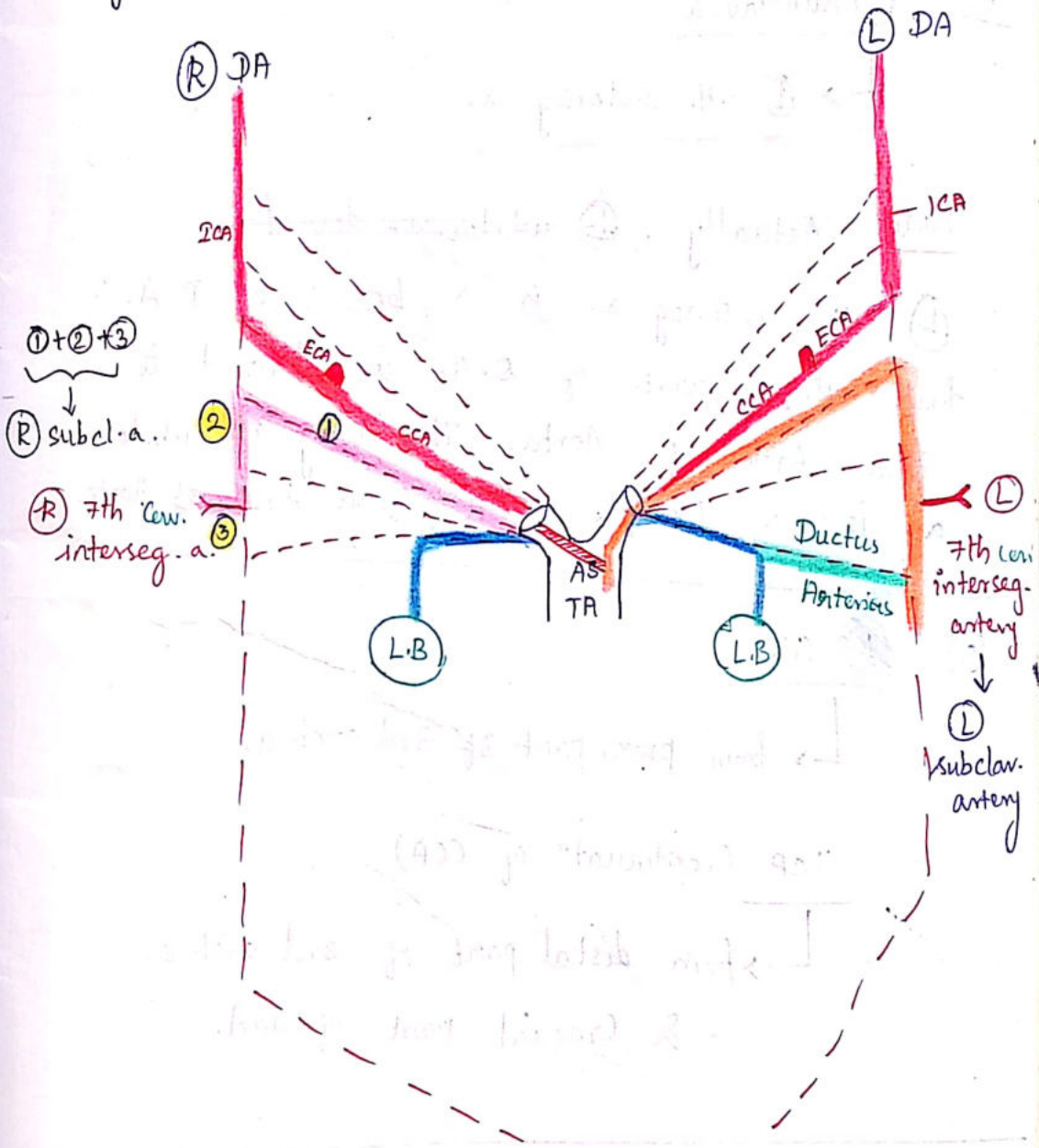
ARTERIAL SYSTEM DEVELOPMENT

* Below para axial meso., dorsal aorta. develops. in the dorsal aspect.

* During Cranio-caudal folding, developing tubes. Heart comes to the ventral aspect.

* Heart tube will be Conn. to the Dorsal aorta by PHARYNGEAL ARTERIES (6).



* AS - Aortic sac < RH / LH
* L.B - lung Buds.
* TA - Truncus Arteriosus.
* D.A - Dorsal Aorta.

Ch of Aorta

↳ develops from.

i) Aortic sac.

ii) L.H. of Aortic sac
(Left Horn)

iii) (L) 4th arch artery

iv) (L) D.A.

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(2): (L) subclav. a.

↳ (L) 7th interseg. a.

Note: Actually, ~~(L) subclav. a. dev. from~~

(L) 7th interseg a. is a branch of D.A. but that part of D.A. is utilized to form Arch of Aorta. That's why (L) subclav a. is a branch arising from Arch of Aorta

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(3) CCA :

↳ from prox. part of 3rd arch a.

ICA (continuatn of CCA)

↳ from distal part of 3rd arch a. & Cranial part of D.A.

→ from RH of Aortic Sac.

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(5) (R) Subclav. a.

in order to communicate with the (R) 7th Interseg. a to form (R) subcl. a, other (2) components of (R) 4th arch, (R) D.A & join with (R) 7th Interseg. a. to form (R) subclav. a.

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6) pulmonary arteries:

↳ R&L lung lobes are invaded by (prox.) part of 6th arch artery to form the R&L Pulmonary arteries

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(distal) part of 6th arch a.

⇓

develops into Ductus arteriosus which connects (L) pulm a. with Arch of aorta

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* 1st arch a. doesn't give rise to any a.
& it remains as MAXILLARY a. (a. of 1st arch)
(Br. of ECA).
L's IIIrd arch

* 2nd arch a. → Remnant is. Stapedial a. & Hyoid a

* 3rd arch a. → prox → CCA
→ dist → ICA.

* 4th arch a. → Arch of Aorta & ® subclav. a.

* 5th arch a. → disappears.

* 6th arch a. → R & L pulm. a. & Ductus a.

— X — X —

Clinical: Abnormal subclav. a.

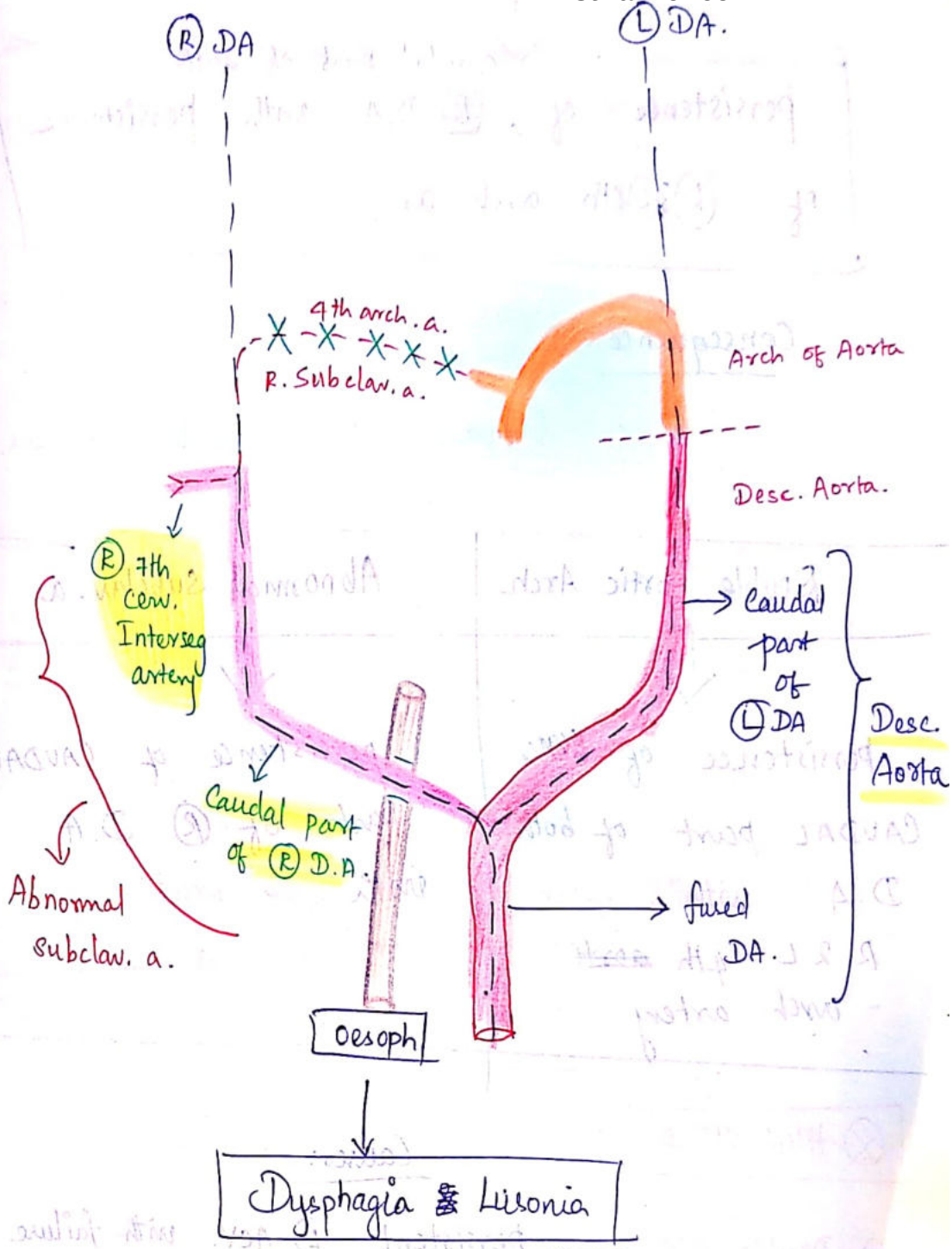
If 4th arch. a. ~~disappears~~ obliterates. then abnormal ® subclav. a. is formed from caudal part of ® D.A & ® 7th cerv. I/s a.

Consequence: Dysphagia lusoria.

~~(OR)~~ in other words →

Persistence of caudal ® D.A with OBLITERATION of ® 4th arch a.

Formation of Desc. Aorta → part of (L) DA ⊕ Fused DA



DOUBLE AORTIC ARCH

⇓

persistence of caudal part of both D.A with persistence of (R)&(L) 4th arch a.

Consequence: VASCULAR RING.

⇓

Compression of Trachea & Oesophagus.

Double Aortic Arch	Abnormal Subclav. a
⇓	⇓
persistence of CAUDAL part of both D.A with persistent R & L 4th arch artery	persistence of CAUDAL part of (R) D.A with obliteratn of 4th arch a.

⊗ HIGH YIELD

Causes:

1) Double SVC. → persistent (L) ACV. with failure of formn of oblig. Anastomosis

2) Double IVC. → persistent (L) PCV. with failure of formn of anast. b/n (R) & (L) PCV.
(OR) persistent (L)-sacro-cardinal vein.

3) Double Arch of Aorta.
→ persistent caudal D.A. on both sides with persistent (4th) arch a. on both sides.