

RADIOLOGY CHECKLISTS FOR HEADACHE

Imaging Findings	Cause
Brain and CSF Spaces	
Rim-enhancing mass with surrounding white matter edema	Brain abscess
Rim-enhancing mass with surrounding white matter edema; multiple lesions with metastatic ds	Brain tumor
Thickened and/or enhancing meninges	Meningitis
Abnormal density/SI in the subarachnoid space	Subarachnoid hemorrhage
Mass with characteristic “bag of worms” appearance	Arteriovenous malformation
Crescent shaped extra-axial lesion	Subdural hematoma
Abnormal density/SI in the brain parenchyma	Intraparenchymal hemorrhage
Brain swelling; abnormal signal/density and enhancement	Encephalitis
Lentiform shaped extra-axial lesion of variable density/SI	Epidural hematoma
Empty sella; flattened pituitary gland; distended peri-optic subarachnoid space	Idiopathic intracranial hypertension (Pseudotumor cerebri)
Enhancing meninges, widened subarachnoid space (subdural effusion/hematoma), descent of the brain	Intracranial hypotension
Abnormal brain density/SI; brain swelling; abnormal enhancement; restricted DWI; associated hemorrhage	Stroke
Dilated ventricles; abnormal flow in ventricles	Hydrocephalus – obstructive
Cerebellar tonsil ectopia; peg-like tonsils; dilated ventricles; flattened spinal cord; syrinx; elongated fourth ventricle; small posterior fossa	Chiari malformation
Meningeal enhancement; brain masses	Sarcoidosis
Brain swelling; abnormal SI and enhancement	Trauma: Post-concussive
Vasculature	
Thick, enhancing temporal artery margins	Temporal arteritis
Narrowing or lack of filling	Carotid or vertebral artery dissection
Filling defect in the venous sinus; associated venous intraparenchymal hematoma	Venous sinus thrombus
Contrast-enhancing mass along the course of a vessel	>2 cm aneurysm
Paranasal Sinuses	
Mucus membrane thickening or enhancement; sinus fluid levels	Sinusitis
Bones and Joints	
Disc narrowing, osteophytic spurring, disc herniations, neural compression	Cervical radiculopathy from disc disease
Degenerative changes of the TMJ	TMJ dysfunction
NO SPECIFIC IMAGING FEATURES ON CT OR MRI	
Cluster headache, migraine headache, tension headache, systemic infection with fever, drugs, hypertension, glaucoma, tic douloureux, hypoglycemia, carbon monoxide poisoning, hypercapnea,	

hypoxia, dialysis, eyestrain, TIA, CSF leak

FND = focal neurologic deficit; MSC = mental status changes; Sz = seizures; N/V = nausea/vomiting; SI = signal intensity; CN = cranial nerve; UE = upper extremity; SAH = subarachnoid hemorrhage; IPH = intraparenchymal hemorrhage

COMBINED CHECKLIST/TEMPLATE FOR CT BRAIN UNENHANCED IN PATIENTS WITH HEADACHE

CT BRAIN UNENHANCED

INDICATION: Headache. [+Review chart/questionnaire for fever or elevated WBC (abscess, headache from fever), worst or first headache (intraparenchymal hemorrhage).+]

COMPARISON: []

TECHNIQUE: Axial unenhanced head CT was performed. Images were reviewed at a workstation allowing multiplanar reformatting.

Brain and CSF spaces: [+No mass (primary or metastatic tumor, abscess, AVM, intraparenchymal hemorrhage, sarcoidosis) or swelling (infiltrating tumor, infiltrating infection/encephalitis, contusion, pseudotumor cerebri, stroke)+]. [+No extra-axial crescent (subdural hematoma, subdural effusion from intracranial hypotension), lens (epidural hematoma), or mass (meningioma, other primary tumors, metastatic disease) identified.+] [+No abnormal increased density (subarachnoid hemorrhage) identified.+] [+No extension into the sella or pituitary gland flattening (pseudotumor cerebri) identified.+] [+No distension (hydrocephalus), fluid level (hemorrhage), mass (tumor), distortion (parenchymal or extra-axial masses or parenchymal swelling) or compression (pseudotumor cerebri) identified.+] [+Normal position of cerebellar tonsils (Chiari I malformation).+]

Vasculature: [+No focally enlarged intracranial artery (aneurysm) or dense middle cerebral artery (middle cerebral artery occlusion from thrombus) identified.+]

Paranasal sinuses: [+No sinus opacification, membrane thickening, or fluid level (sinusitis).+]

Nasal cavity and nasopharynx: []

Otomastoid findings: [+No mastoid air cell opacification, membrane thickening, or fluid level (mastoiditis). No middle ear fluid (otitis).+]

Bones and joints: [+Normal TMJ joints (no arthritis). Normal visualized cervical discs (degenerative disc disease).+]

Orbits: []

IMPRESSION:

[+Normal unenhanced head CT. Specifically, no cause of the patient's headache is identified.+]

BRAIN MRI IN PATIENTS WITH HEADACHE

MRI BRAIN UNENHANCED [<AND CONTRAST ENHANCED>]

INDICATION: Headache. [+Review chart/questionnaire for fever or elevated WBC (abscess, headache from fever), worst or first headache (intraparenchymal hemorrhage).+]

COMPARISON: []

TECHNIQUE: Unenhanced brain MR was performed. [<An enhanced brain MR was performed following intravenous injection of>] [(volume/type of IV contrast).+]

INTERPRETATION:

Brain and CSF spaces: [+No mass (primary or metastatic tumor, abscess, AVM, intraparenchymal hemorrhage, sarcoidosis) or swelling (infiltrating tumor, infiltrating infection/encephalitis, contusion, pseudotumor cerebri, stroke).+] [+No abnormal brain enhancement (infiltrating tumor, encephalitis, stroke, AVM, aneurysm).+] [+No restricted diffusion (stroke).+] [+No extra-axial crescent (subdural hematoma, subdural effusion from intracranial hypotension), lens (epidural hematoma), or mass (meningioma, other primary tumors, metastatic disease).+] [+No abnormal meningeal enhancement (meningitis, meningeal carcinomatosis).+] [+No distension (hydrocephalus), fluid level (hemorrhage), mass (tumor), distortion (parenchymal or extra-axial masses or parenchymal swelling) or compression (pseudotumor cerebri).+] [+No abnormal signal on T2* images (subarachnoid hemorrhage).+] [+Normal position of cerebellar tonsils (Chiari I malformation).+]

Pituitary gland and pineal: [+Normal sized sella (pseudotumor cerebri with empty sella, expansion from tumor) and normal size and contrast enhancement of the pituitary gland (pituitary adenoma or metastatic deposit).+]

Vasculature: [+No focally enlarged intracranial artery (aneurysm).+] [+No narrowing or lack of contrast flow in the arteries (stenosis, dissection).+] [+No lack of contrast flow in the superior sagittal sinus or cavernous sinus (sinus thrombosis).+]

Paranasal sinuses: [+No sinus opacification, membrane thickening or enhancement, or fluid level (sinusitis).+]

Nasal cavity and nasopharynx: []

Otomastoid findings: [+No mastoid air cell opacification, membrane thickening, enhancement, or fluid level (mastoiditis). No middle ear fluid (otitis).+]

Bones and joints: [+Normal TMJ joints (no arthritis). Normal visualized cervical discs (degenerative disc disease).+]

Orbits: []

IMPRESSION:

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