Ultrasound examination of the carotid arteries

Anatomy:

There are two common carotid arteries (one at each side of the neck):

-the right begin at bifurcation of the brachiocephalic artery.

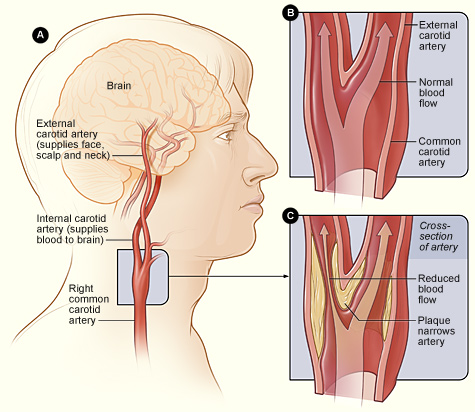
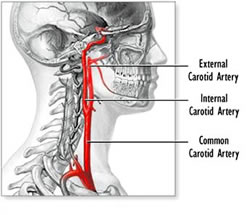
-the left comes from the highest part of the arch of the aorta.

Each common carotid artery divided into:

External carotid artery : which supply the exterior of the head ,the face and the greater part of the neck.

Each common carotid artery divided into:

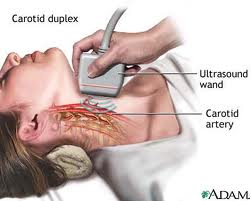
Internal carotid artery: which supply the remaining part of the head within the cranial and orbital cavities.



Technique:

1-Patient is supine with head turned slightly away from the side being examined.

2- Both patient and sonographer must be comfortable because the examination takes 20-30 min .



Probe:

High frequency (7-10 MHz) linear array transducer.

Carotid sonography requires:

Grey scale: is used to detect and evaluate the appearance of carotid plaque.

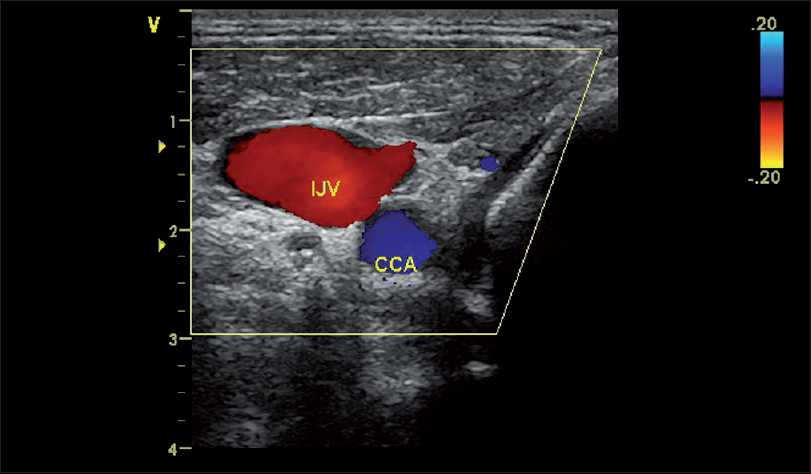
Colour Doppler: is used to identify vessels, blood flow, plaque and carotid wall thickening.

Spectral Doppler: this allows measurement of blood flow velocity and to evaluate stenosis.

Doppler angle:

Should be kept at <60 degrees to minimize measurement error.

Transverse image:



Longitudinal image and bifurcation :