anatomy of cranial contents

Radiological anatomy

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Radiological anatomy of cranial contents: Computed tomography:

A CT of the brain is a noninvasive diagnostic imaging procedure that uses special X-rays measurements to produce horizontal, or axial, images (often called slices) of the brain.

Brain CT scans can provide more detailed information about brain tissue and brain structures than standard X-rays of the head, thus providing more data related to injuries and/or diseases of the brain.

During a brain CT, the X-ray beam moves in a circle around the body, allowing many different views of the brain. The X-ray information is sent to a computer that interprets the X-ray data and displays it in a two-dimensional (2D) form on a monitor.

Brain CT scans may be done with or without "contrast." Contrast refers to a substance taken by mouth or injected into an intravenous (IV) line that causes the particular organ or tissue under study to be seen more clearly. Contrast examinations may require to fast for a certain period of time before the procedure.

Head CT Approach

First - evaluate normal anatomical structures, window for optimal brain tissue contrast

Second – assess for signs of underlying pathology such as: mass effect, edema, midline shift, hemorrhage, hydrocephalus, subdural or epidural collection/hematoma, or infarction

Third – evaluate sinuses and osseous structures with bone windows

Fourth – use a soft tissue window to assess extracranial anatomy – orbits, face, scalp

Red – Cerebellar Hemisphere
Blue – Cerebellar Vermis
Green – Medulla
Pink – Masticator muscles
Orange – Maxillary sinus

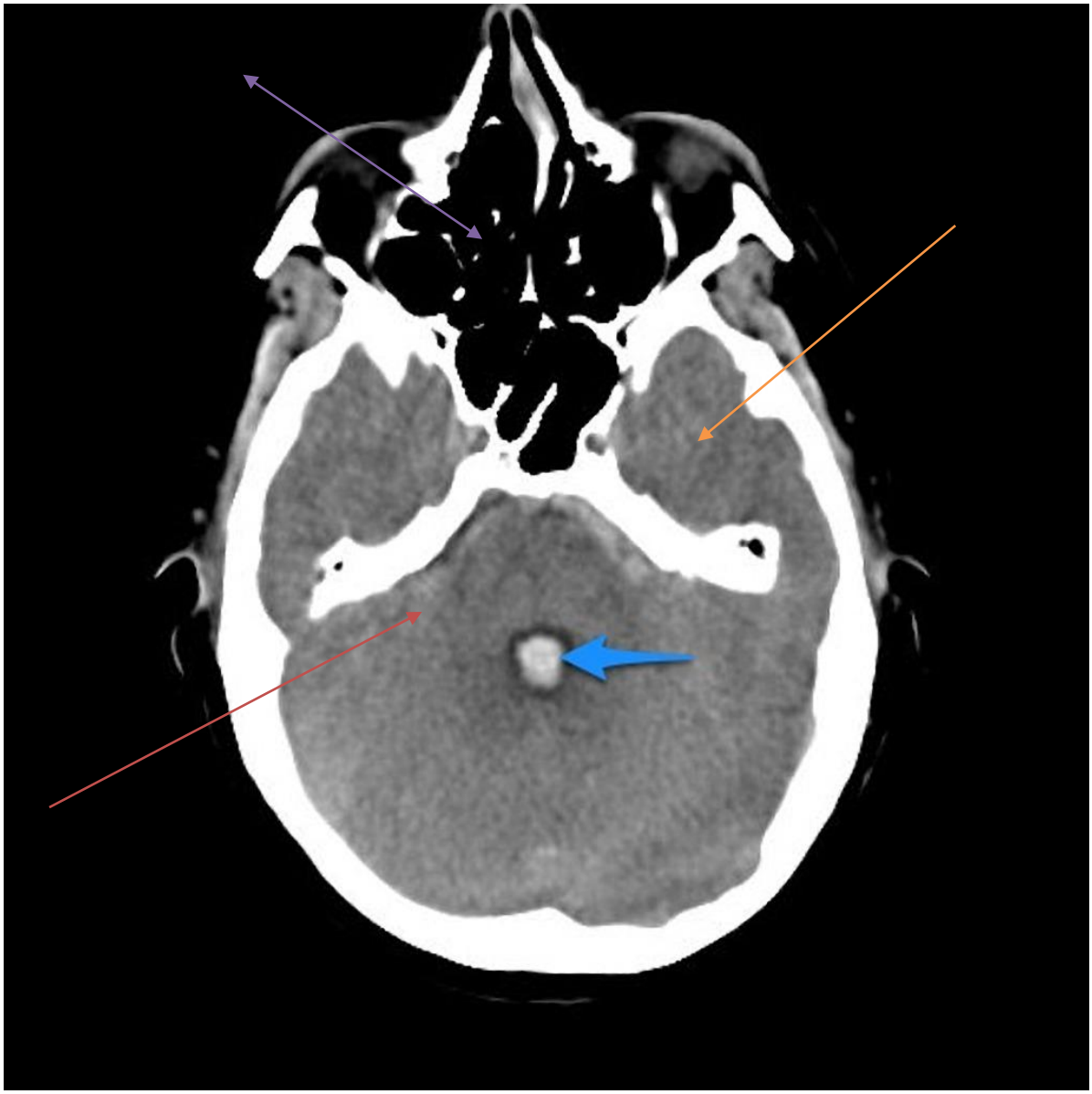
Anatomy – Level of the Pons

Purple – Sphenoid sinus

Red – Middle cerebellar peduncle

Orange – Temporal lobe

Blue – Fourth ventricle



Anatomy – Midbrain Level

blue – Ethmoid sinus

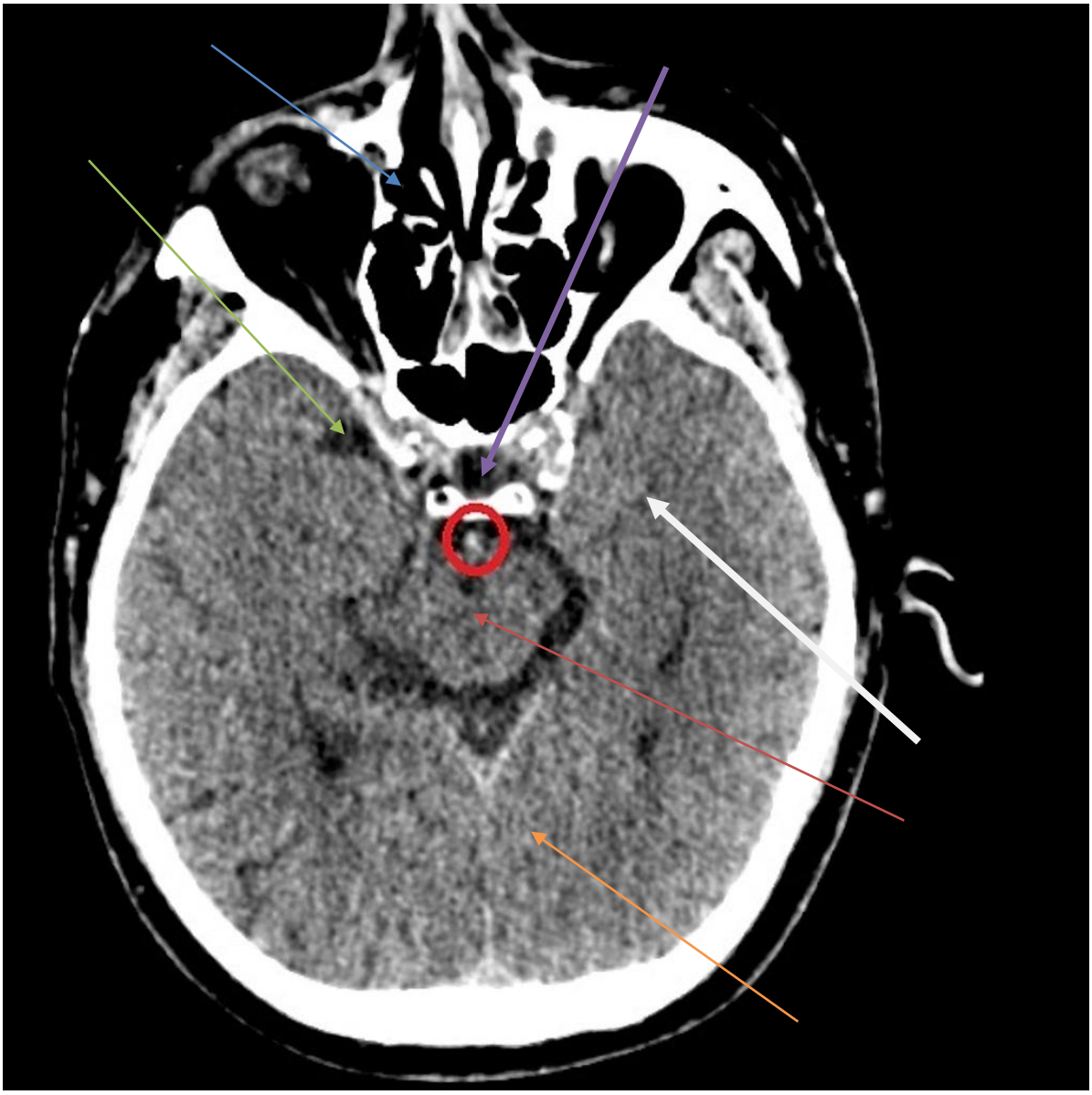
Purple – Sellar fossa

Red – Cerebral aqueduct

green – Temporal horn of ventricular system

Orange – Occipital lobe

White – Middle cerebral artery, note that it is isodense to gray matter



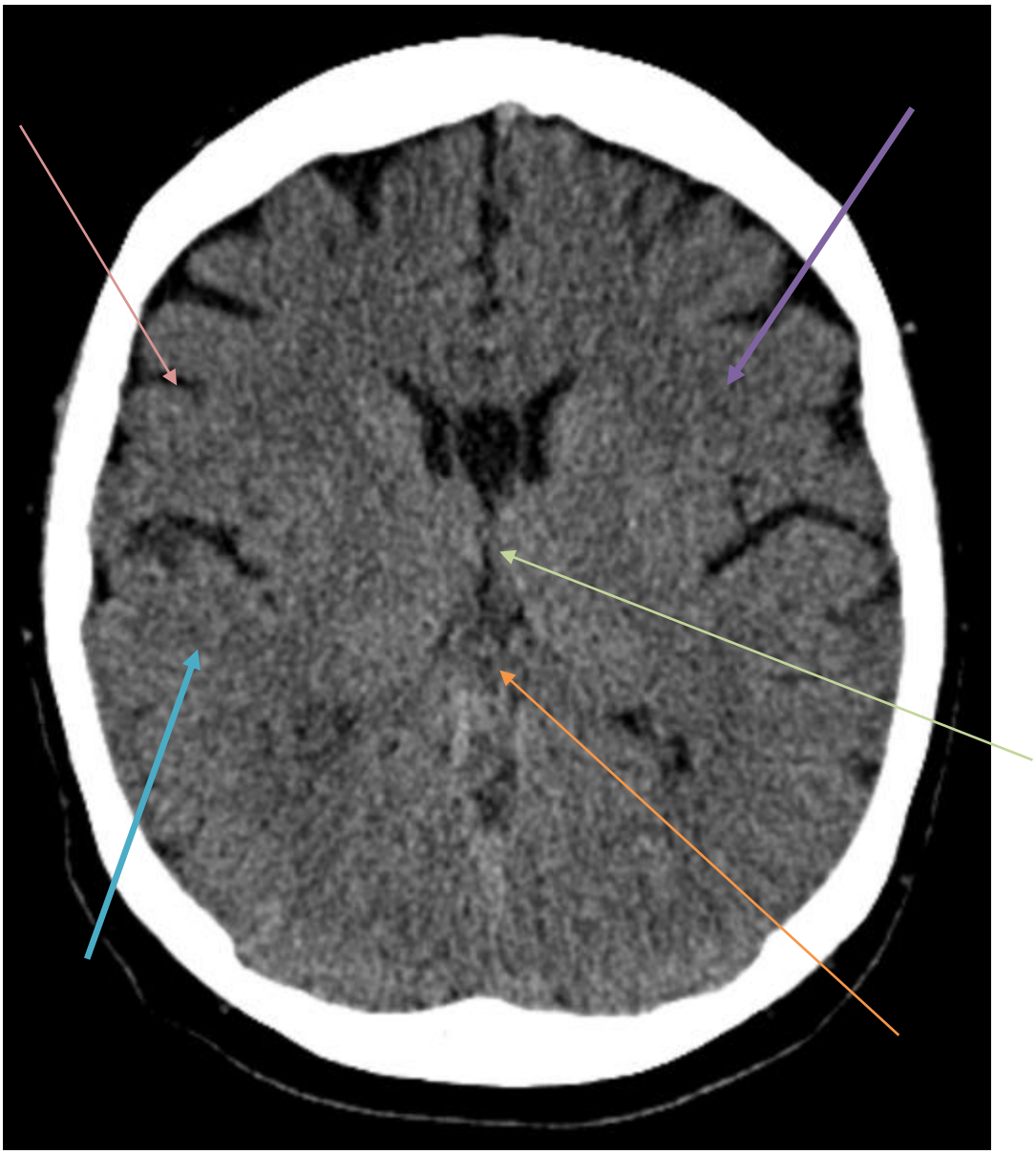
Green – Third Ventricle

Purple – Frontal lobe

Red – Sylvian fissure

Blue – Temporal lobe

Orange – Quadrigeminal Plate cistern

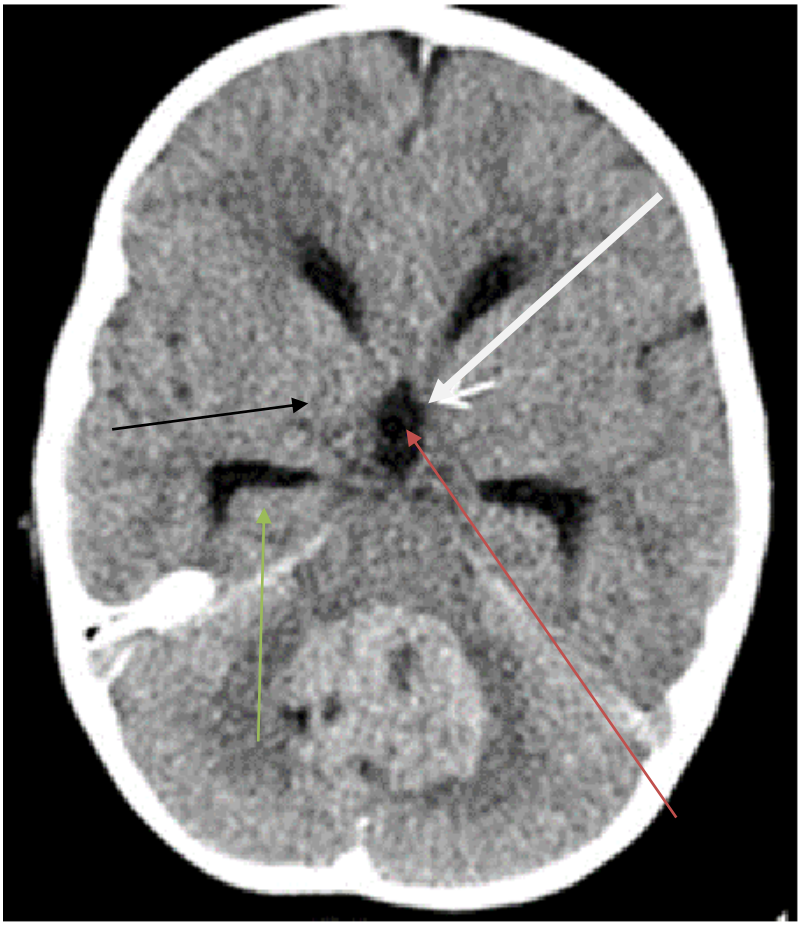


White – genu of the corpus callosum

Red – splenium of the corpus callosum

Black – thalamus

Green – choroid plexus in lateral ventricle



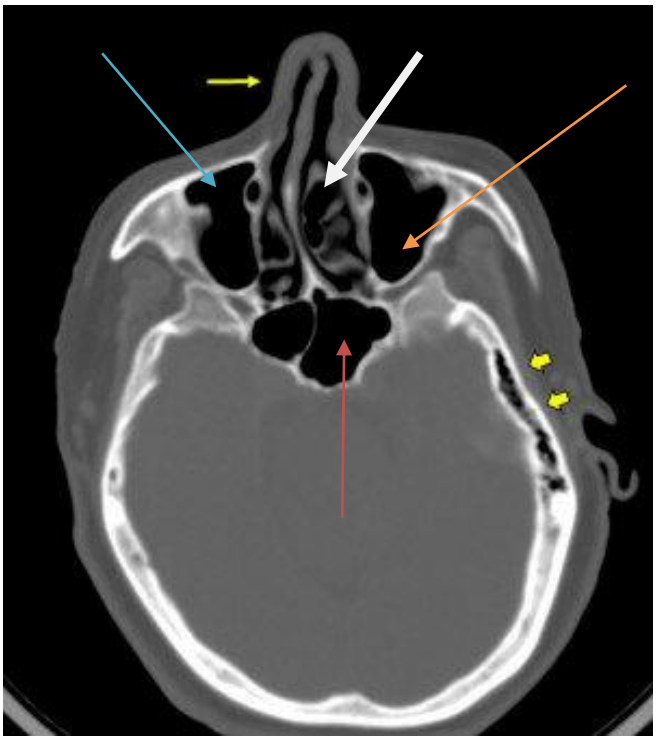
Sinuses in the Axial Plane

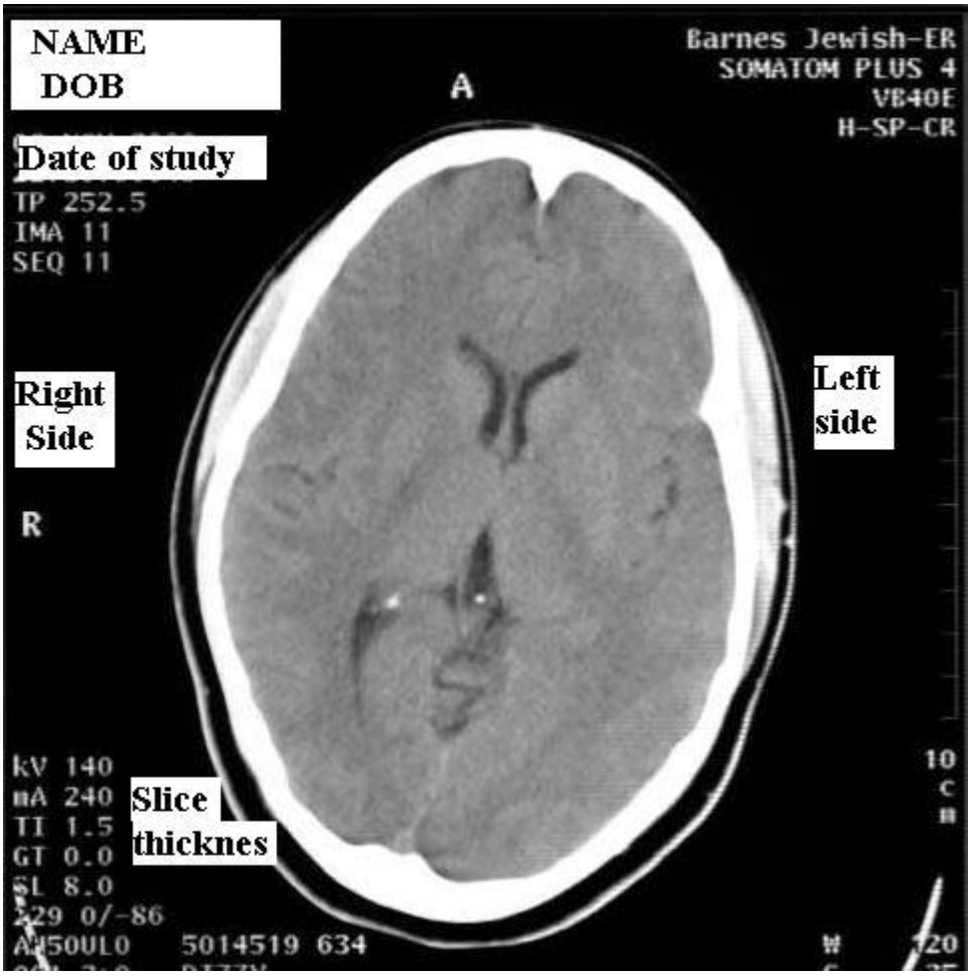
Red :frontal sinus,

white : ethmoid sinus

blue : maxillary sinus

orange :sphenoid sinus

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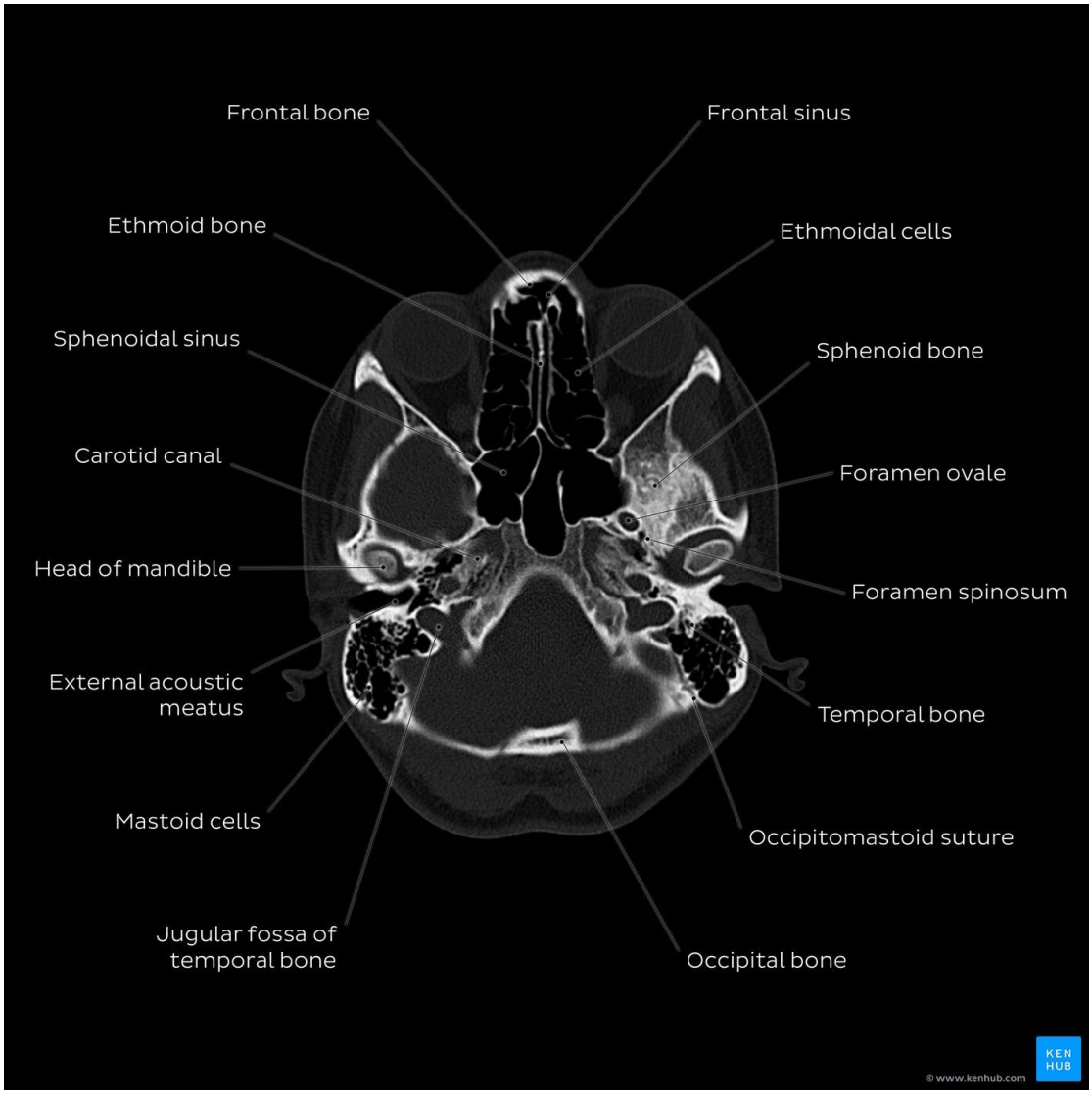
Frontal bone
Frontal sinus
Ethmoid bone
Ethmoidal cells
Sphenoidal sinus
Sphenoid bone
Carotid canal
Foramen ovale
Head of mandible
Foramen spinosum
External acoustic meatus
Temporal bone
Mastoid cells
Occipitomastoid suture
Jugular fossa of temporal bone
Occipital bone
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