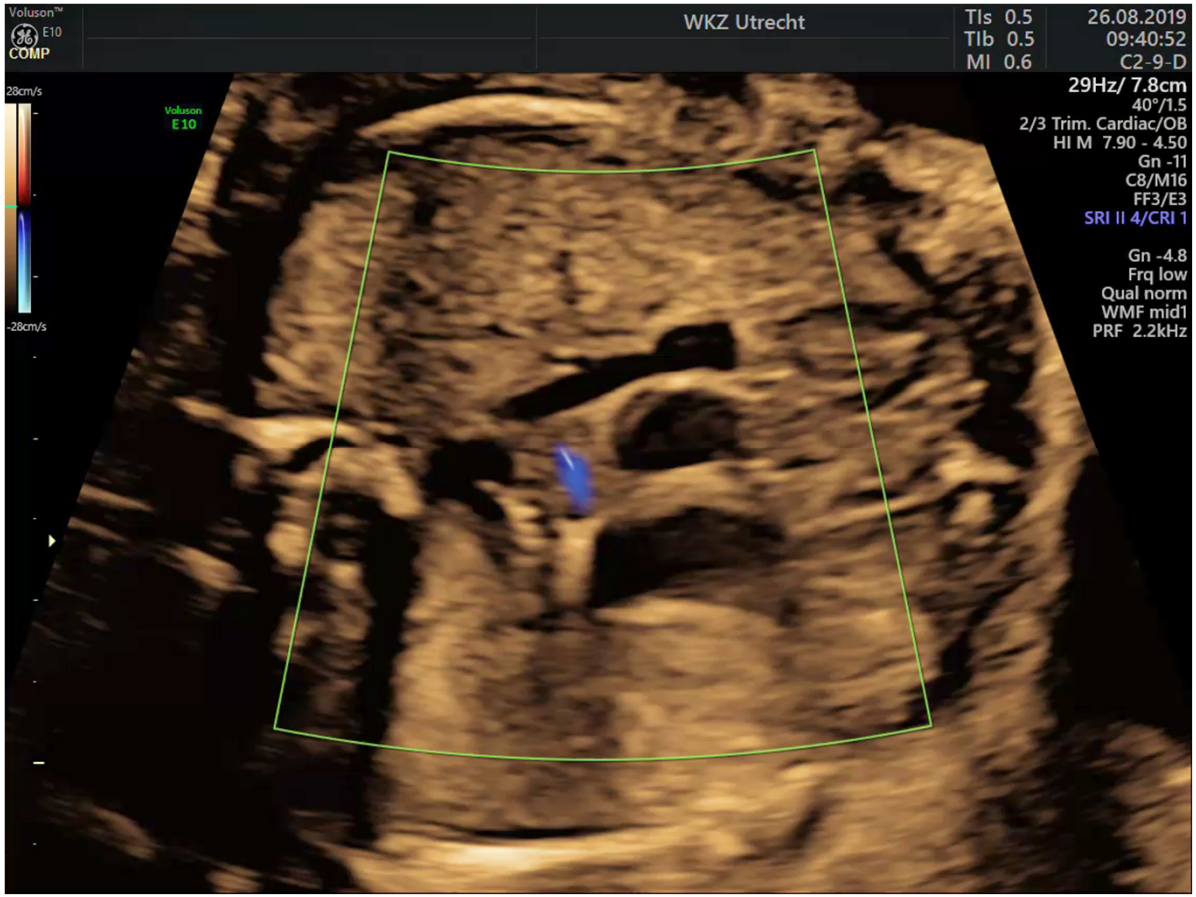
Rechter boog, rechter ductus



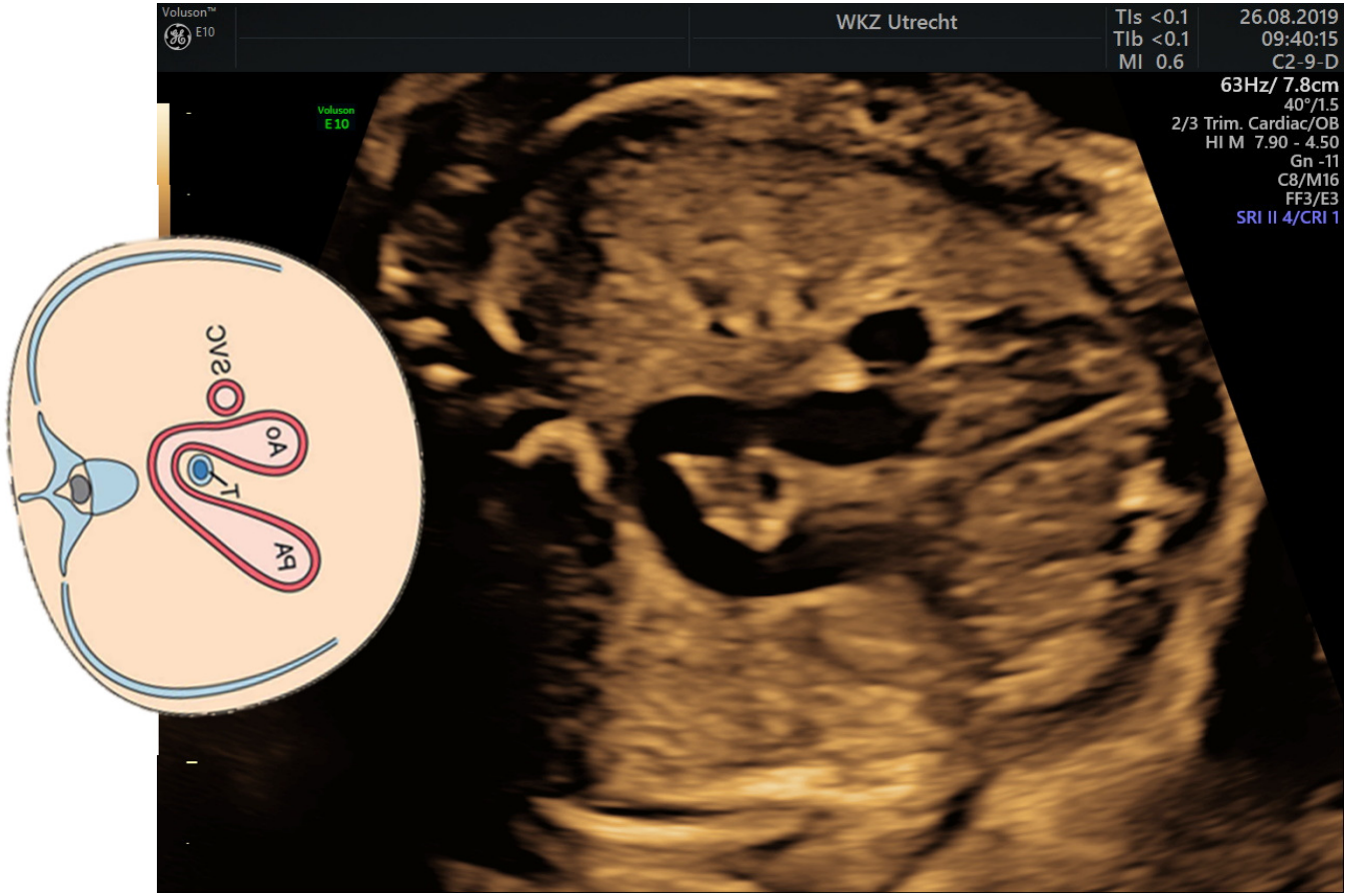
Rechter boog, linker ductus
Vaak aberrante li subclavia

Dubbele aortaboog boog

Rechter aortaboog

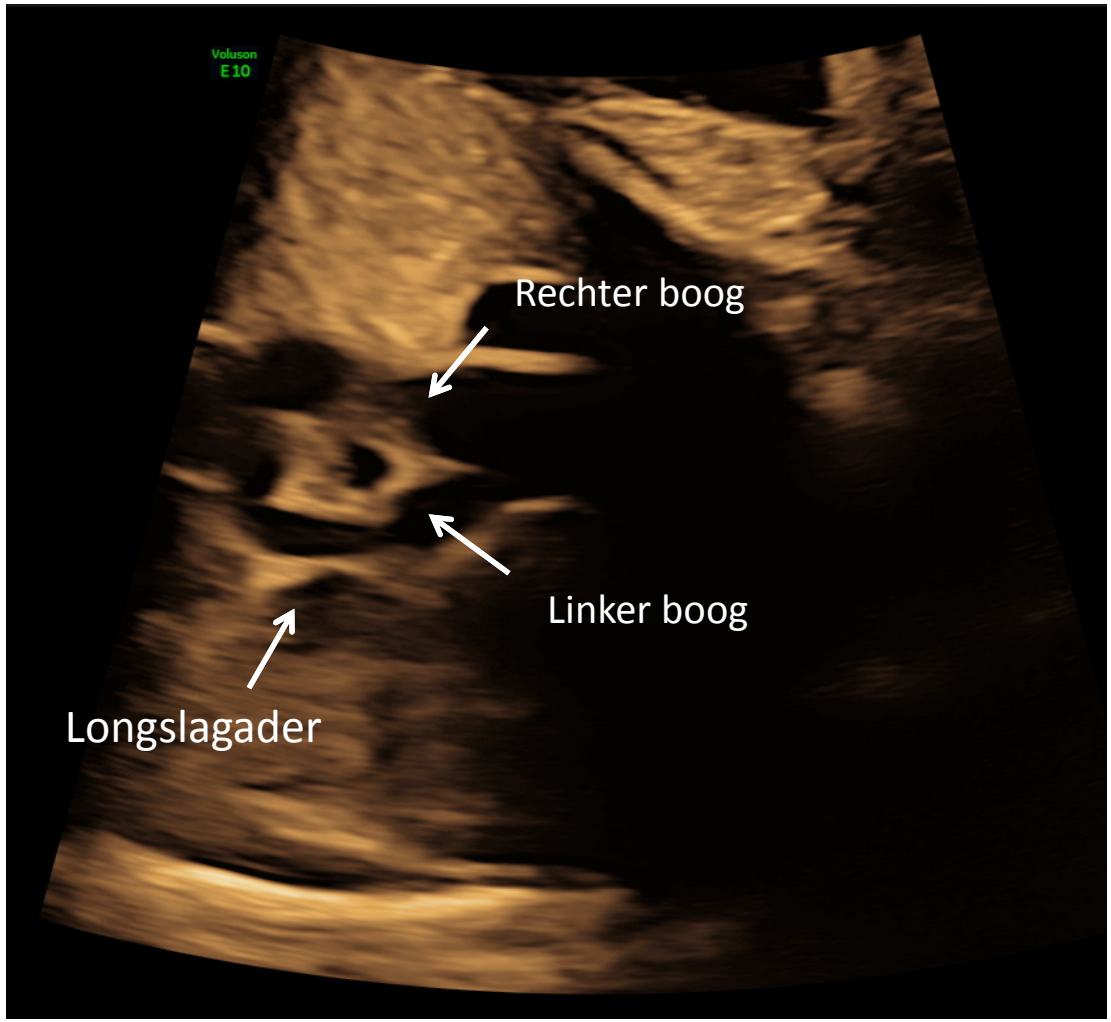


Rechter aortaboog

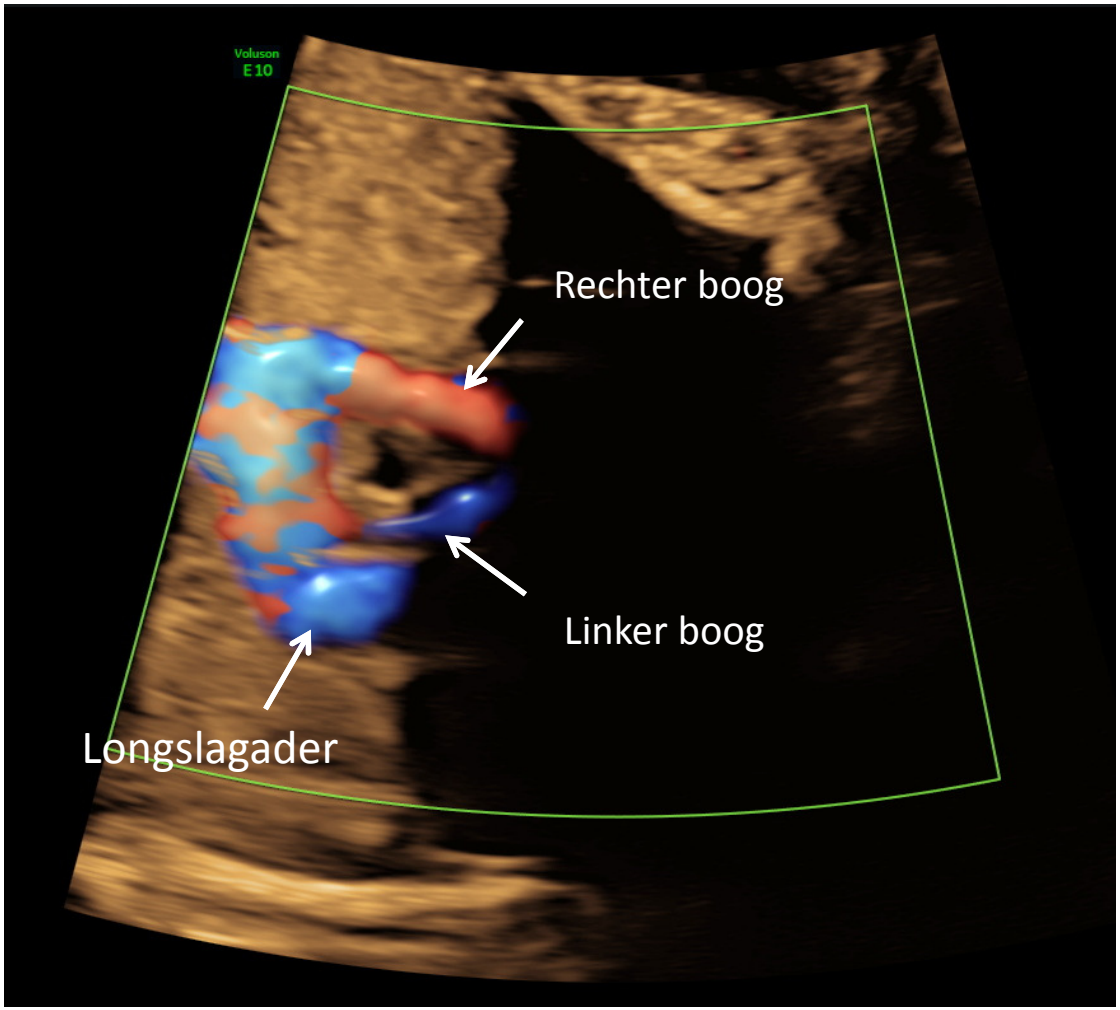


Rechter aortaboog

Dubbele aortaboog



Dubbele aortaboog



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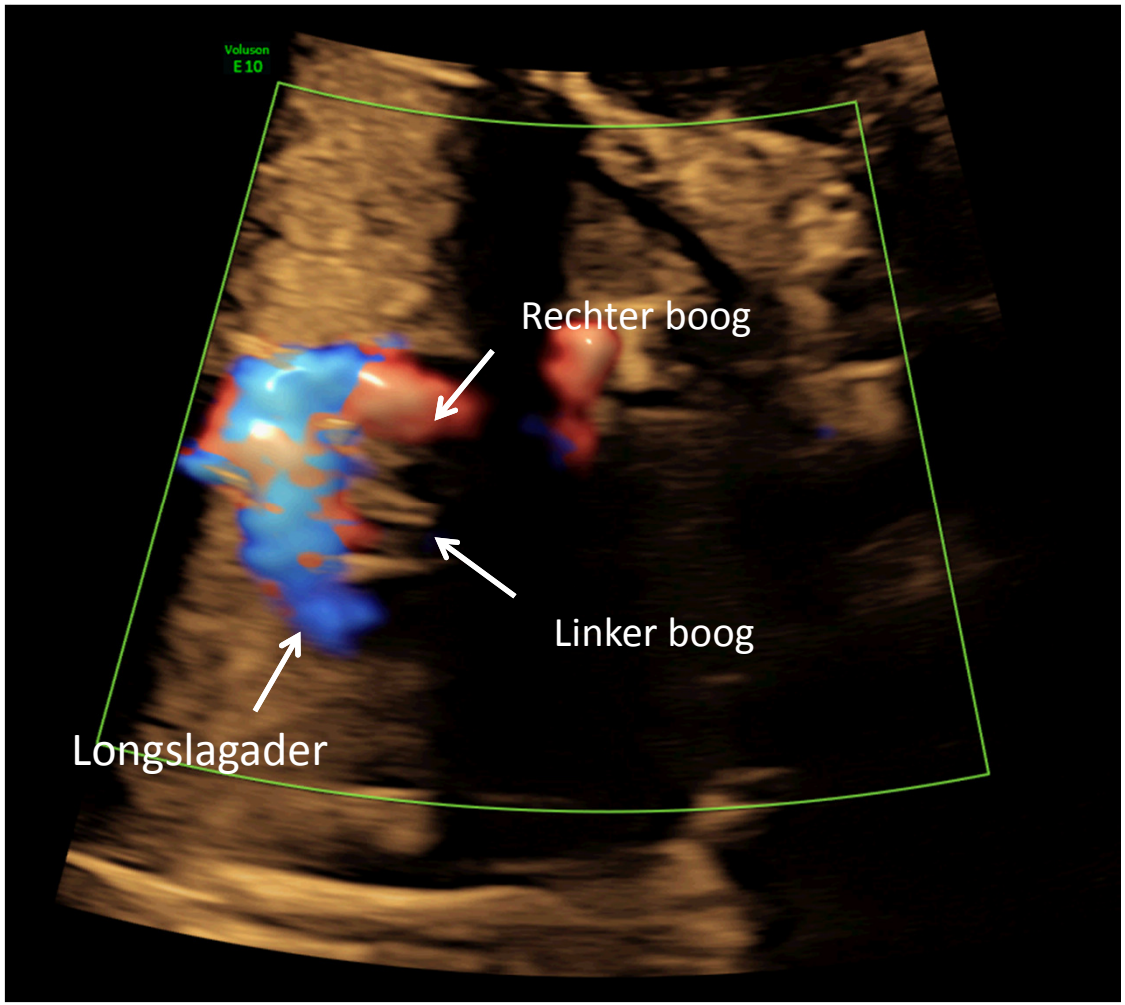
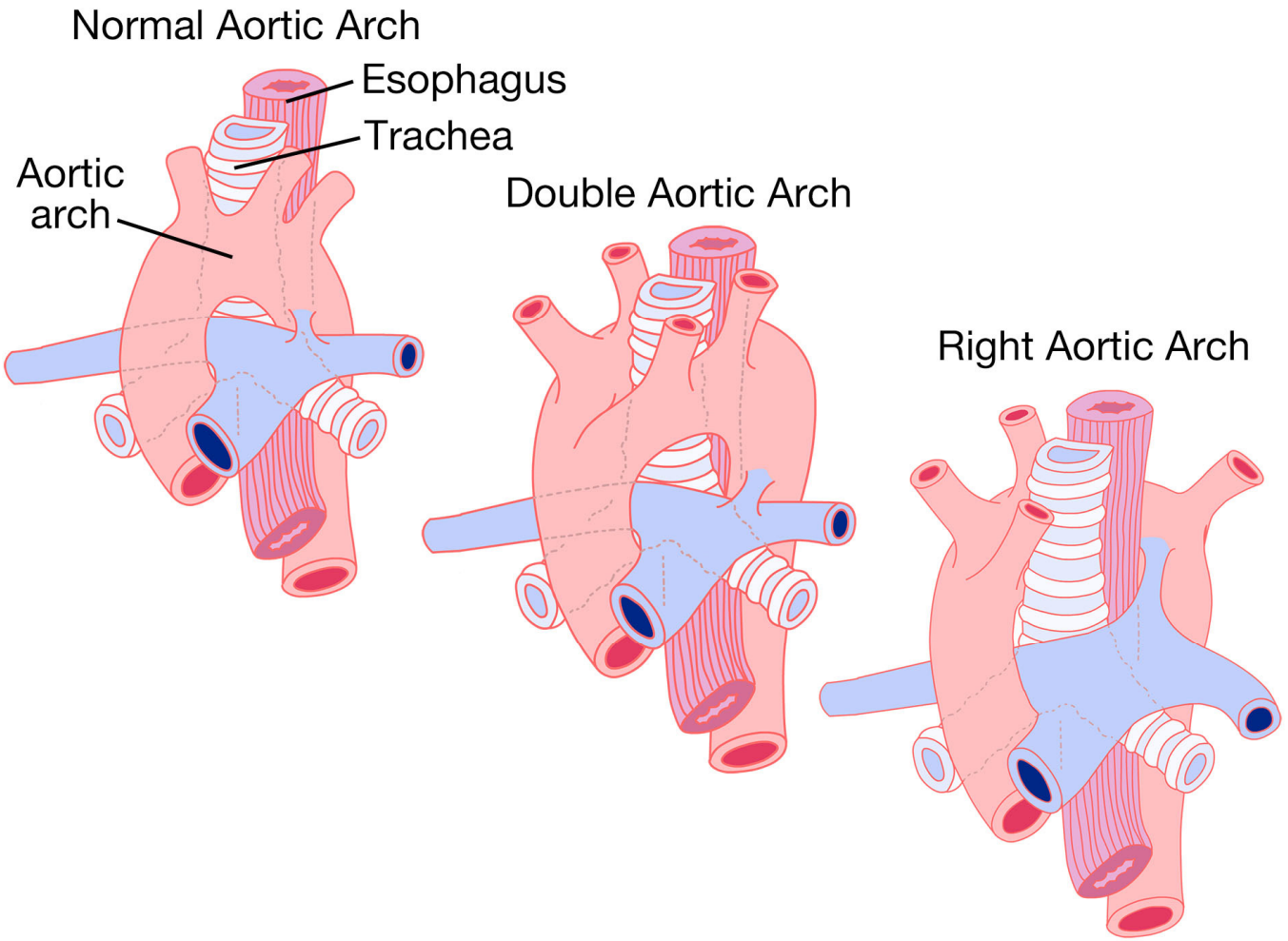


Dubbele aortaboog



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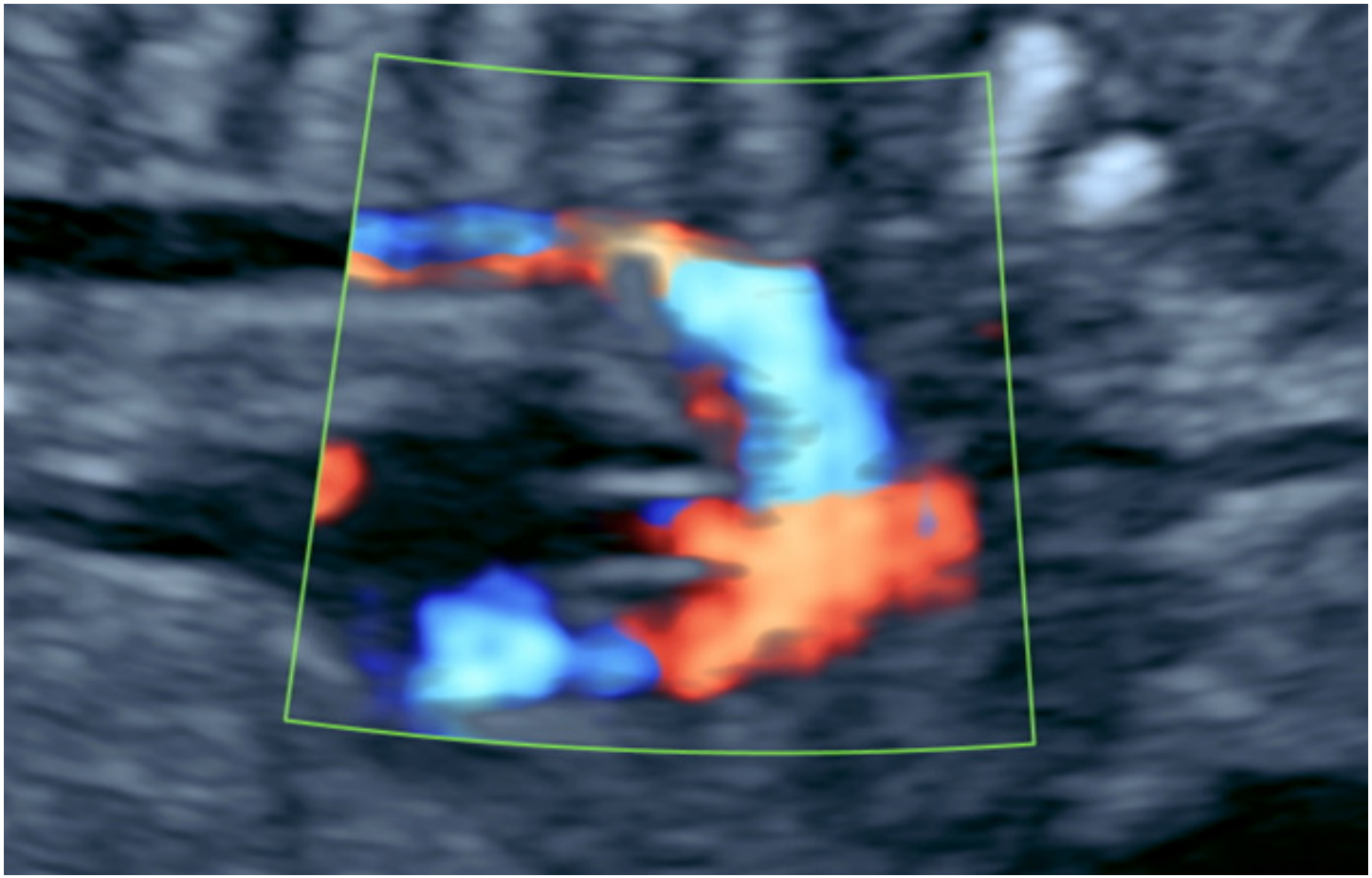
Aortabooghypoplasie



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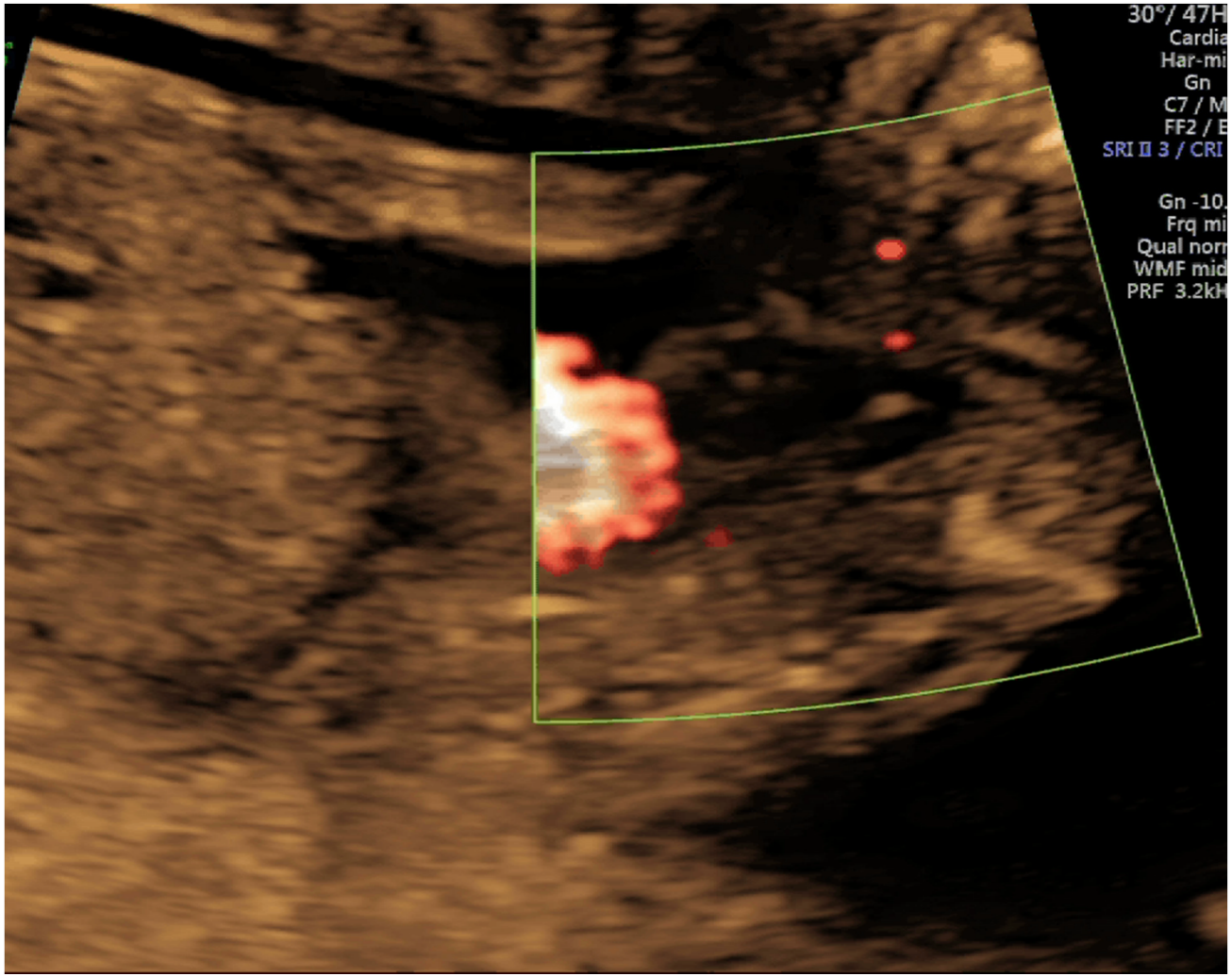
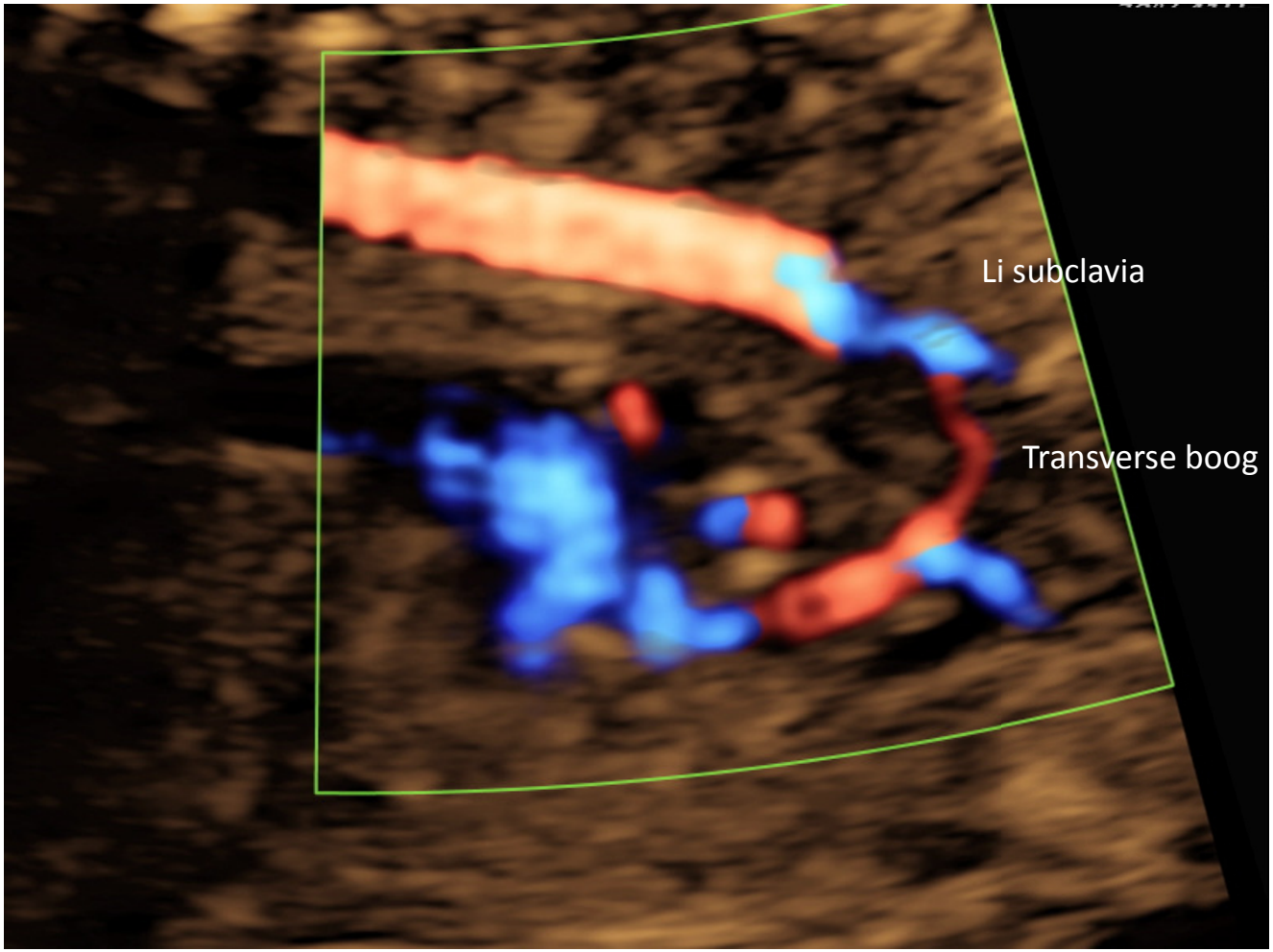
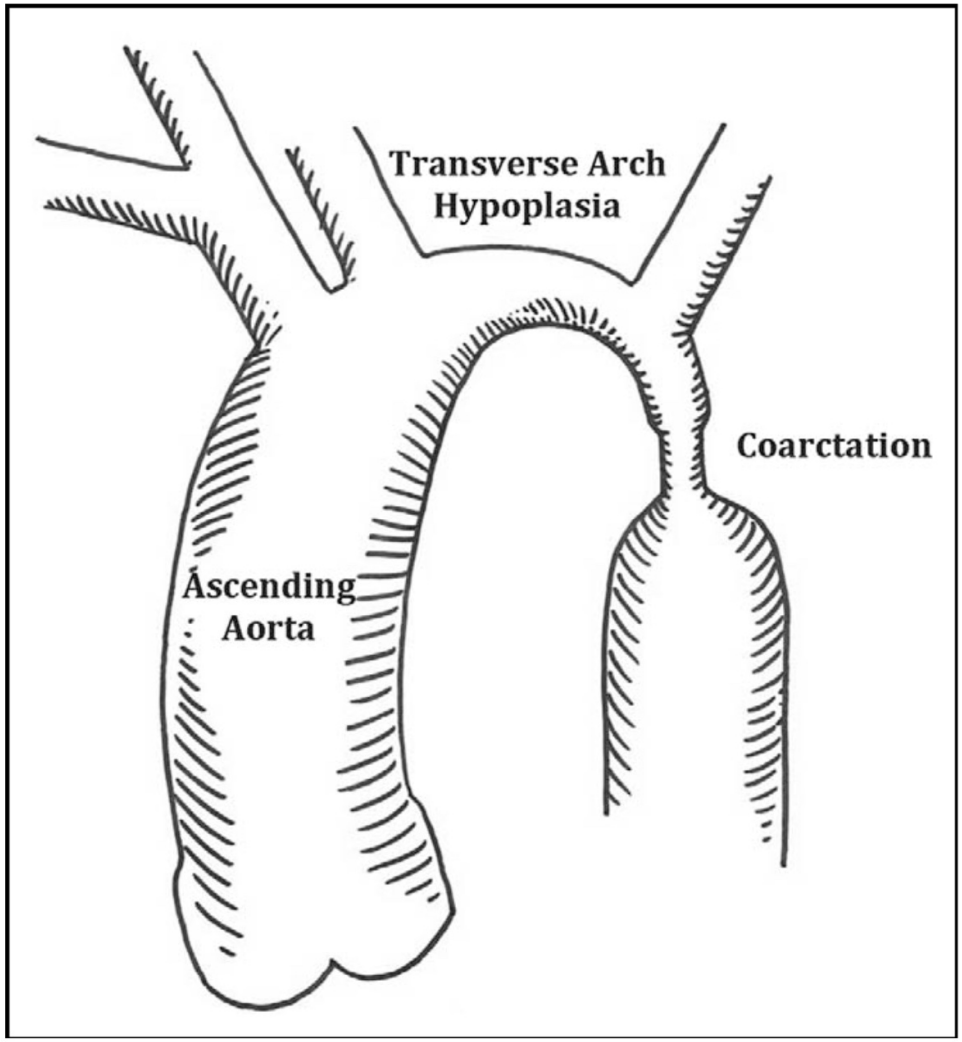


Aortabooghypoplasie



Aortabooghypoplasie



Wat kunnen we missen (en doen we)

Onze ogen zijn de ogen van de echoscopist en wat zij herkennen als afwijkend.

Aortaboogafwijkingen zijn lastig en antenataal niet altijd te herkennen

Veelbelovend: foetale cardiale MRI

Futurestudie, start mei 2020