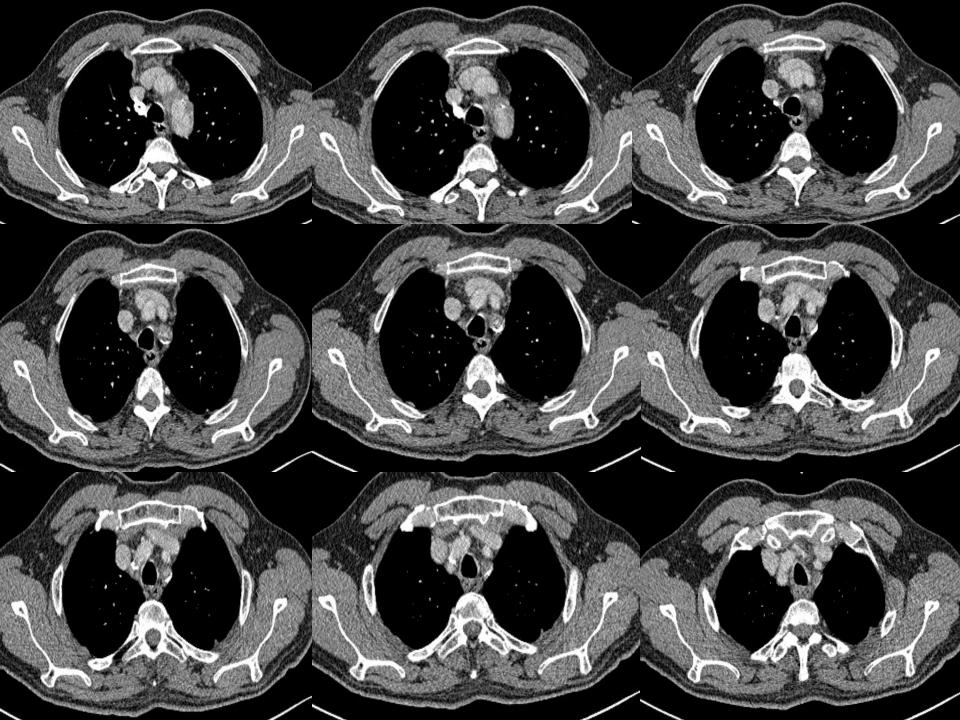
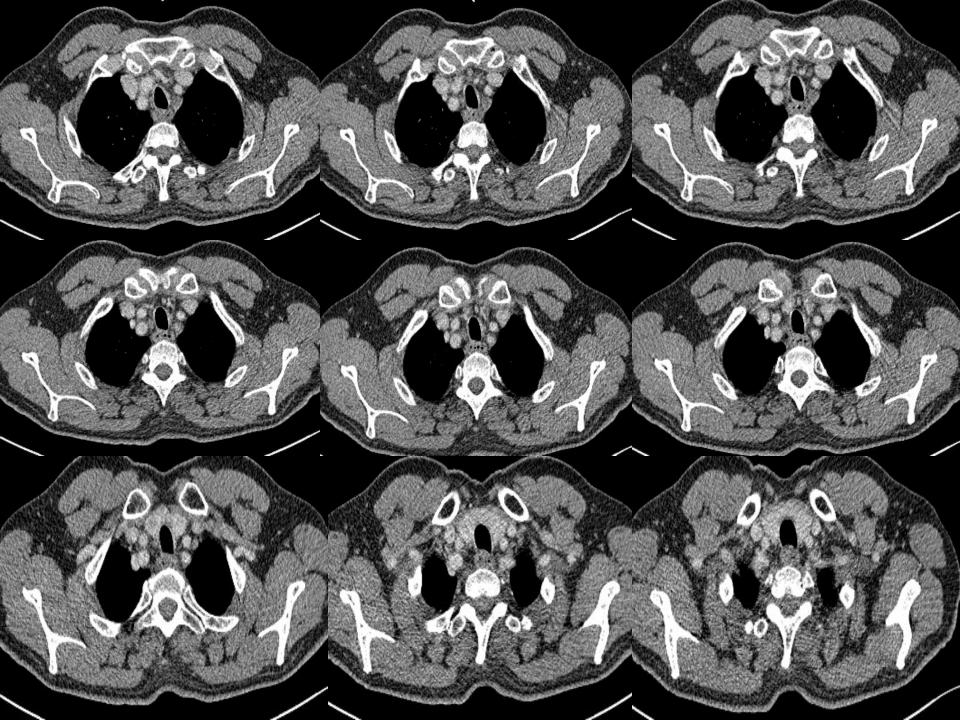
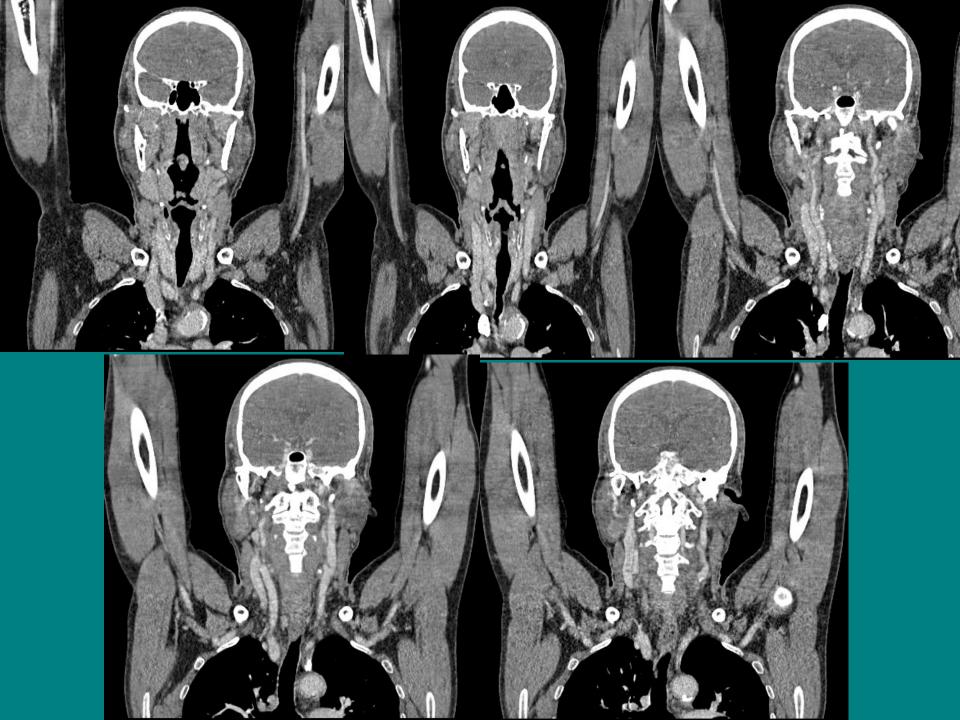
## History

- Male, 62 years old
- A transient syncope
- Sphygmus: 72 times/min, left--weak
- Blood pressure : right arm—110/70 mmHg

left arm—70/50 mmHg







- Possible diagnosis?
- Why?

# Final diagnosis

- wall calcification, stenosis; thrombosis can not be excluded
- Clinical diagnosis: Subclavian Steal Syndrome (SSS)

# Subclavian Steal Syndrome

Definition: Subclavian steal syndrome is the proximal subclavian artery or innominate artery obstruction (caused by a variety of reasons), Subclavian artery distal intraluminal pressure decreased, ipsilateral blood pressure below the vertebral – basilar arterial pressure --- syphonage, so result in SSS

## Clinical manifestations

- upper limb symptom: Some patients complained of weakness, numbness and pain when the upper limbs exercise
- Vertebrobasilar insuficiency symptom: Syncope, dizziness, vertigo, standing instability and occipital pain is the most common complaint
- carotid artery insufficiency symptom: rarely, but can occur in the patient of innominate artery obstruction

## Physical findings

- Ipsilateral radial artery pulse weakened or disappeared, bilateral pulse nonsynchronization (delay 0.03 ~ 0.06s)
- Pressure differential (PD) >20 mmHg
  - (contralateral > Ipsilateral)

Only 16% of the patients with a PD 20mm Hg did not have SSS. This result suggests that arm BP differential 20mmHg is highly correlated with the presence of SSS)

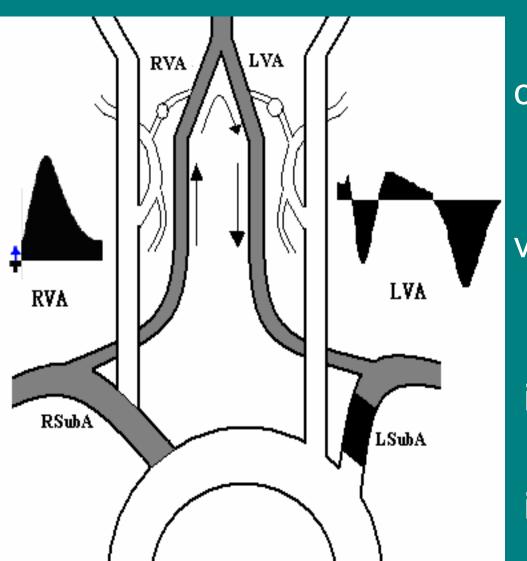
# Physical findings

- The ipsilateral supraclavicular fossa vascular bruit (systolic)
- Javid test: positive (after the oppression of the common carotid artery, radial artery pulse weakened)

# Pathogeny

- Arteriosclerosis (most common)
- Congenital malformations (aortic stenosis, subclavian artery distal atresia)
- Takayasu arteritis (tuberculosis, syphilitic aortitis)
- Tumor compression
- Radiotherapy

# SSS blood pathway (-) VA-VA



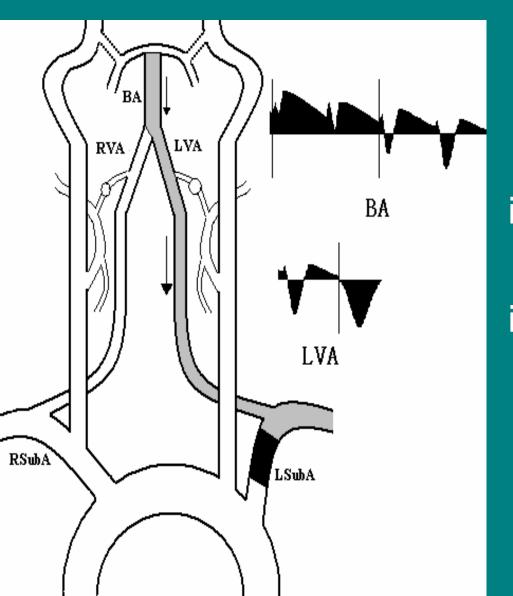
contralateral vertebral artery

vertebrobasilar artery confluence

ipsilateral vertebral artery

ipsilateral subclavian artery distal

#### SSS blood pathway (二) BA-VA



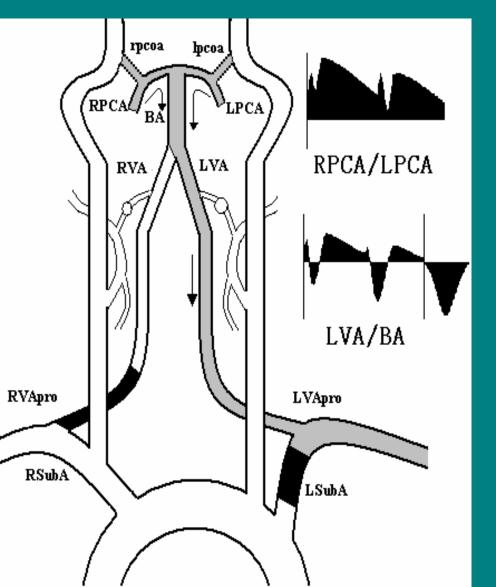
basilar artery

ipsilateral vertebral artery

ipsilateral subclavian

artery distal

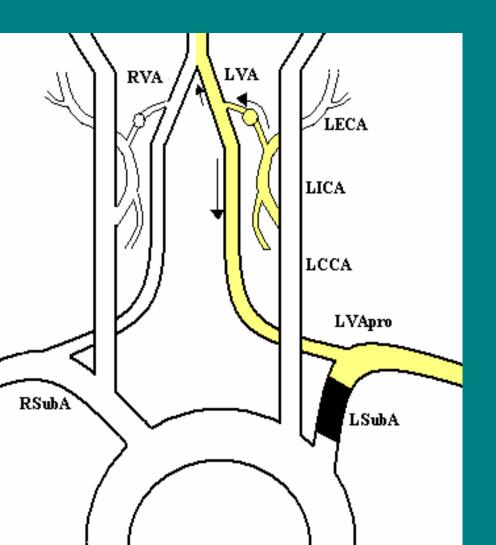
#### SSS blood pathway (三) PCA一BA一VA



posterior cerebral artery basilar artery ipsilateral vertebral artery ipsilateral subclavian artery distal

### SSS blood pathway (四)

OA-VA



external carotid artery branch occipital artery

occipital artery and vertebral artery anastomotic branch

vertebral artery

subclavian artery distal

# Diagnostic methods (—)

- Doppler ultrasound examination
  - Observe the blood flow
  - Wertebral artery appearing reverse spectrum is the typical performance of SSS

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