

2019 ASNR Neuroradiology CDE (text format)

AO SPINE TLICS Classification

Level: Level

Fracture type: Type:A1: Compression-one endplate/A2: Compression- both endplates/A3: Compression/Partial burst - one endplate and posterior wall/A4: Compression/Burst - both endplates and posterior wall/B1: Tension Band injury- Posterior, transosseous/B2: Tension band injury - Posterior, osseous and ligamentous/B3: Tension band injury - Anterior/C: Subluxation

Modifiers: Modifiers:M1: Indeterminate injury to tension band/M2: Patient specific comorbidity (ankylosing bone disease)

AO Upper Cervical Spine Trauma CDEs

Location: Upper cervical spine location AOSPINE:Occipital condyle and craniocervical junction/C1 ring and C1-2 joint/C2 and C2-3 joint

Type: AOSpine Upper cervical spine injury type:Type A: Osseous only, no significant ligamentous, tension band, or disc injury/Type B: Ligamentous/tension band injury (with or without osseous injury; without complete separation of anatomic integrity)/Type C: Translation and separation of anatomic integrity

Modifiers: AOSpine upper cervical trauma modifier:M1: High risk of nonunion with nonoperative treatment/M2: Injury with significant potential for instability/M3: Patient specific factors affecting treatment (e.g. ankylosing disorders)/M4: Vascular injury

CDE Baseline Glioma MRI (VASARI featureset)

Lesion location

Tumor center: VASARI - F1:frontal/temporal/insula/parietal/occipital/brainstem/cerebellum/lentiform nuclei/caudate/thalamus/corpus callosum

Side of tumor center: VASARI -F2:right/center/bilateral/left

Maximum x-sectional 2D lesion dimensions: VASARI - F29cm X VASARI - F30cm

Tumor origin: VASARI - F34:periventricular/deep white matter/gyral/other

Eloquent brain: VASARI - F3:No eloquent brain/speech motor/speech receptive/motor/vision

Morphology of lesion substance

Enhancement quality: VASARI - F4:No contrast enhancement/Mild/Marked/No contrast injected

Proportion enhancing: VASARI - F5:>2/3/between 2/3 and 1/3/< 1/3/minimal/No enhancement/No contrast injected

Proportion nCET: VASARI - F6:>2/3/between 2/3 and 1/3/< 1/3/Minimal/None

Proportion necrosis: VASARI - F7:>2/3/between 2/3 and 1/3/< 1/3/Minimal/None

Proportion edema: VASARI - F14:>2/3/between 2/3 and 1/3/< 1/3/Minimal/None

Tumor heterogeneity: VASARI - F31:Completely homogeneous/Minimal heterogeneity (<5%)/Moderately heterogenous (1/3 - 2/3)/Mostly heterogenous (>2/3rds)/Cannot evaluate

Tumor shape: VASARI - F32:Round/circular/spherical/Ovoid/Lobulated/Irregular/None applicable

Tumor cysts: VASARI - F8:Present/Absent

Multifocal or multicentric: VASARI - F9:Focal/Multifocal or multicentric/Gliomatosis

T1/FLAIR ratio: VASARI - F10:No FLAIR images/T1~FLAIR/T1<FLAIR/T1<<FLAIR

Morphology of lesion margin

Thickness of enhancing margin: VASARI - F11:No contrast injected/No contrast enhancement/Minimal/Thick/nodular (=>3mm)/Solid

Definition of enhancing margin: VASARI - F12:No contrast injected/No contrast enhancement/Completely well-defined (100%)/Mostly well-defined (>2/3rds)/Mixed (@ 50-50)/Mostly poorly-defined (>2/3rds)/Completely ill-defined (100%)

Definition of the non-enhancing margin (e.g. grade III): VASARI - F13:Completely well-defined (100%)/Mostly well-defined (> two thirds)/Mixed (@ 50-50)/Mostly poorly-defined (> two thirds)/Completely ill-defined (100%)/No nCET

Alterations in vicinity of lesion

Hemorrhage: VASARI - F16:No/Yes/Indeterminate

Diffusion: VASARI - F17:> 2/3 below or equal to normal brain/1/3 – 2/3 below or equal to normal brain/< 1/3 below or equal to normal brain/Minimal (< 5%)/None/Indeterminate/No ADC images

Leptomeningeal invasion: VASARI - F18:Absent/Present

Ependymal invasion: VASARI - F19:Absent/Present

Cortical involvement: VASARI - F20:Absent/Present

Deep white matter invasion: VASARI - F21:None/Corpus callosum/Internal capsule/Brainstem

nCET crosses midline: VASARI - F22:No nCET/No/Yes

Enhancing tumor crosses midline: VASARI - F23:No contrast enhancement/No contrast injected/No/Yes

Satellites: VASARI - F24:Absent/Present

Calvarial remodeling: VASARI - F25:Absent/Present

Overall morphology: VASARI - F33:Butterfly/Well-defined lobar central nidus surrounded by edema/NCET/Poorly-defined lobar nidus surrounded by edema/NCET/Mostly enhancing or necrotic lobar nidus with little surrounding edema/NCET/None apply

CDE Brain MS

Supratentorially, there are Supratentorial Lesion Number T2/FLAIR hyperintensities in cerebral white matter including Supratentorial Lesion side:left/right/bilateral Lesion locations:frontal/parietal/occipital/temporal lobes. These lesions are primarily Lesion location subtype:juxtacortical/periventricular/other. Infratentorially, there are Infratentorial lesion number T2/FLAIR hyperintensities in brainstem including Infratentorial lesion side:left/right/bilateral/central Infratentorial location:midbrain/pons/medulla/cerebellum. Additional lesions Cervico medullary lesions:are/are not seen in the visualized upper cervical spinal cord. There Mass effect:is/is no associated mass effect Specific lesion with mass effect. There Black holes present:are/are no T1 hypointense (“black holes”) Black hole locations.

Proposed impression categories for follow-up brain tumor reports

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Follow-up brain tumor impression Score: BT-RADS Impression Score:0/1a/1b/2/3a/3b/3c/4

MRI OF THE BRAIN WITHOUT AND WITH IV CONTRAST

CLINICAL INDICATION: brain tumor

Tumor Type & Mutations: [tumor type]

Surgical history: [surgical history]

Radiation history: [radiation history]

Relevant Medications: [medications]

TECHNIQUE: Detailed description of technique tailored to institution/examination.

COMPARISON: [last comparison date]

FINDINGS:

TUMOR:

Location: [tumor location]

FLAIR:

[change in FLAIR at primary tumor site]

[presence of new sites of FLAIR abnormality]

Enhancement:

[change in enhancement at primary tumor site]

[presence of new sites of enhancement]

Perfusion: [perfusion findings, if performed]

Diffusion: [diffusion findings]

Posttreatment changes: [brief description of other postsurgical findings]

OTHER:

[presence of acute infarction]

[presence of new/significant hemorrhage]

[hydrocephalus]

[herniation]

[presence of new/unexpected fluid collection]

IMPRESSION:

1. [Brain tumor] status posttreatment. [brain tumor surveillance score]
2. [Other relevant findings]

Cerebral Amyloid Angiopathy: Modified Boston Criteria

Lobar hematoma: Boston criteria - lobar

hematoma:none/Frontal/Temporal/Parietal/Occipital/Cerebellar/Brainstem

Hematoma size: Boston criteria - hematoma size

Microhemorrhage: Boston criteria - microhemorrhage:none/one/2 - 5/> five

Microhemorrhage location: Boston criteria - microheme location:none/cortical/subcortical

Siderosis: Boston criteria - siderosis:none/focal/diffuse

Summary: Boston criteria:Probable CAA: multiple lobar, cortical, or subcortical hemorrhages of varying ages without another cause/Probable CAA: single lobar, cortical, or subcortical hemorrhage and focal or disseminated superficial siderosis without another cause/Possible CAA: single lobar, cortical or subcortical hemorrhage without another cause/Possible CAA: focal or disseminated superficial siderosis without another cause/no evidence of CAA

CDE CT Paranasal Sinus Inflammatory Disease

The frontal sinuses are Frontal sinus. The frontoethmoidal recesses are Frontoethmoidal recess.

The ethmoid sinuses ethmoid sinuses. The lateral lamella:right/left/bilateral lateral lamella are lamella position:normal in position/elongated with Keros class Keros class:I/II/III/IV/V/VI. The anterior ethmoid arteries are Ant ethmoid art:normal/exposed.

The maxillary sinuses are Maxillary sinuses. The uncinat processes are Uncinate processes:normal/lateralized. The maxillary infundibulum are Maxillary infundibula. The osteomeatal units are Osteomeatal units.

The sphenoid sinuses are Sphenoid sinuses. The sphenoid sinuses are Sphenoid sinus.

Sinus variants: Sinus Variants Sinus variant details.

There is Osteoneogenesis osteoneogenesis. The nasal septum is Nasal septum. The mastoid air cells are Mastoid air cells. The non-enhanced nasopharyngeal mucosal surfaces are Nasopharynx. The temporal mandibular articulations are TMJ.

The maxillary dentition demonstrates Maxillary teeth abnormal periapical lucencies extending into the floor of the maxillary sinus.

CDE CT Acute Stroke

There Hyperacute signs:is no/is loss of gray matter density or grey/white matter discrimination in the Location in the Vascular territory:ACA/MCA/PCA/PICA/AICA/SCA/lentic/basil perforator/thalamoperf/AntChor territory.

There Hemorrhagic conversion:is/is no hemorrhagic conversion. There Mass effect:is/is no mass effect.
There Midline shift midline shift. There Herniation:is no/is subfalcial/is transtentorial herniation.

There Hydrocephalus:is/is no hydrocephalus.

The ischemic pattern is Ischemic pattern:embolic/perforator/borderzone ischemia.

There Hyperdense vessel:is/is no hyperdense Hyperdense artery:middle cerebral/anterior cerebral/intrasylvian cortical/basilar artery sign. There Arterial Calcification:is/is no arterial calcification.

There Venous thrombus:is/is no dense thrombus inSinus location dural venous sinus or cortical vein.

The ASPECTS score is estimated to be ASPECTS:0/1/2/3/4/5/6/7/8/9/10.

CDE CTA Carotid Atherosclerotic

Aortic arch type: CTA - aortic arch type:1/2/3

Aortic arch atherosclerosis grade: CTA - arch atherosclerosis:none/mild/moderate/severe

Anatomic variants: CTA - aortic arch variants:three vessel/two vessel (common trunk)/left VA origin from aortic arch/anomalous right subclavian

Left carotid artery:

Occlusion: CTA - left occlusion:no/chronic occlusion/acute occlusion

Bifurcation level: CTA - left bifurcation level:C2/C2-3/C3/C3-4/C4/C4-5/C5/C5-6/C6/C6-7

Stenosis (NASCET):CTA - left bifurcation stenosis NASCET

Plaque characterization: CTA - left bifurcation plaque character:normal/fibrous/fatty/calcified

Stenosis location: CTA - left stenosis location:ICA origin/carotid bulb/proximal ica

CCA/ICA Carotid angle (>60 degrees): CTA - left carotid CCA/ICA angle >60 degrees:yes/no

Tandem ostial stenosis: CTA - tandem ostial stenosis left:yes/no

Tandem cavernous stenosis: CTA - tandem cavernous stenosis left:yes/no

Right carotid artery:

Occlusion: CTA - right occlusion:no/chronic occlusion/acute occlusion

Bifurcation level: CTA - right bifurcation level:C2/C2-3/C3/C3-4/C4/C4-5/C5/C5-6/C6/C6-7

Stenosis (NASCET):CTA - right bifurcation stenosis NASCET

Plaque characterization: CTA - right bifurcation plaque character:normal/fibrous/fatty/calcified

Stenosis location: CTA - right stenosis location:ICA origin/carotid bulb/proximal ica

CCA/ICA Carotid angle (>60 degrees): CTA - right carotid CCA/ICA angle >60 degrees:yes/no

Tandem ostial stenosis: CTA - tandem ostial stenosis right:yes/no

Tandem cavernous stenosis: CTA - tandem cavernous stenosis right:yes/no

Epidural spinal cord compression grade and level of greatest compression: Level

ESCC:0/1a/1b/1c/2/3

number field

CDE Laryngeal CA

There is a mass in the larynx which measures Larynx AP mm measurement mm AP by Larynx RL mm measurement mm RL by Larynx CC mm measurement mm CC. The mass center is Larynx mass center:glottic/subglottic/supraglottic. The mass shows Larynx mass enhancement:enhancement/no enhancement. The mass larynx mass midline extension:does not/does extend across the midline and it mass larynx mass airway narrowing:does not/does narrow the airway. The vocal cord is laryngeal mass - cord mobility:moble/immobile. There laryngeal mass - prevert invasion:is/is no prevertebral invasion and there laryngeal mass - carotid space invasion:is left/is no/is right carotid space invasion.

There laryngeal mass - cartilage invasion:is thyroid/is no/is cricoid/is arytenoid/is tracheal ring cartilage invasion. There laryngeal mass - extension beyond skeleton:is/is no extension outside the laryngeal skeleton.

CDE Leukoariosis Scale

Leukoariosis grade: Leukoariosis scale (Fazekas):Normal/Grade 1 (Mild): focal or punctate lesions/Grade 2 (Moderate): early confluent lesions/Grade 3 (Severe): confluent lesions

CDE Lumbar degenerative disc disease

Level: Degenerative lumbar spine - disc level:T12-L1/L1-2/L2-3/L3-4/L4-5/L5-S1

There DDD lumbar - disc space narrowing: is/is no disc space narrowing. The vertebral endplates are DDD - endplate morphology: smooth/irregular/irregular with schmorly's nodes. There are DDD - Modic endplate changes: no/type I/type II/type III endplate changes. The intervertebral disc is DDD - disc morphology: normal in morphology/diffusely bulging/bulging asymmetrically to the left/bulging asymmetrically to the right/protruding centrally/protruding to the right of midline/protruding to the left of midline/extruded centrally/extruded to the right of midline/extruded to the left of midline with a degenerative (Pfirman) grade of DDD - Pfirman degenerative grade: I: homogeneous/II: central band visible/III: distinction between nucleus/annulus/IV: poor nucleus/annulus distinction/V: collapsed disc space. The right facet joint is DDD - right facet degen: normal/mildly degenerated/moderately degenerated/severely degenerated. The left facet joint is DDD - left facet degen: normal/mildly degenerated/moderately degenerated/severely degenerated.

The central canal is DDD - central canal stenosis: normal/mildly stenotic/moderately stenotic/severely stenotic. The right subarticular recess is DDD - rt subarticular recess: normal/mildly stenosed/moderately stenosed/severely stenosed. The left subarticular recess is DDD - lt subarticular recess: normal/mildly stenosed/moderately stenosed/severely stenosed. The right neural foramen is DDD - rt neural foramen: normal/mildly stenosed/moderately stenosed/severely stenosed. The left neural foramen is DDD - left neural foramen stenosis: normal/mildly stenosed/moderately stenosed/severely stenosed. There is DDD - root compression side: no/left/right root compression; DDD - root compression grade: 0: normal/1: contact/2: deviation/3: compression (Pfirman grade).

CDE Lymph Nodes

Single/multiple: single/multiple present in the Node side: left/right/bilateral neck. The largest node/cluster: node/cluster measures Long axis measure mm in long axis.

Involved surgical levels include level(s): Nodal levels nodes. There Extracapsular spread: is/is no] definite radiologic evidence of extracapsular spread. There is Central necrosis: is/is no evidence of central necrosis. The enhancement pattern is Enhancement pattern: cystic/solid]. These nodes Drainage pattern: are/are not in the expected drainage pattern of the primary tumor.

There is Invasion y/n: y/n of invasion of critical structures. There is Carotid invasion y/n: y/n invasion of the carotid artery. There is Prevertebral invasion y/n: y/n invasion of the prevertebral space.

NIRADS category

Primary: NIRADS primary category: 1/2a/2b/3/4

Nodes: NIRADS node category: 1/2/3/4

CDE Medial Temporal Lobe Atrophy Scale

MTA (medial temporal atrophy) Score: Medial temporal atrophy scale:0: No CSF seen around the hippocampus/1: Mild widening of the choroidal fissure/2: Moderate widening of the choroidal fissure, mild enlargement of the temporal horn, mild loss of hippocampal height/3: Marked widening of the choroidal fissure, moderated enlargement of the temporal horn, moderate loss of hippocampal height/4: Marked widening of the choroidal fissure, marked enlargement of the temporal horn, hippocampal atrophy and loss of internal structure

Significance (based on age): MTA significance based on age:Normal/Abnormal (<=75 years and MTA is 2 or more)/Abnormal (>75 years and MTA is 3 or 4)

CDE Brain MS Initial-Baseline study

Supratentorial: There are 0, 1, 2, 3, 4, ≥5, numerous T2/FLAIR hyperintensities in cerebral white matter including left/right frontal, parietal, occipital, temporal lobes. These lesions are juxtacortical, periventricular, other.

Infratentorial: there are 0, 1, 2, 3, 4, ≥5, numerous T2/FLAIR hyperintensities in brainstem including left/right/central midbrain, pons, medulla, as well as left/right cerebellar white matter. Additional lesions are/are not seen in the visualized upper cervical spinal cord.

Mass effect: There is/is not associated mass effect regarding a particular lesion to suggest tumefactive lesion.

Black Holes: Total of 0, 1, 2, 3, 4, ≥5, numerous lesions have associated near CSF T1 hypointensity to suggest "black holes" including following locations:

Post Contrast: Enhancing lesions are seen in 0, 1, 2, 3, 4, ≥5 of the white matter lesions including following locations:.

Overall Disease Burden: none/mild/moderate/severe.

Brain Atrophy: none/mild/moderate/severe.

CDE Multiple Sclerosis Spine

There Lesion number: is a/are several T2 hyperintense lesion(s) within the cord: cervical/thoracic spinal cord. The Lesion / largest: lesion/largest lesion measures Lesion size mm in the craniocaudal dimension and spans Vertebral segment: 1/2/3/greater than 3 vertebral segment(s).

This lesion is located Center / periphery: within the center/at the periphery of the spinal cord and occupies Cross-section: less than 50%/greater than 50% of the cross-sectional area of the cord in the axial plane. The lesion is T1 appearance: iso/hypo intense on T1 and Enhancement: does/does not

enhance post contrast. There Cord edema:is/is no associated cord edema and there Cord expansion:is/is no cord expansion, extending from Upper boundary to Lower boundary.

CDE Pituitary Microadenoma

A focal mass focal mass:is/is not present at the Side:left/right/central/NA aspect of the pituitary. Maximum dimension is size mm. The lesion borders are borders:well-defined/ill-defined/NA. Without contrast, relative to the normal pituitary, the lesion is T1 T1 intensity:hyperintense-fat/hyperintense-not fat/heterogeneously hyperintense/hypointense/NA/isointense and T2 T2 intensity:hyperintense/heterogeneously hyperintense/hypointense/isointense/NA. Following infusion of contrast, the lesion relative to the normal pituitary is postcontrast signal:hypoenhancing/isointense/hyperenhancing/heterogeneously enhancing/NA. The infundibulum is infundibulum location:midline/left/right/anterior/posterior and size is infundibulum size:normal/enlarged. The infundibulum infundibulum enhancement:enhances/does not enhance. The posterior neurohypophysis bright spot posterior bright spot:is present/is not present/is ectopic.

CDE Pituitary Macroadenoma

A focal mass focal mass:is/is not present at the Side:left/right/central/NA aspect of the pituitary.

Borders are borders:well-defined/ill-defined/NA.

Without contrast, relative to the normal pituitary, lesion is T1 T1 intensity:hyperintense-fat/hyperintense-not fat/heterogeneously hyperintense/hypointense/NA/isointense and T2 T2 intensity:hyperintense/heterogeneously hyperintense/hypointense/isointense/NA.

With contrast, relative to the normal pituitary, lesion is postcontrast signal:hypoenhancing/isointense/hyperenhancing/heterogeneously enhancing/NA.

Maximum size in three dimensions is AP mm AP x transverse mm transverse x craniocaudal mm craniocaudal.

Suprasellar extension suprasellar extension:is present anteriorly/is present posteriorly/is present on the left/is present on the right/is not present. Suprasellar extension demonstrates suprasellar extension configuration:a snowman configuration (extends through the diaphragma sella)/dural extension/NA. Suprasellar extension is chiasm:prechiasmatic/postchiasmatic/NA.

CN2 CN2:is compressed/is not compressed at the segment:optic chiasm/cisternal segment/optic radiation/NA. Optic pathway optic pathway abnormal signal:demonstrates/does not demonstrate abnormal signal.

Cavernous sinus extension:cavernous sinus:is present/is not present/NA. Extension into the cavernous sinus is carotid artery:medial to the cavernous internal carotid artery/extends up to the midpoint of the cavernous ICA/extends beyond the midpoint of the cavernous ICA but not beyond the lateral margin of the cavernous ICA/extends beyond the lateral aspect of the cavernous ICA/encases the cavernous ICA/NA. Encasement of the internal carotid artery is carotid encasement:partial/complete/NA. Internal carotid artery is patency:patent/not patent.

The mass sphenoid sinus:extends into/does not extend into the sphenoid sinus and clivus:extends into/does not extend into the clivus.

Infundibulum is infundibulum location:midline/left/right/anterior/posterior/not seen and size is infundibulum size:normal/enlarged/NA. Infundibulum infundibulum enhancement:enhances/does not enhance/NA.

Posterior hypophysis bright spot posterior bright spot:is present/is not present/is ectopic.

CDE Spinal Cord Injury

Upper boundary of edema: Cord segment:cervical/thoracic Body level:1/2/3/4/5/6/7/8/9/10/11/12 .Body subpart:1/2/3/4

Lower boundary of edema: Cord segment:cervical/thoracic Body level:1/2/3/4/5/6/7/8/9/10/11/12 .Body subpart:1/2/3/4

SCI epicenter: Cord segment:cervical/thoracic Body level:1/2/3/4/5/6/7/8/9/10/11/12 .Body subpart:1/2/3/4

Upper boundary of hemorrhage: Cord segment:cervical/thoracic Body level:1/2/3/4/5/6/7/8/9/10/11/12 .Body subpart:1/2/3/4

Lower boundary of hemorrhage: Cord segment:cervical/thoracic Body level:1/2/3/4/5/6/7/8/9/10/11/12 .Body subpart:1/2/3/4

BASIC Score: BASIC:0/1/2/3/4

CDE Spinal Instability Neoplastic Score & Epidural SC Compression Grade

Spinal Level: Spinal Level

LOCATION: Location:0/1/2/3

LESION QUALITY: Lesion Quality:0/1/2

ALIGNMENT: Alignment:0/2/4

COLLAPSE: Collapse:0/1/2/3

POSTERIOR ELEMENTS: Posterior element involvement:0/1/3

MECHANICAL BACK PAIN (if known): Mechanical back pain:0/1/3

SINS SCORE: SINS score

Level of greatest compression: Spinal level

Compression grade: Compression grade:0/1a/1b/1c/2/3

AO SPINE SLIC Classification

LEVEL: Level

FRACTURE TYPE: Type:A1: Compression-one endplate/A2: Compression- both endplates/A3: Compression/Partial burst - one endplate and posterior wall/A4: Compression/Burst - both endplates and posterior wall/B1: Tension Band injury- Posterior, transosseous/B2: Tension band injury - Posterior, osseous and ligamentous/B3: Tension band injury - Anterior/C: Subluxation

FACETS: Facets:F1: Nondisplaced, less than 1cm height, <40% lateral mass/F2: Displaced, >40% lateral mass/F3: Pedicolaminar fracture/F4: Subluxed/Dislocated/Bilateral

MODIFIERS: Modifiers:M1: Unclear integrity of posterior ligamentous complex/M2: Significant disc herniation/M3: Bone disease with ankylosis/M4: Vertebral artery injury