Un Radiólogo en La Red

Recursos en Neurorradiología

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Objetivo

- Presentar una selección de **recursos** de Internet útiles para la formación en Neurorradiología
- Son recursos **gratuitos** aunque pueden requerir suscripción

Advertencias

- La selección no puede ser ni exhaustiva ni imparcial
- La mayoría de estos recursos están en inglés
- Son exclusivamente recursos neurorradiológicos
- Enlace a los recursos al final a través de código QR

Guión

- Recursos básicos
- Currículos en Neurorradiología
- Colecciones de casos
- Conferencias en Youtube®
- Neurorradiología pediátrica
- Neurorradiología vascular intervencionista

Guión

- Recursos básicos
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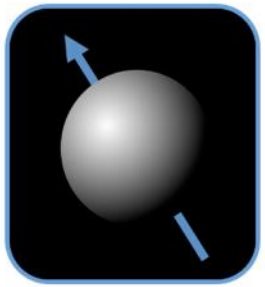
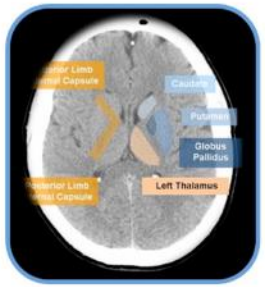
- Conferencias en Youtube®
- Neurorradiología pediátrica
- Neurorradiología vascular intervencionista

Learning Neuroradiology



Imaging Techniques

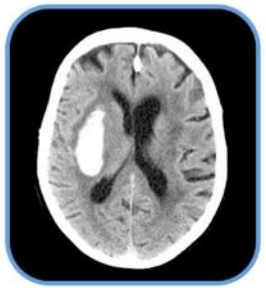
Anatomy



How To Read a Head CT

Pathology

Clinical Correlation



Cases

Head and Neck Anatomy

Classroom Sessions

Neuroradiology plays an integral role in the diagnosis and management of patients with Neurologic conditions. The site is designed to teach the basics of Neuroradiology.

Click on the icons or names along the main toolbar to take you to each section.

Disclaimer: The materials here serve only as general guidelines. Institutions, hospitals, and practitioners differ in their specific practices. No part of this curriculum is intended to replace proper medical training through graded supervision.

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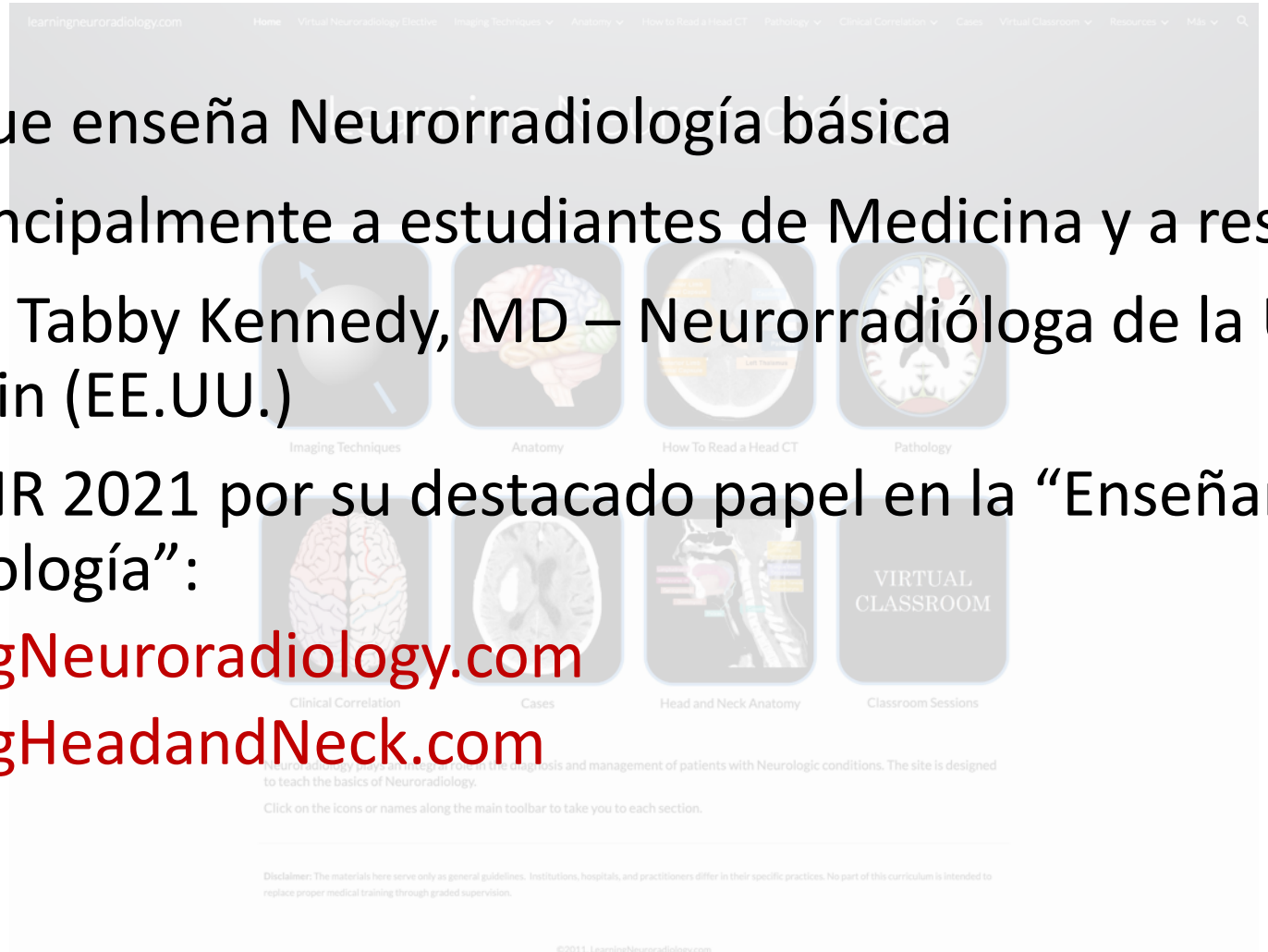
LearningNeuroradiology.com

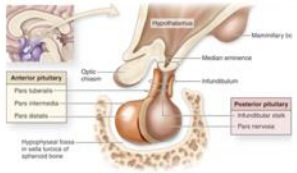


- Sitio *web* que enseña Neurorradiología básica
- Dirigido principalmente a estudiantes de Medicina y a residentes
- Editado por Tabby Kennedy, MD – Neurorradióloga de la Universidad de Wisconsin (EE.UU.)
- Premio ASNR 2021 por su destacado papel en la “Enseñanza de la Neurorradiología”:
  - LearningNeuroradiology.com
  - LearningHeadandNeck.com

Pituitary Gland

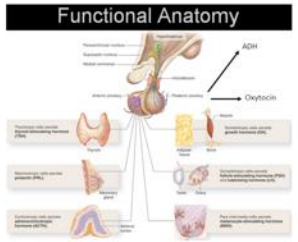
Overview

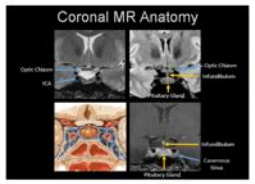
The pituitary gland is an important structure along the base of the brain that is integral in hormonal regulation. It is composed of an anterior gland and posterior gland which are anatomically, embryologically and functionally distinct. The pituitary gland sits within the sella turcica, which is a depression along the roof of the sphenoid bone.



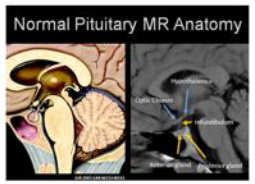
Embryology & Physiology

The anterior gland is derived from the upward migration of the embryologic mouth and is responsible for secreting TSH, PRL, GH, FSH/LH and MSH. The posterior gland is directly connected to the hypothalamus and results from the downward migration of the neuroectoderm from the diencephalon. The hypothalamus produces ADH and Oxytocin, which are then stored and released by the posterior gland.





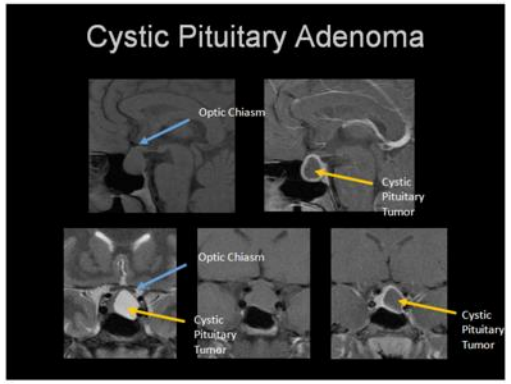
Coronal MR images of the pituitary gland and adjacent structures.



Sagittal MR image of the pituitary gland and adjacent structures.

It is important to recognize these relationships as patients with primary pituitary pathology may present with symptoms related to mass effect. It is not uncommon for patients with large pituitary tumors to present with bitemporal hemianopsia related to compression of the optic chiasm. The pituitary gland is outside of the blood brain barrier, which explains why it enhances normally after contrast.

The pituitary gland is in close proximity to a number of important structures. The anterior gland is similar in signal intensity to adjacent brain tissue on T1, whereas the posterior gland is often hyperintense (bright) on T1. Some believe that this bright signal is related to the lipid within the secretory granules used to store the hormones produced by the hypothalamus (Oxytocin)



This patient presented with symptoms related to mass effect on the optic chiasm. Notice how the cystic tumor of the pituitary gland compresses the undersurface of the chiasm.

NEXT

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How to Read a Head CT

Head CT Search Patterns

Head CT: Pneumonic

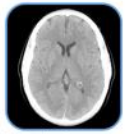
- H: Hemorrhage, Herniation, Hydrocephalus
- E: Edema-- Cytotoxic/Vasogenic
- A: Asymmetry, Artery
- D: Dura, Dural venous sinus
- C: Calvaria
- T: soft Tissues

Outside In

- Superficial soft tissues
- Bones
- Sinuses and Mastoid Air Cells
- Orbits
- Extra-axial spaces-- subarachnoid, subdural and epidural space
- Ventricles: too large, mass effect?
- Brain Parenchyma-- Mass effect, blurring of gray white? vasogenic edema

Inside Out

- Brain Parenchyma-- Mass effect? Blurring of gray white? Vasogenic edema? Hemorrhage?
- Ventricles: too large, mass effect?
- Extra-axial spaces-- subarachnoid, subdural and epidural space
- Orbits
- Superficial soft tissues
- Bones
- Sinuses and Mastoid Air Cells



To view through a normal head CT click on the picture above to view in Pacsbin

Find the following:

- Lobes: Frontal, Parietal, Occipital, Temporal
- Basal Ganglia and Thalamus
- Pituitary and Pineal Gland
- Brainstem: Midbrain, Pons, Medulla
- Middle Cerebral A., Basilar A, Sagittal Sinus
- Identify the 3rd Ventricle: Measure the HU in the ventricle
- Look at the bone window images and identify the Maxillary sinus: What HU measured in sinus?

To view this scrollable set of images in Pacsbin click on the image above

To view this scrollable set of images in Radiopaedia click on the image above

The appearance of normal structures on a head CT will often vary by age. Here are 3 different normal head CT's in patients of different ages. Take a look and see if you can identify changes.

Head CT 1 yo

Head CT 25 yo

Head CT 75 yo

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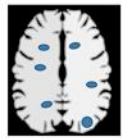
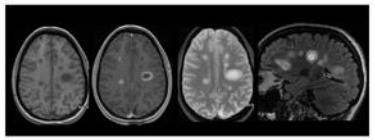
Demyelinating Disease

Asymmetric Pattern

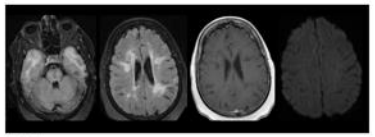


Multiple Small Ovoid Lesions

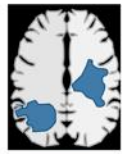
Multiple Sclerosis
ADEM
Vascular (SVID, Vasculitis, CADASIL, Susac Syndrome)
Lyme Disease



Multiple Sclerosis

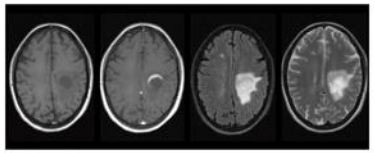


CADASIL

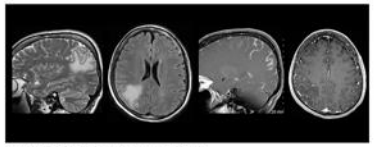


Large Geographic

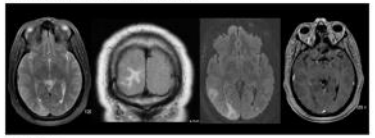
Tumefactive MS
ADEM
PML, Lyme Disease
Inflammatory Amyloid



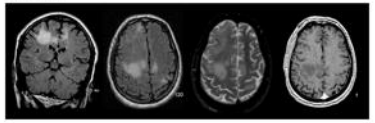
Tumefactive MS



Cerebral Amyloid Angiopathy- Inflammatory Subtype



Lyme Disease



PML

LearnNeuroRadiology.com

HOME TOPIC GUIDES POST TOPICS TRAINEES EXAM PREP OTHER RESOURCES ABOUT US

WELCOME TO LEARN NEURORADIOLOGY!

Learnneuroradiology.com is an educational site geared towards physicians who have an interest in learning more about topics and fields in neuroradiology. While this is geared towards radiologists, including residents, fellows, and practicing radiologists, it also may be useful to others in medicine, including non-radiologists physicians (e.g. neurologists), medical students, and others.

Learn Neuroradiology is structured as a series of short videos, posts, or articles describing specific topics. This may be primarily organized by diseases or pathology, but more general overviews may be present. Each post is categorized by its anatomic area, such as brain, spine, head and neck, or procedures.

Key Resources

There are a few key resources which may help you as you move through the web site

Youtube channel

The educational videos presented on this website are all contained on the LearnNeuroradiology youtube channel which you will find by clicking here.

youtube channel

Targeted topic guides

For key topics in neuroradiology, there are targeted guides here which can help you navigate through the site and find information most relevant to your studies.

topic guides

Exam review

Many of the posts on this site can be used for board review, although some are specifically dedicated to board review. This is further specified in the exam prep section.

exam prep

Post topics

This link will take you to a chronological list of post topics. Here, you can see links to all the videos separated by their individual topics. You can also find links to this at the top of the page.

post topics

All posts by time

This link will take you to a chronological list of posts by time. This is the fastest way to find the newest posts and catch up on anything you may have missed.

posts by time

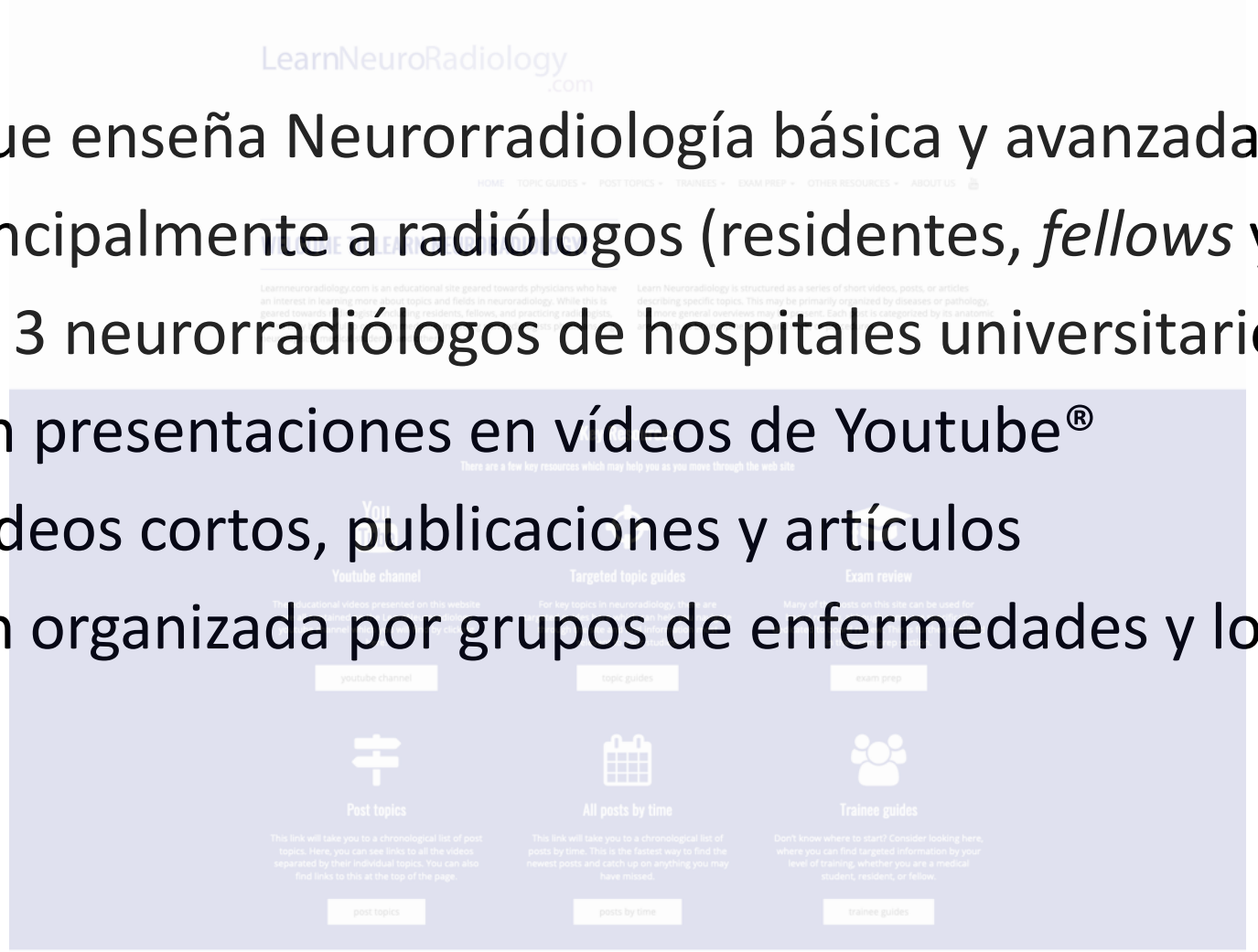
Trainee guides

Don't know where to start? Consider looking here, where you can find targeted information by your level of training, whether you are a medical student, resident, or fellow.

trainee guides

LearnNeuroradiology.com

- Sitio *web* que enseña Neurorradiología básica y avanzada
- Dirigido principalmente a radiólogos (residentes, *fellows* y especialistas)
- Editada por 3 neurorradiólogos de hospitales universitarios (EE.UU.)
- Centrada en presentaciones en vídeos de Youtube®
- Contiene vídeos cortos, publicaciones y artículos
- Información organizada por grupos de enfermedades y localización anatómica



LearnNeuroradiology
9610 suscriptores

INICIO | VÍDEOS | LISTAS | COMUNIDAD | CANALES | MÁS INFORMACIÓN

Welcome to the LearnNeuroradiology Youtube Channel

1742 visualizaciones • hace 9 meses

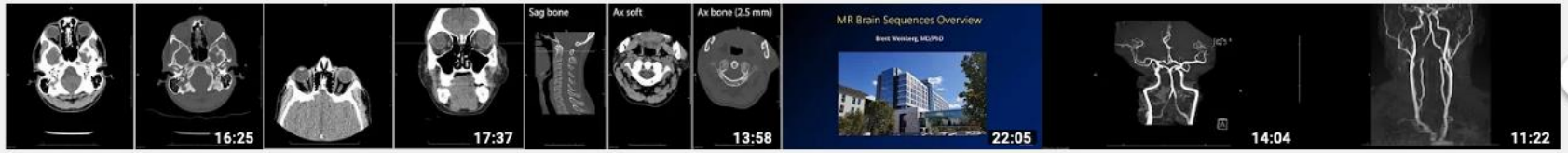
Welcome to the LearnNeuroradiology Youtube channel. My name is Brent Weinberg, and I'm a neuroradiologist at Emory University. I have an interest in teaching, and I've collected a lot of my educational content here to share with others who have an interest in neuroradiology.

MÁS INFORMACIÓN

- Desde mayo 2018
- 155 vídeos
- 511.587 visualizaciones
- 9890 suscriptores

Neuroradiology search patterns ▶ REPRODUCIR TODO

As radiologists, we often forget that we didn't know how to go through a study from the beginning. This playlist will be a collection of videos on how to approach studies from scratch.



Head CT (computed tomography) radiology...
LearnNeuroradiology
9561 visualizaciones •
hace 3 años

CT (computed tomography) face radiology search...
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18.500 visualizaciones •
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Cervical spine CT (computed tomography)...
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Brain MRI (magnetic resonance imaging)...
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MRA (magnetic resonance angiogram) head radiolog...
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Noncontrast MRA (magnetic resonance...
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10.232 visualizaciones •
hace 3 años

Neuroradiology topic guides

Welcome to the topic based guides of neuroradiology. Here you will find information about a variety of high yield areas organized by topic. Click the areas below to get further information.

Advanced MRI imaging

There are several advanced MRI techniques for more sophisticated imaging of brain structure and function. The most common advanced imaging techniques include spectroscopy, perfusion, diffusion tensor imaging (DTI), and functional MRI (fMRI). This page gives some of the details of using advanced imaging techniques for brain imaging and surgical planning.

Autoimmune and inflammatory conditions

There are a wide variety of autoimmune conditions that affect the brain and spine. Some, like demyelinating disease, are common, but have a variety of manifestations that can appear differently. Others, such as unusual inflammatory encephalitis, are rare but it is relatively important for radiologists to know about them.

Brain tumors

Brain tumors are one of the most common diagnoses addressed in neuroradiology. This covers a wide spectrum of disease, from primary brain tumors like gliomas and glioblastomas to secondary disease like metastases. This section covers the spectrum of the most common brain tumors, including primary brain tumors, other brain tumors like metastasis and lymphoma, and less common brain tumors.

Head and Neck Imaging

Imaging of the head and neck can be a real challenge for the beginning radiologist as well as other physicians taking care of patients with disease of the ear, skull base, face, and neck soft tissues. The anatomy is challenging because it is small and complex, and many of the disease processes are quite subtle. To address this challenge, you should have some strategic approaches to the anatomy and pathology that is present in this area.

Intracranial hemorrhage (coming soon)

This section covers the general imaging appearance (CT and MRI) of intracranial hemorrhage, how it evolves over time, and a strategic approach to diagnosing causes of intracranial hemorrhage. Aneurysmal subarachnoid hemorrhage and traumatic intracranial hemorrhage are not really covered much here, with the emphasis on intraparenchymal hemorrhage.

Procedures

Procedures are a key part of neuroradiology. The most commonly performed procedures include: lumbar punctures, myelograms, cisternograms, biopsies, and blood patches Every trainee should have a rudimentary knowledge of these procedures, including indications for performing them, how they are performed, and common risks and contraindications.

Spine Osseous Lesions

Bone lesions of the spine are particularly challenging to diagnose whether they are found in symptomatic patients or as incidental findings. This page provides a systematic approach to spine bone lesions taught through a series of interactive "choose your own adventure" style videos.

Vascular imaging

Vascular imaging, including CT angiography (CTA), MR angiography (MRA), and catheter angiography are a big part of neuroradiology. When vascular abnormalities are suspected because of clinical exam or findings on other imaging, such as CT or MRI, angiographic exams provide a dedicated way to look for abnormalities in the vessels.

Autoimmune and inflammatory conditions

There are a wide variety of autoimmune conditions that affect the brain and spine. Some, like demyelinating disease, are common, but have a variety of manifestations that can appear differently. Others, such as unusual inflammatory encephalitis, are rare but it is relatively important for radiologists to know about them.

This page covers the most common autoimmune and demyelinating disease that affect the brain and spine. To review all the videos on this topic, check out the entire autoimmune/inflammatory playlist.

Demyelinating disease

CNS demyelinating disease is common, with the most common being multiple sclerosis (or MS), neuromyelitis optica (NMO), and acute disseminated encephalomyelitis (ADEM). These are all demyelinating/autoimmune conditions in which the brain loses its normal myelination. Susac syndrome is a small vessel vasculitis which can mimic demyelinating disease.

MS is the most common demyelinating disease, affecting women more than men, with 2 age distribution peaks in younger and middle age women. MS commonly presents with optic nerve or visual symptoms, affects the brain more commonly than the spine, and can result in short segment spine lesions.

Neuromyelitis optica, or NMO, is an autoimmune disease characterized by predominantly optic nerve and spine lesions. It is often associated with an antibody to aquaporin 4.

ADEM is an acute fulminant demyelinating syndrome characterized by acute onset and often many supratentorial lesions. The majority of patients recover, although some may have residual symptoms and it can even progress to death.

AHEM is a closely related variant of ADEM which is associated with hemorrhage.

Susac syndrome is a small vessel vasculitis with small vessel infarcts, most commonly in the retina, cochlea, and periventricular white matter and corpus callosum. It can frequently mimic demyelinating disease because the distribution of lesions is similar.

For more detailed information, check out the more specific videos about multiple sclerosis and pitfalls of interpretation below.

Demyelinating disease – overview

Interpreting MRI in Multiple sclerosis patients

There are complexities to interpreting MRIs in patients with suspected multiple sclerosis. You need to think about lesion location, enhancement pattern, and clinical history. In this video, Dr. Hoch reviews some of the key techniques to properly assessing these white matter lesions

Interpreting MS cases part 1

Clinical history has an important role in determining how specific imaging findings are for multiple sclerosis. Some features may suggest that a patient does not have multiple sclerosis, such as if they are the wrong age (< 20 or > 50 years old), if they have abrupt swift progression, if they have systemic symptoms such as fever or weight loss, and if they have uncommon CNS symptoms such as a movement disorder or meningitis signs. MS lesions also usually occur in some specific locations, such as in the corpus callosum, temporal lobe, periventricular white matter, and juxtacortical white-matter. In this video, Dr. Hoch discusses some of the Red Flags that might suggest you are looking at a mimic or variant of MS.

Interpreting MS cases part 2

Encephalitis

Encephalitis is a condition in which the brain parenchyma becomes acutely inflamed or irritated. It can occur from infectious, autoimmune, or inflammatory causes. There are imaging features which help us distinguish them, but often it depends on clinical history, CSF results, and other testing.

Encephalitis

Masslike Inflammatory Disease

There are a few CNS inflammatory diseases which have masslike manifestations, so I've lumped them in here. This includes orbital inflammatory disease and sarcoidosis. These diseases often have expansile enhancement, nodules, and masses, even though they are not neoplastic processes. If you see nodular or masslike enhancement, particularly at the skull base or in the orbits, think of these diseases.

Masslike Inflammatory Disease

Spine Inflammatory Disease

A few inflammatory or demyelinating diseases affect the spine (in addition to MS, which we won't really discuss here. These are transverse myelitis, which is commonly seen in a viral or post-viral setting, and sarcoidosis. Sarcoid can mimic a number of other conditions, such as tumors and lymphoma, so watch out.

Spine Inflammatory Disease

Amyloid disease

Amyloid deposition disorders can also affect the CNS. There are three main manifestations:

- Cerebral amyloid angiopathy
- Inflammatory amyloid
- Amyloidoma

While related, these disorders have different imaging appearances that can be clues to their presence.

Amyloid-related disease

Vascular processes

There are inflammatory vascular processes that can also appear in the CNS. These include Moya Moya disease/syndrome, CADASIL, and MELAS, among others. These involve an inflammatory or autoimmune component of the vessels and can both affect the vessels directly or result in a characteristic parenchymal appearance.

Inflammatory vascular processes

Summary

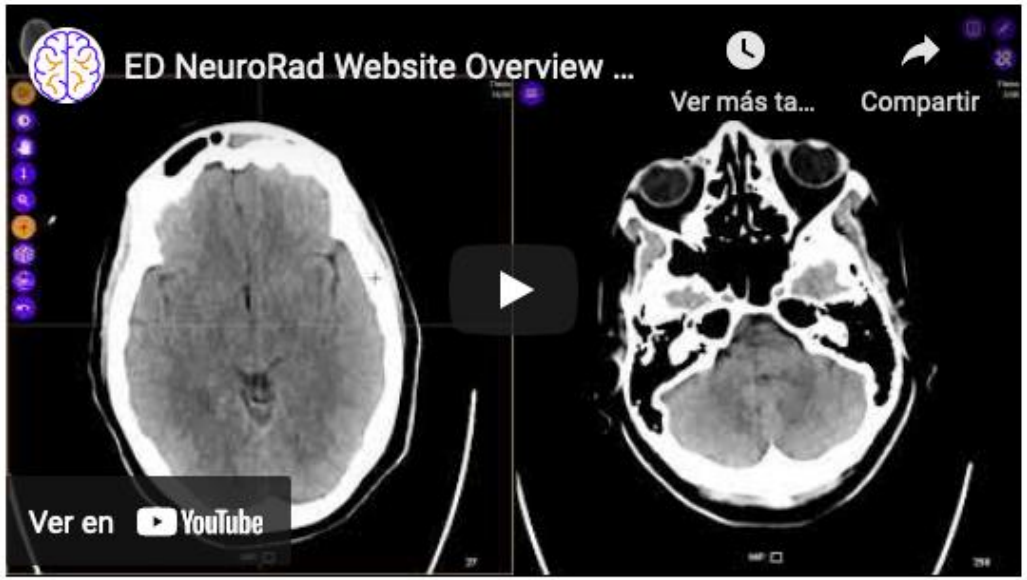
In summary, there are a wide range of autoimmune and inflammatory processes that can affect the brain and spine. On this page, we have reviewed some of the most common ones. Their manifestations can be highly varied, and they can be especially challenging to diagnose, often depending on other systemic factors and other conditions.

Neuroradiology cases to learn and prepare for Call!

Check out the Case List for a collection of ED/on-call neuroradiology cases, all presented on a PACS-like web viewer to simulate the real life experience of image interpretation. See the YouTube video to the right or the About page for a brief usage guide for the web viewer.

In addition to the cases, there are now two highly detailed anatomy modules using the same web viewer. The main module has detailed skull base and cortical brain annotations on high resolution CT and MRI from a single subject. A new temporal bone module has over 40 temporal bone specific annotations on a very high resolution temporal bone CT. Check them out via the menu above or the buttons below:

CASE LIST SKULLBASE & BRAIN TEMPORAL BONE



Video guide to using the website and webviewer

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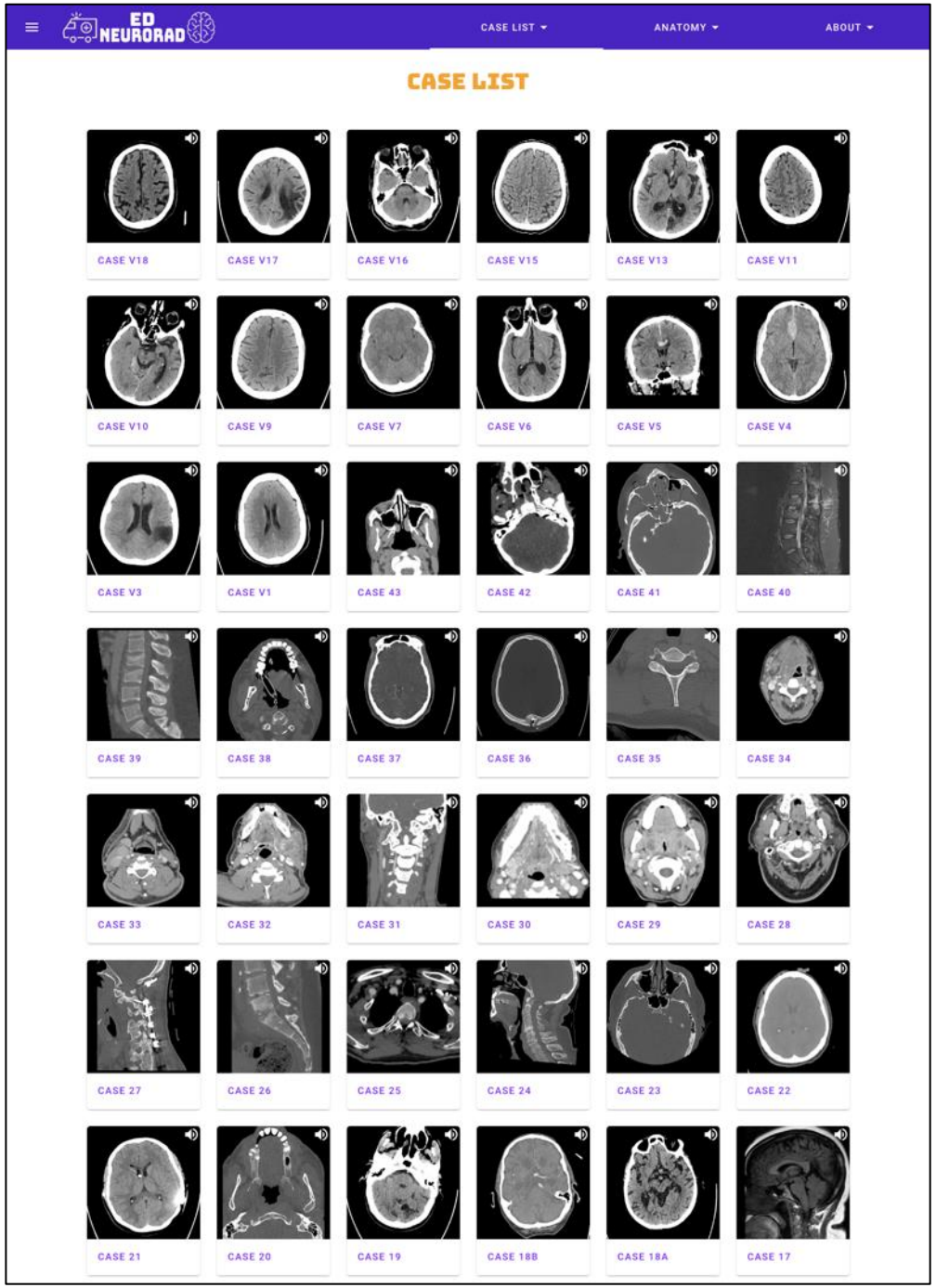
ED Neurorad

- Colección de 61 casos de Neurorradiología urgentes
- Visor *web* que simula entorno PACS

+ Módulo de anatomía de base de cráneo y hueso temporal

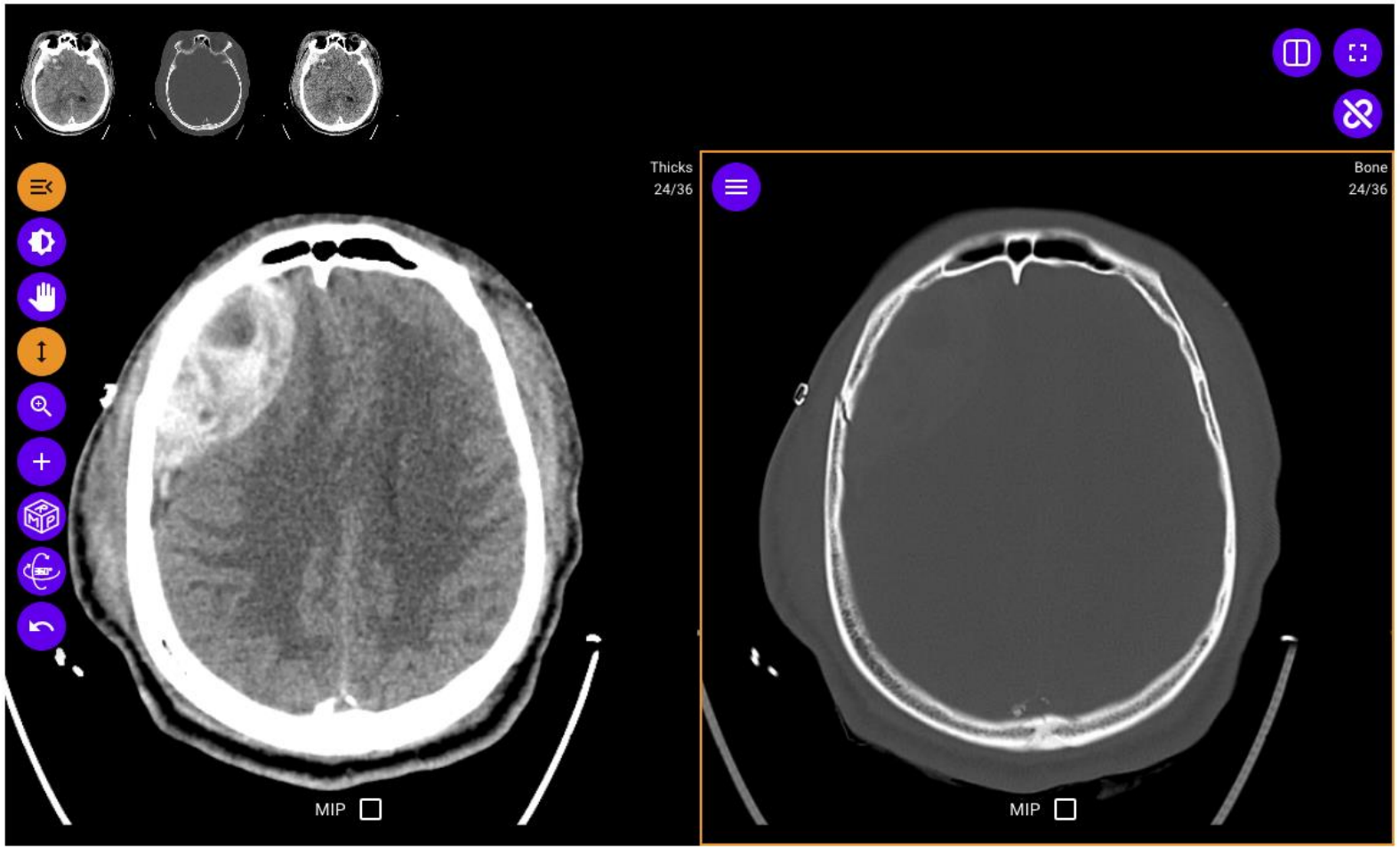


Case 2

Indication: Trauma

DISCUSSION

READOUT

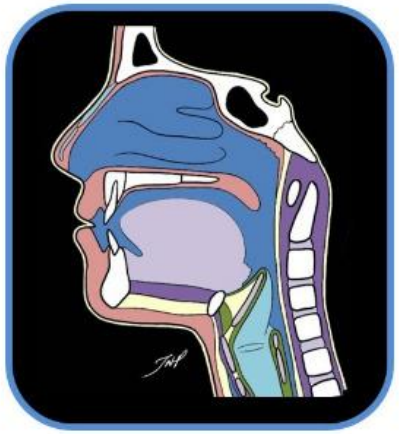


← CASE 1

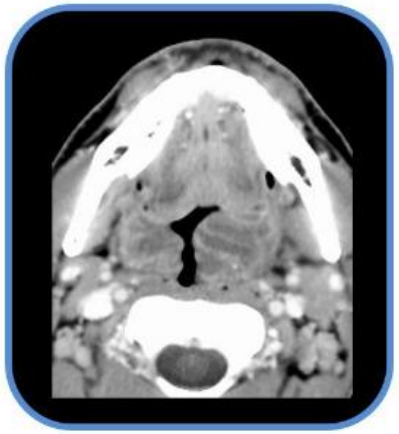
CASE 3A →

Learning Head and Neck Radiology

How to Read a Neck CT



Head and Neck Anatomy



Head and Neck Cases

Classroom Sessions

Disclaimer: The materials here serve only as general guidelines. Institutions, hospitals, and providers may differ in their specific practices. No part of this curriculum is intended to replace proper medical training through graded supervision.

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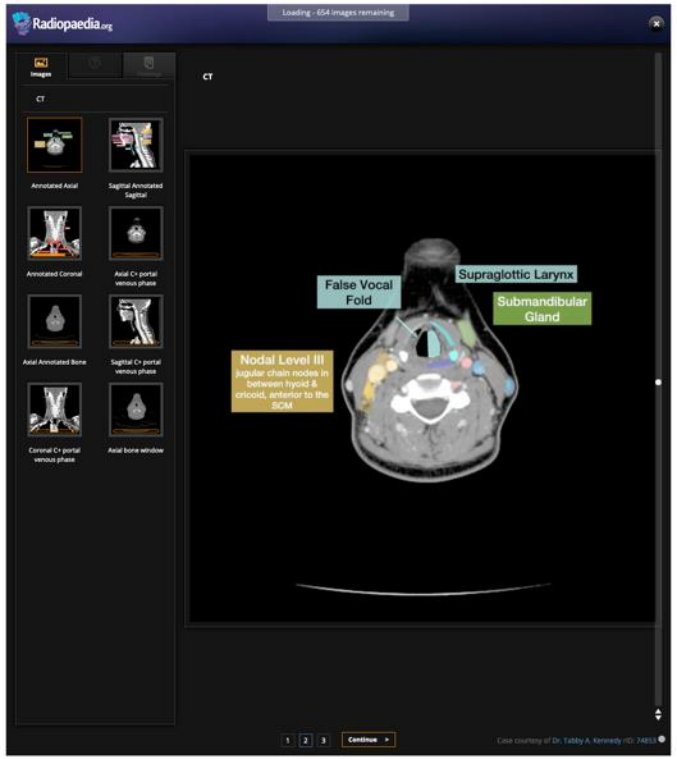
How to Read a Neck CT



Head and Neck Search Patterns: Neck CT

Bone windows: pull down both axial and sagittal

Lung apices: Nodules/Masses, Pneumothorax

Spine: Pull down sagittal bone windows & look for fractures, lytic or blastic lesions, degenerative changes etc.

Sinuses: mucosal thickening, air fluid levels

Temporal bone: mastoid/middle ear opacification, ossicular chain, inner ear structures

Teeth: caries, periapical disease

Soft tissue windows: pull down both axial and sagittal

Vessels: starting at the mediastinum—trace each vessel: carotid, vertebral arteries, jugular veins

Brain parenchyma: look for any areas of edema or enhancement

Orbits: globes, extraocular muscles, optic nerve, fat

Glands: Parotid Glands, Submandibular Glands and Thyroid

Aerodigestive Track

- Trachea/Esophagus
- Larynx: vocal cords, aryepiglottic fat, epiglottis, paraglottic/pre-epiglottic fat
- Hypopharynx: post cricoid mucosa, pyriform sinus, posterior pharyngeal wall
- Oropharynx: Lingual tonsils, tongue base, palatine tonsils, soft palate, posterior pharyngeal wall
- Nasopharynx: Fossa of Rosenmüller, torus tubarius, eustachian tube

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Pharynx

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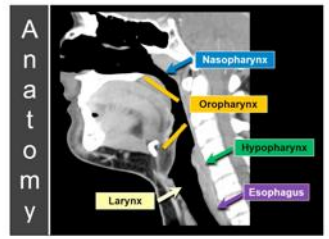
Nodes

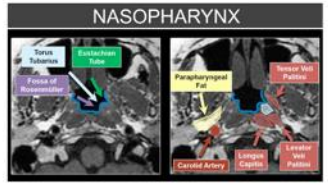
- Levels I-VI (classic)
- Lateral retropharyngeal

Superficial Soft Tissues: fat stranding, dermal lesions

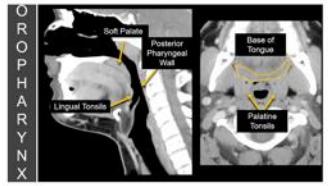


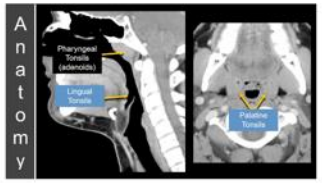
The pharynx is a conduit between the nasal cavity/oral cavity and the esophagus. The pharynx represents the upper portion of the digestive tract and is lined with squamous epithelium. The pharynx is divided into three primary segments: the Nasopharynx, Oropharynx and the Hypopharynx. Cancers that occur within each of these anatomic spaces is staged differently according to the AJCC with specific treatment implications.

The nasopharynx is the superior most aspect of the pharynx. It is separated from the nasal cavity by the choana. The soft palate is the border between the nasopharynx and the oropharynx. It is inferior/anterior to the clivus. The pharyngeal tonsils(adenoids) are located within the nasopharynx. The nasopharynx connects to the temporal bone via the eustachian tube. Tumors within the nasopharynx may result in a mastoid effusion due to secondary obstruction.



The oropharynx is the central component of the pharynx and located posterior to the oral cavity in between the soft palate and epiglottis. The subsites of the the oropharynx include: the soft palate superiorly, the posterior pharyngeal wall posteriorly, the palatine tonsils laterally, the lingual tonsils inferiorly and the base of tongs anteriorly. The epiglottis is the border between the oropharynx and the hypopharynx. HPV associated head and neck cancer typically occurs within the palatine tonsils or base of tongue of the oropharynx.

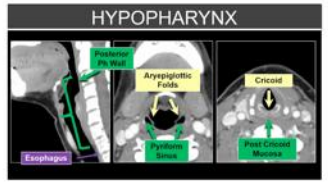




Tonsils

There are three sets of tonsillar tissue along the pharynx. The Pharyngeal tonsils (adenoids) are located within the midline nasopharynx. The palatine (faucial) tonsils are located on either side of the soft palate. The lingual tonsils are found along the base of tongue, anterior to the valecula.

The hypopharynx is the inferior portion of the pharynx. The subsites of the hypopharynx are the posterior pharyngeal wall below the epiglottis, the pyriform sinus and the post cricoid mucosa. The epiglottis separates the oropharynx from the hypopharynx. The aryepiglottic folds separate the larynx from the hypopharynx. The hypopharynx is separated from the cervical esophagus by the cricopharyngeus muscle which is found at the inferior margin of the cricoid.



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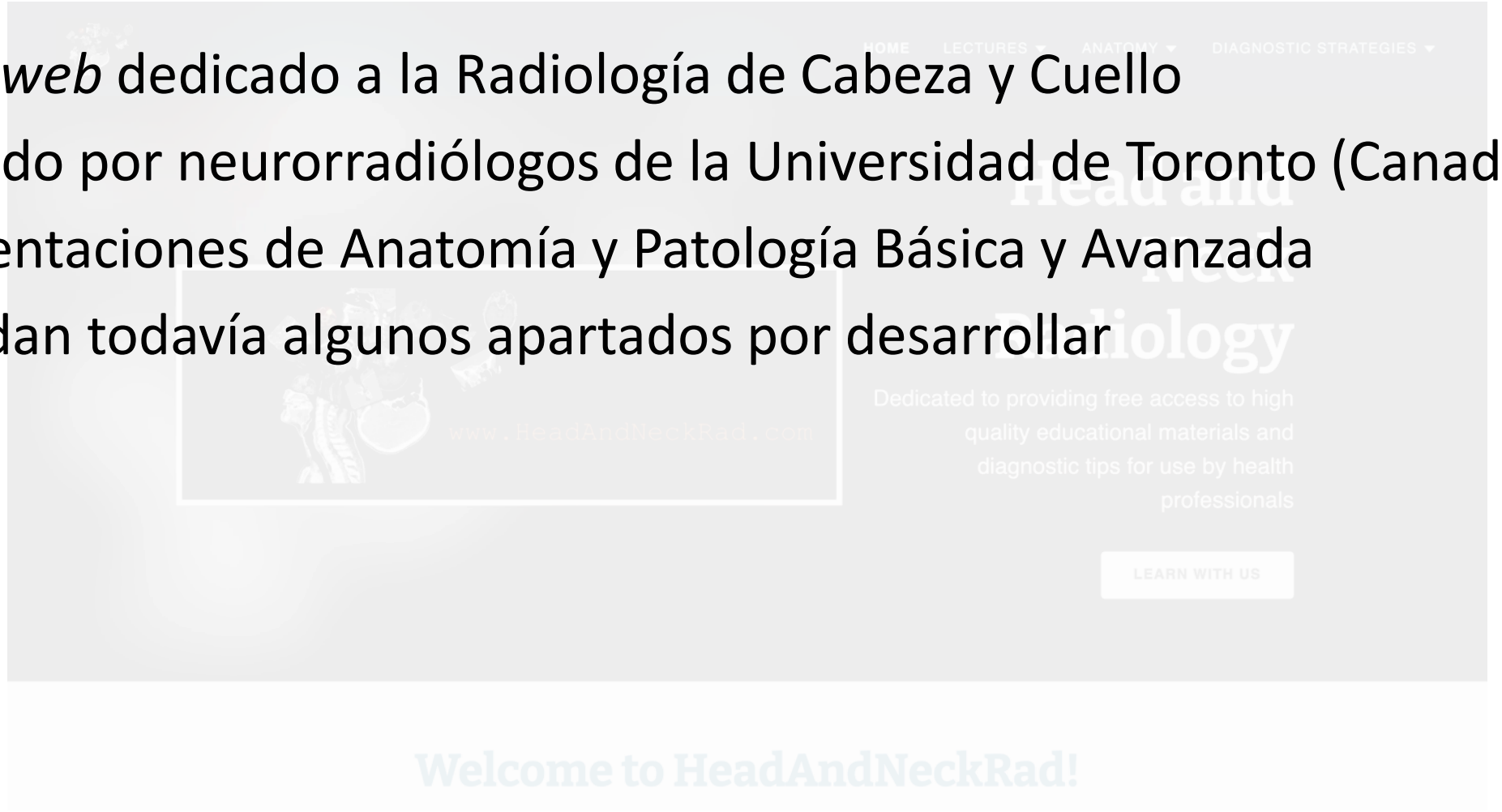
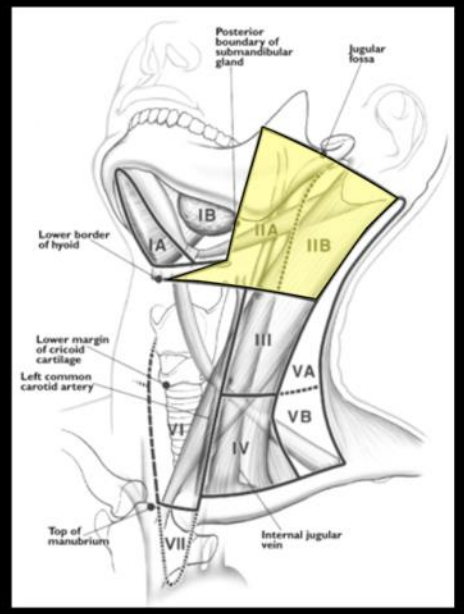
- Editado por neurorradiólogos de la Universidad de Toronto (Canadá)
- Presentaciones de Anatomía y Patología Básica y Avanzada
- Quedan todavía algunos apartados por desarrollar



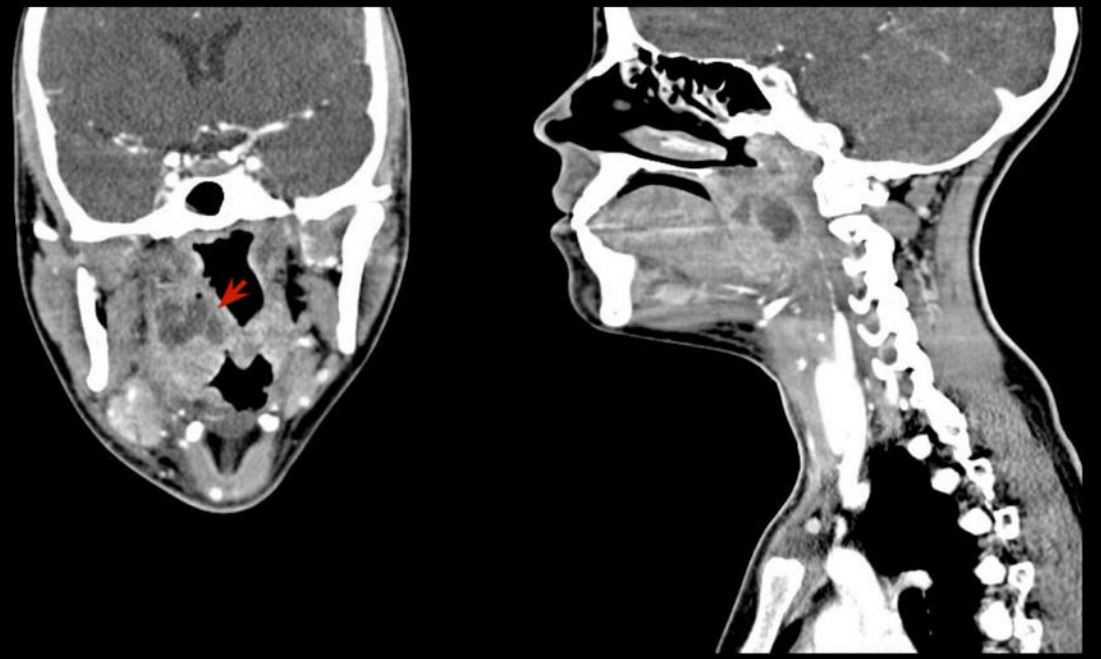
Nodal Drainage Patterns:



- Level II: upper jugular

  Receives nodal drainage:
  - Retroauricular
  - Auricular
  - Occipital
  - Deep facial
  - Retropharyngeal
  - Submandibular
  - Submental
  - Superficial cervical

Aerodigestive Tract: Peritonsillar Abscess



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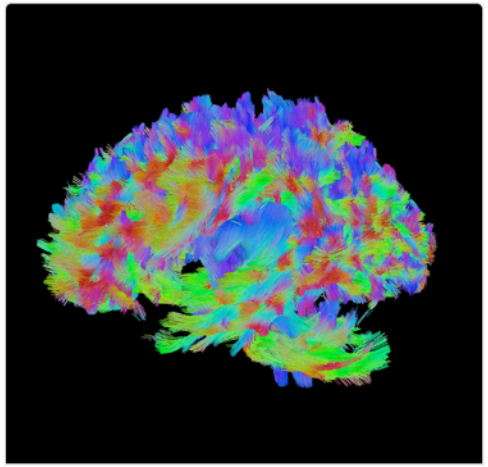

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We'd Like Your Feedback

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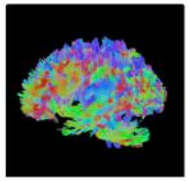

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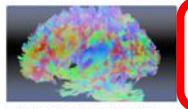
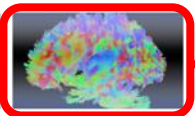
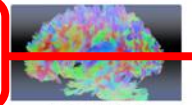
Brain Imaging



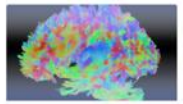
Congenital Malformations (Brain and Spine)
- Alireza Radmanesh, MD



Mitochondriopathies
- Kish Mankad, MD



Imaging Evaluation of Phakomatoses the Neurocutaneous Syndromes
- Luiz Celso Hygino Cruz Jr., MD, PhD



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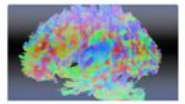
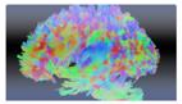
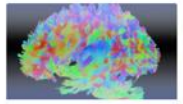
- Amit Desai, MD



Imaging of Intracranial Hemorrhages
- Max Wintermark, MD



Neuroimaging of Seizures and Epilepsy
- Vivek Gupta, MD



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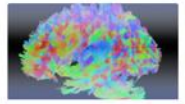
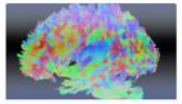
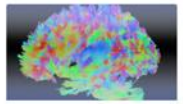
- Ashish Atre, MD



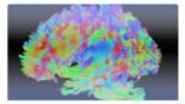
Sella and Parasellar Region Anatomy and Pathology
- Evan Stein, MD, PhD



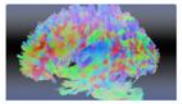
Multiple Sclerosis and Mimics
- Michael Hoch, MD



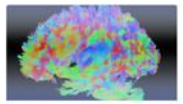
Acute Ischemic Stroke
- Kambiz Nael, MD



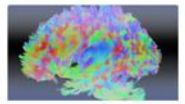
Toxic-Metabolic & Demyelinating Disorders
- Gloria Chiang, MD



Recognizing Dementia Using Routine MRI
- Timothy Shepherd, MD



Imaging in Subarachnoid Hemorrhage
- Hemant Sonwalkar, MD, DM, FRCR



CNS Infections
- Sachin Gujar, MBBS, DABR

Brain and Spine Tumors

Spine Imaging

Head and Neck Imaging

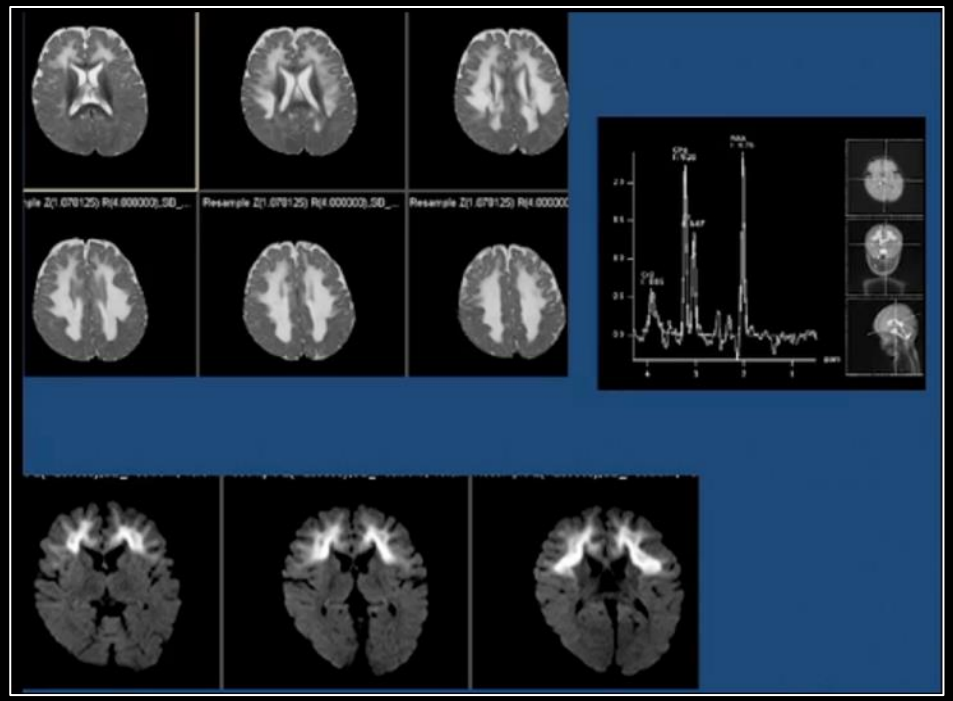
Cranial Nerve Imaging

Mitochondriopathies

Dr Kish Mankad
Consultant Pediatric Neuroradiologist & Associate Professor
Great Ormond Street Hospital for Children, London

No relevant disclosures

drmankad@gmail.com



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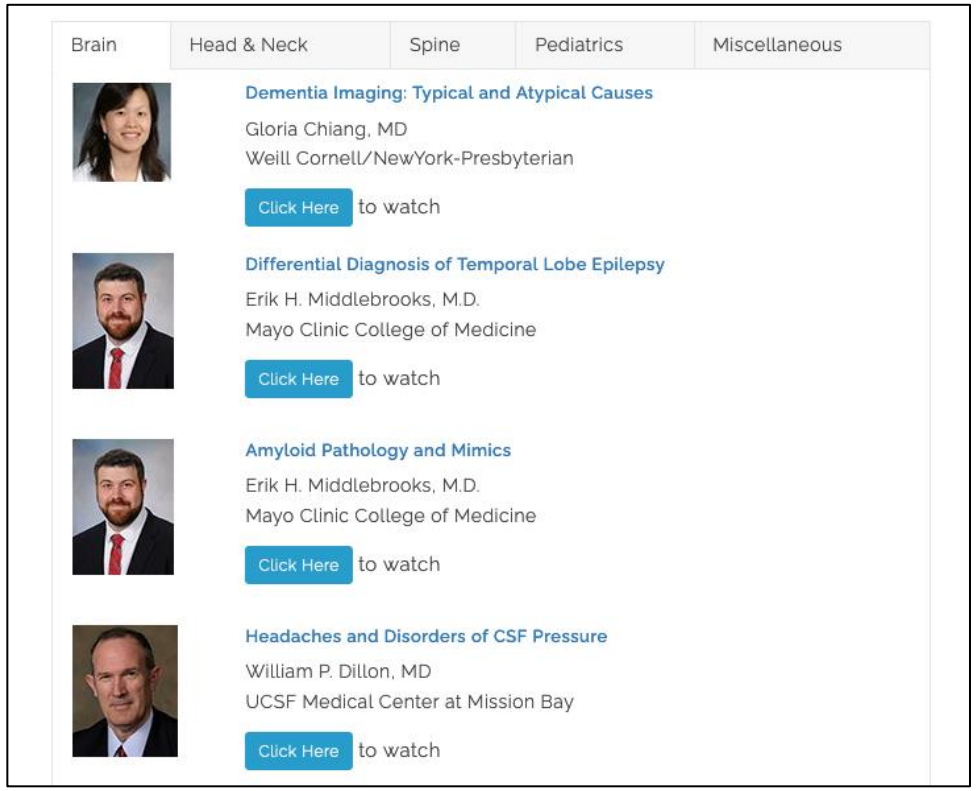

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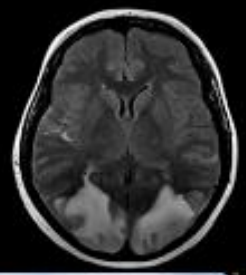
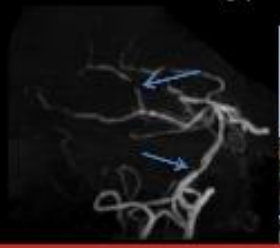
Andrew D. Schweitzer, MD
Assistant Professor of Radiology
Associate Program Director of Radiology Residency
Weill Cornell Medicine
New York, NY





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BSNR Educational Programme

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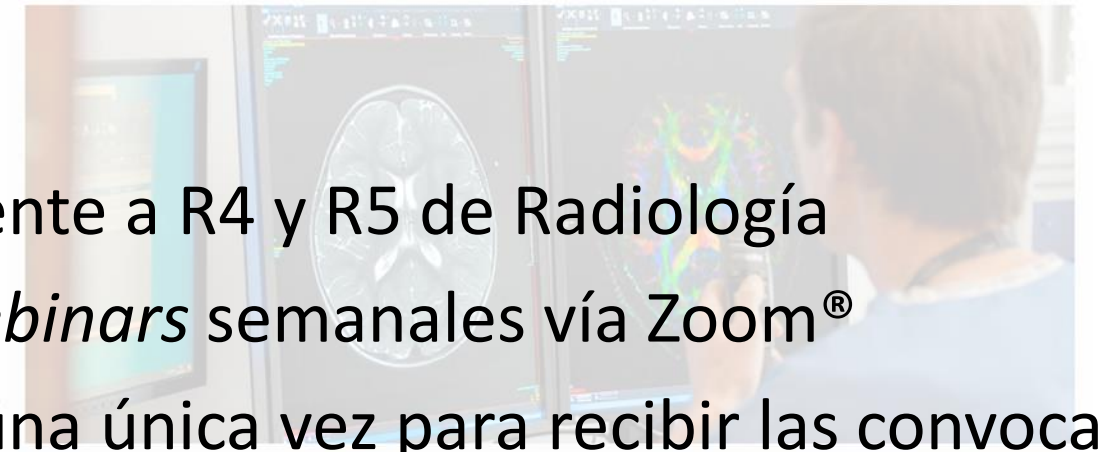

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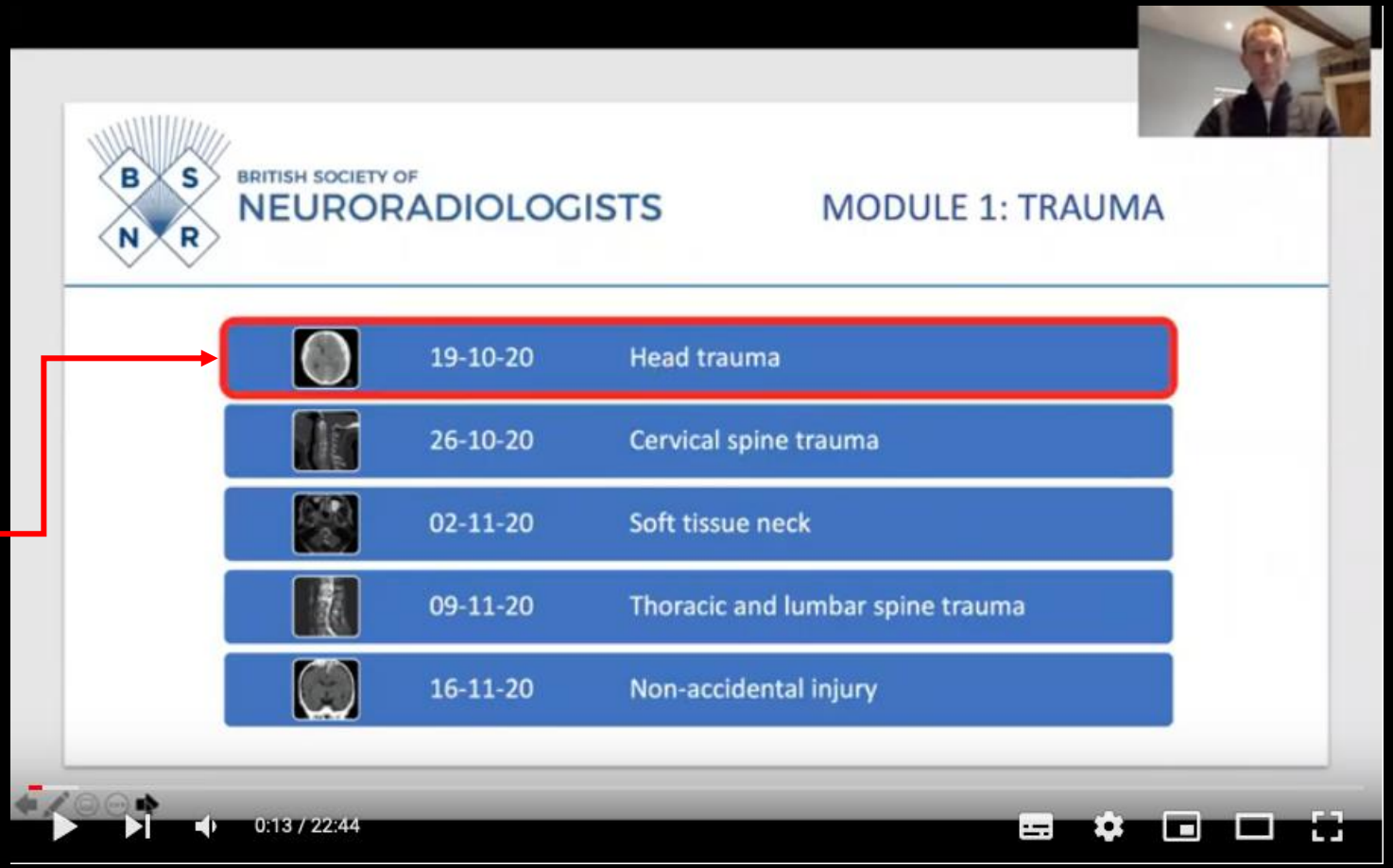

En marcha el Módulo 5: Columna

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1755 Items Page 1 of 195

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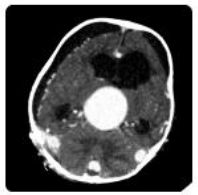
Clinical Cases



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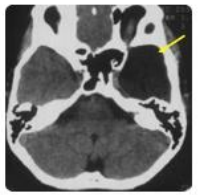

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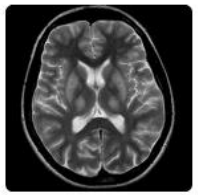

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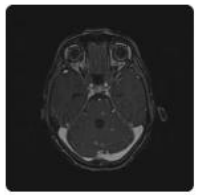

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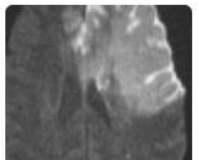
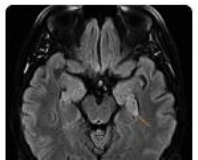
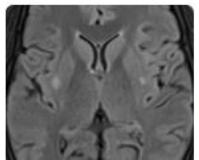
Clinical Cases



Congenital absence of the bilateral ICA: A case report
17394 18.08.2021



Transient global amnesia: Imaging assessment on an emblematic neurologic...
17391 18.08.2021



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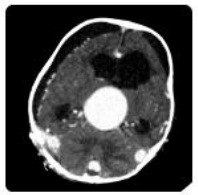
Area of interest | Imaging Technique | Procedure | Special Focus | Case Type | Editors Selection | Search options

SORT CASES BY: Section | Publishing date

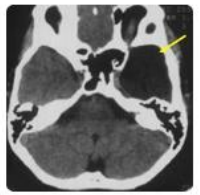
1755 Items Page 1 of 195

Atypical CNS imaging features of Wilson's disease
17437 08.10.2021
Clinical Cases

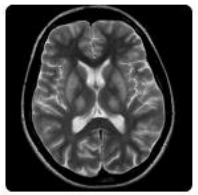


Vein of Galen aneurysmal malformation: A case report
17424 04.10.2021
Clinical Cases

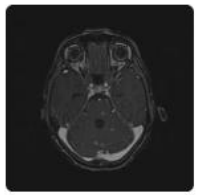
Möbius Syndrome Neuroimaging Evaluation: a Rare but Accurate...
17405 23.09.2021
Clinical Cases



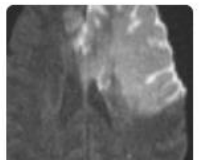
Traumatic rupture arachnoid cyst leading to subdural hygroma: Rare...
17404 22.09.2021
Clinical Cases



Case of Wilson disease in a patient with giddiness
16733 19.08.2021
Clinical Cases



A case of intracranial miliary tuberculosis
17395 18.08.2021
Clinical Cases



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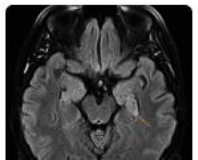
17394 18.08.2021



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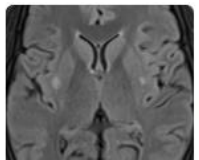
17391 18.08.2021



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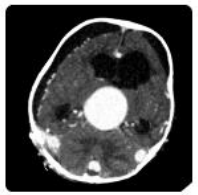
Area of interest | Imaging Technique | Procedure | Special Focus | Case Type | Editors Selection | Search options

SORT CASES BY: Section | Publishing date

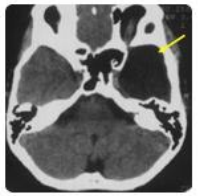
1274 Teaching Cases Page 1 of 142

Case 17437
A 20-year-old male with the inability to speak, faecal and urinary incontine...
08.10.2021
Clinical Cases

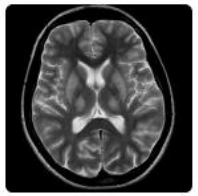


Case 17424
A 7-month-old infant presented to the pediatric outpatient services with sud...
04.10.2021
Clinical Cases

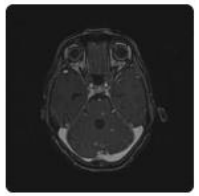
Case 17405
A 14-year-old female presented permanent convergent strabismus and...
23.09.2021
Clinical Cases



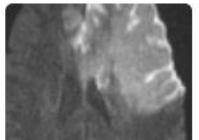
Case 17404
A 13-year-old boy presented with a history of headache and nausea. His neuro...
22.09.2021
Clinical Cases



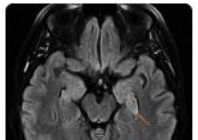
Case 16733
19-year-old girl presented with mild tremors of hand in the last two months ...
19.08.2021
Clinical Cases



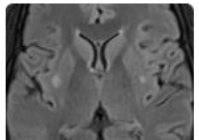
Case 17395
A 23-year-old male patient was brought with complaints of headache and vomit...
18.08.2021
Clinical Cases



Case 17394
A 45-year-old gentleman was brought to emergency with history of unconscious...
18.08.2021



Case 17391
A 58-year-old female presented with sudden onset of severe anterograde amnes...
18.08.2021



Case 17390
Two gentlemen, 35 and 40 years old, presented with severe headache and blurr...
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CASE 17437
Published on 08.10.2021

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Teaching Case

Section
Neuroradiology

Case Type
Clinical Cases

Authors

Aneree N. Shah, Shilpa Domkundwar, Sharad Malvadkar

Radiology Department, Sir JJ Hospital and Grant Medical College, Mumbai, India

Connected authors

Aneree Nilesh Shah

Patient
20 years, male

Categories

Area of Interest Abdomen, Musculoskeletal system, Neuroradiology brain ; **Imaging Technique** CT, CT-Angiography ;

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CLINICAL HISTORY −

A 20-year-old male with the inability to speak, faecal and urinary incontinence since 3 weeks. Left hemiparesis 1 year back. Increase tone of left lower limb, ankle clonus and cerebellar signs. Bilateral Kayser-Fleischer rings present. 24 hours urinary copper levels: 132ug (elevated). Past h/o jaundice. CSF analysis was normal.

DIFFERENTIAL DIAGNOSIS LIST +

IMAGING FINDINGS −

CECT Brain: Diffuse asymmetric white matter hypodensities in bilateral fronto-temporo-parietal lobes. No enhancing lesions.

MRI brain with contrast: Confluent T2/FLAIR hyperintensities in periventricular and subcortical white matter of bilateral fronto-temporo-parietal lobes and right cerebellar hemispheres, with sparing of bilateral occipital lobes. No diffusion restriction. Multiple scattered SWI hypointense foci, suggesting microbleeds. Few T2 hypointense lesions with peripheral enhancement within these abnormal white matter hyperintense areas. Mild hyperintensities are seen in bilateral ganglio-capsular (right>left) region. Multiple, tiny lacunar infarcts in bilateral basal ganglia, left thalamus and bilateral corona radiata. Focal leptomeningeal enhancement along bilateral frontal sulcal spaces. Brainstem normal. No abnormal spinal cord signal.

6 week follow up imaging: Complete resolution of ring-enhancing lesions in bilateral cerebral hemispheres. Significant resolution of T2/FLAIR hyperintensities in periventricular and subcortical white matter of bilateral fronto-temporo-parietal lobes, bilateral ganglio-capsular regions and right cerebellar hemispheres. Microbleeds and lacunar infarcts remained unchanged. Cerebral atrophy was seen.

DISCUSSION +

REFERENCES +

CASE INFORMATION

URL: https://www.eurorad.org/case/17437
DOI: 10.35100/eurorad/case.17437
ISSN:1563-4086

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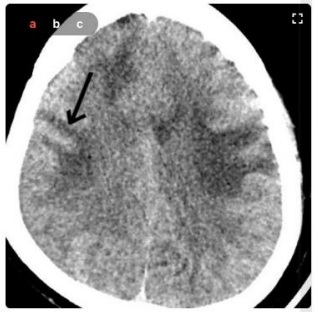


FIGURE 2

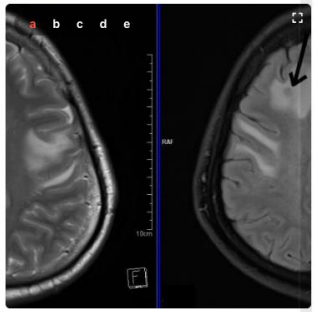


FIGURE 3

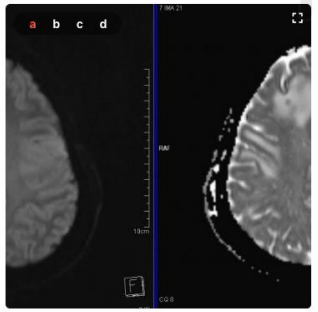
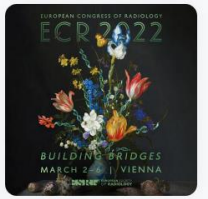


FIGURE 4



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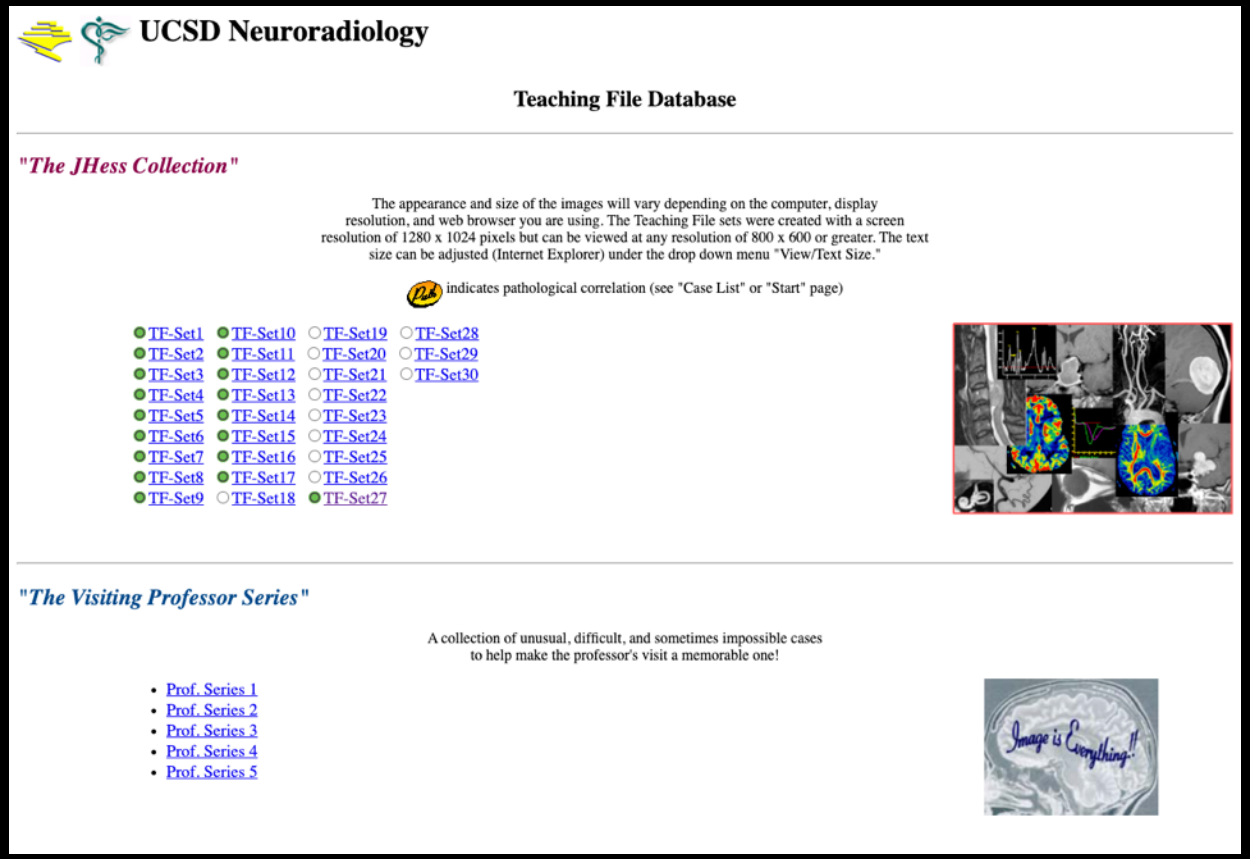

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TF-Set1	TF-Set10	TF-Set19	TF-Set28
TF-Set2	TF-Set11	TF-Set20	TF-Set29
TF-Set3	TF-Set12	TF-Set21	TF-Set30
TF-Set4	TF-Set13	TF-Set22	
TF-Set5	TF-Set14	TF-Set23	
TF-Set6	TF-Set15	TF-Set24	
TF-Set7	TF-Set16	TF-Set25	
TF-Set8	TF-Set17	TF-Set26	
TF-Set9	TF-Set18	TF-Set27	

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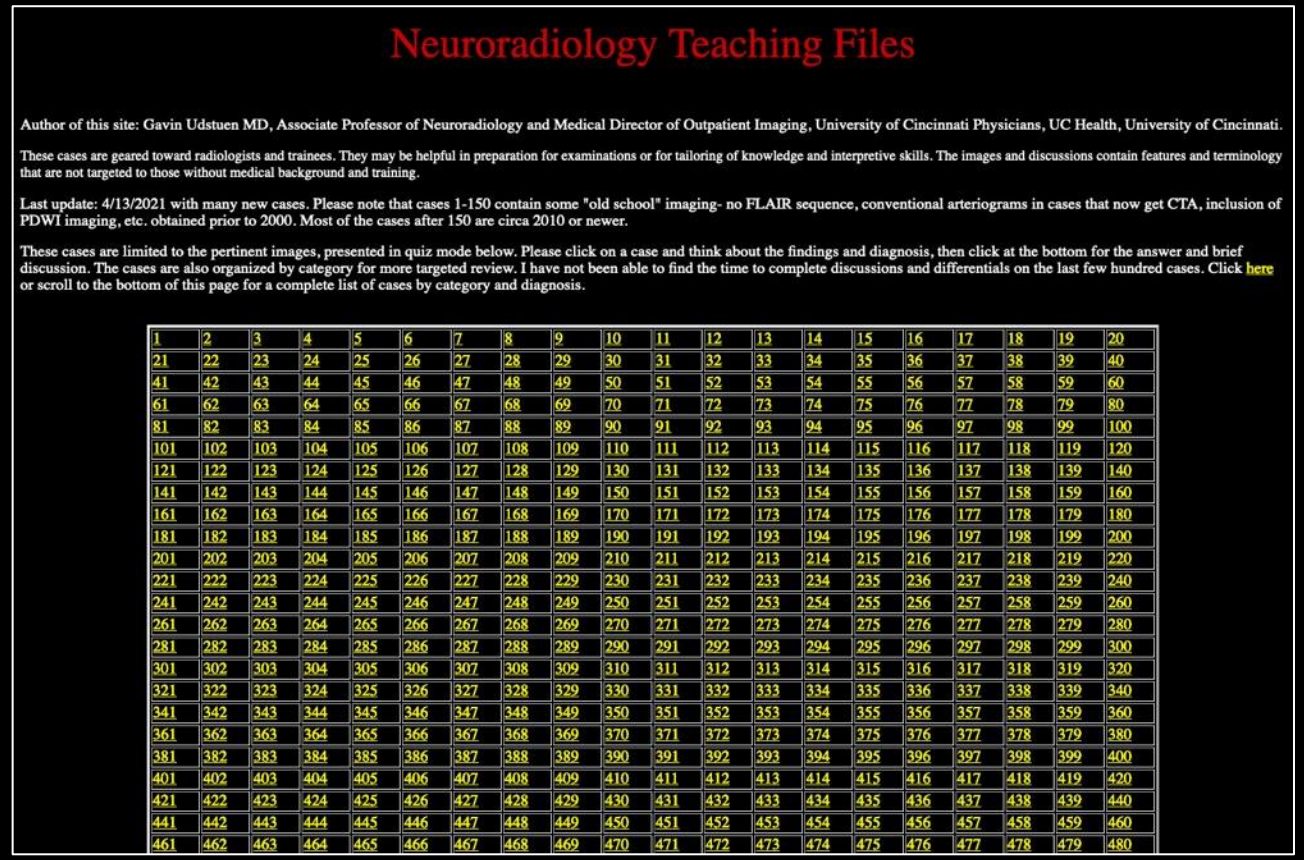

Neuroradiology Teaching Files

Author of this site: Gavin Udstuen MD, Associate Professor of Neuroradiology and Medical Director of Outpatient Imaging, University of Cincinnati Physicians, UC Health, University of Cincinnati.

These cases are geared toward radiologists and trainees. They may be helpful in preparation for examinations or for tailoring of knowledge and interpretive skills. The images and discussions contain features and terminology that are not targeted to those without medical background and training.

Last update: 4/13/2021 with many new cases. Please note that cases 1-150 contain some "old school" imaging- no FLAIR sequence, conventional arteriograms in cases that now get CTA, inclusion of PDWI imaging, etc. obtained prior to 2000. Most of the cases after 150 are circa 2010 or newer.

These cases are limited to the pertinent images, presented in quiz mode below. Please click on a case and think about the findings and diagnosis, then click at the bottom for the answer and brief discussion. The cases are also organized by category for more targeted review. I have not been able to find the time to complete discussions and differentials on the last few hundred cases. Click here or scroll to the bottom of this page for a complete list of cases by category and diagnosis.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480

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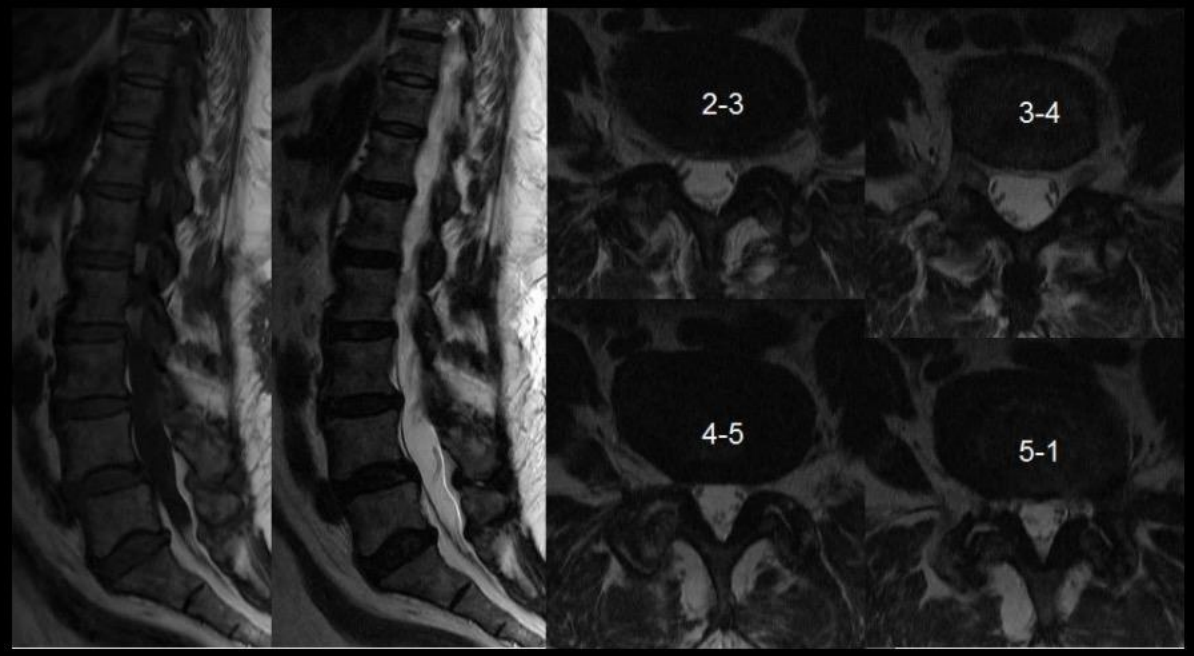

Is there neural compression demonstrated on these images? Which nerve root(s) is/are compressed?

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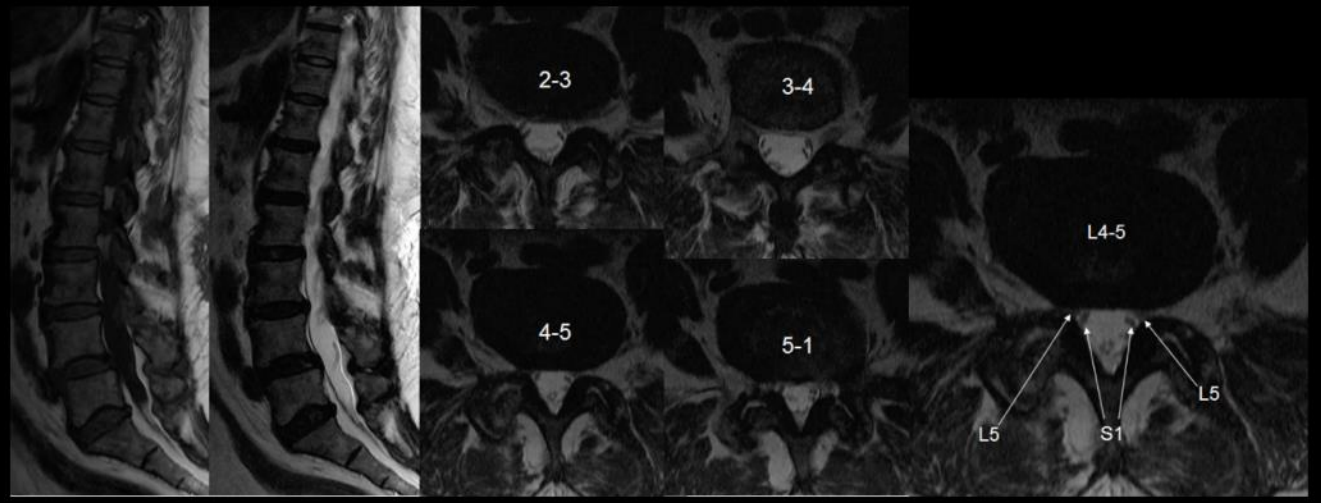

Bilateral L5 subarticular neural compression due to disc and facet disease.

Findings:

Sagittal MRI images demonstrate Multilevel disc height loss and desiccation with mild osteophyte formation. Grade 1 anterolisthesis is present at L4-5 measuring less than 4 mm. Axial images at selected levels demonstrate asymmetric subarticular narrowing at L4-5 causing compression of the bilateral L5 nerve roots which is delineated by the arrows on the final image, caused by facet hypertrophic changes asymmetric on the right. A diffuse disc bulge contributes to the subarticular narrowing at L4-5.

Discussion/Differential Diagnosis:

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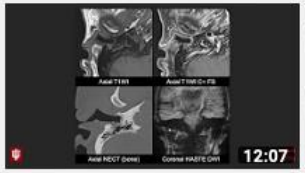

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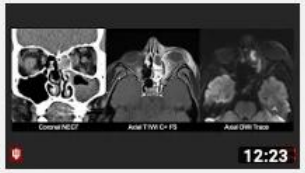
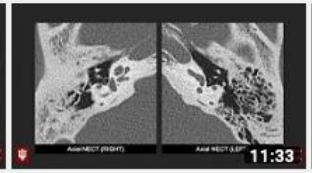


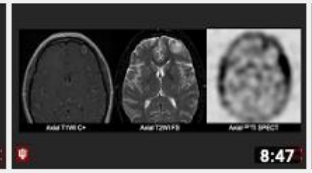
Head and Neck Case of the Day 81

343 visualizaciones • hace 7 meses



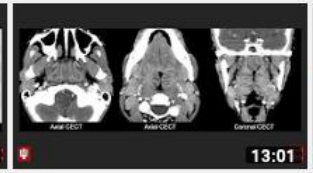
Head and Neck Case of the Day 80

303 visualizaciones • hace 8 meses



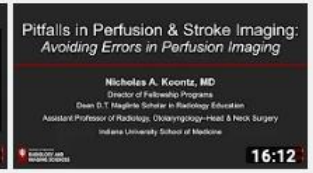
Brain Case of the Day 35

375 visualizaciones • hace 1 año



Head and Neck Case of the Day 79

329 visualizaciones • hace 1 año



Pitfalls in Perfusion & Stroke Imaging: Avoiding...

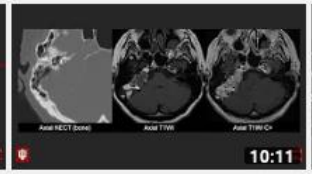
1975 visualizaciones • hace 1 año

Abdominal Case of the Day 33

318 visualizaciones • hace 1 año

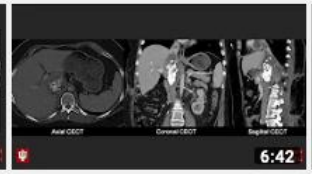
Creating a Video from a PowerPoint Presentation

409 visualizaciones • hace 1 año



Head and Neck Case of the Day 78

454 visualizaciones • hace 1 año

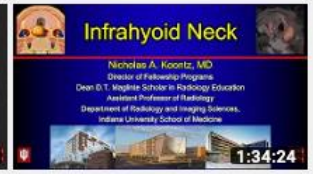


Abdominal Case of the Day 32

317 visualizaciones • hace 1 año

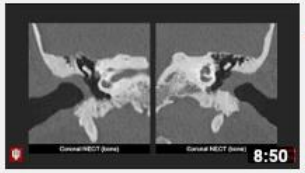
Abdominal Case of the Day 31

283 visualizaciones • hace 1 año

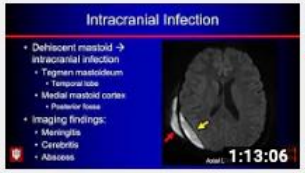


Infrahyoid Neck

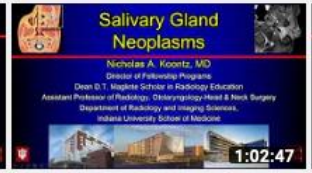
1731 visualizaciones • hace 1 año



Head and Neck Case of the



Non-Traumatic Temporal

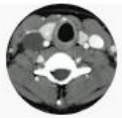


Salivary Gland Neoplasms

Temporal Bone Anatomy

Sinonasal Anatomy

Conductive Hearing Loss

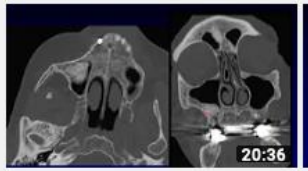


Barton Branstetter

2620 suscriptores

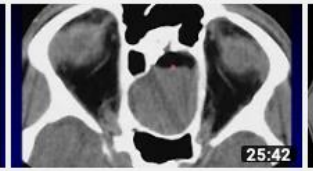
INICIO | VÍDEOS | LISTAS | COMUNIDAD | CANALES | MÁS INFORMACIÓN

Subidas REPRODUCIR TODO



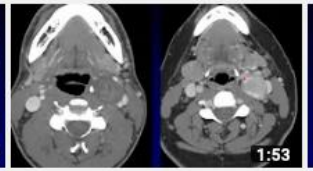
Imaging of the Paranasal Sinuses 5

189 visualizaciones • hace 1 semana



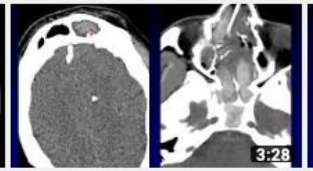
Imaging of the Paranasal Sinuses 4

483 visualizaciones • hace 1 mes



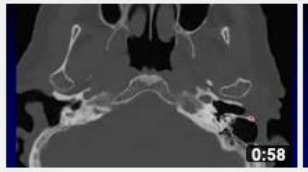
Head-to-Head: Mass in the Carotid Sheath

237 visualizaciones • hace 1 mes



Head-to-Head: Hyperdense Sinuses

233 visualizaciones • hace 1 mes



Quick Case - Mastoidectomy

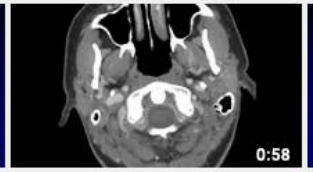
330 visualizaciones • hace 3 meses

Imaging of the Paranasal Sinuses 1

1297 visualizaciones • hace 4 meses

Quick Case - Inferior Triangle Fragment

138 visualizaciones • hace 4 meses



Quick Case - Invisible Parotid Mass

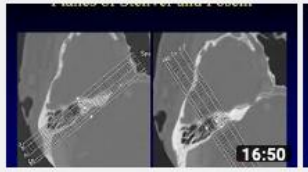
275 visualizaciones • hace 5 meses

Temporal Bone Pathology 11: Implants and...

513 visualizaciones • hace 9 meses

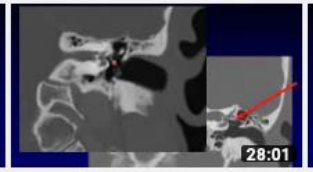
Temporal Bone Pathology 10: Trauma

568 visualizaciones • hace 10 meses



Temporal Bone Pathology 9: Dizziness

752 visualizaciones • hace 10 meses

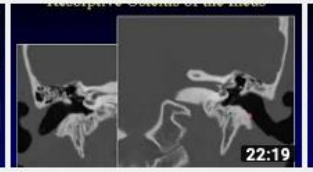


Temporal Bone Pathology 5: Facial Nerve

1293 visualizaciones • hace 10 meses

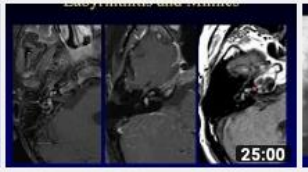
Temporal Bone Pathology 8: Tinnitus

1612 visualizaciones • hace 11 meses



Temporal Bone Pathology 7: Hearing Loss Part 2

1025 visualizaciones • hace 11 meses

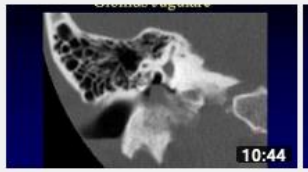


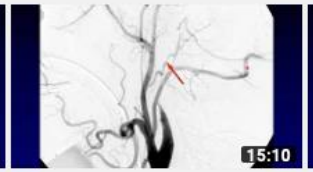
Temporal Bone Pathology 6: Hearing Loss Part 1

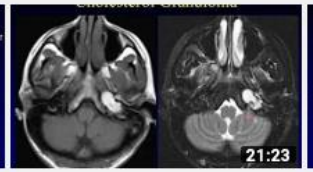
2211 visualizaciones • hace 1 año

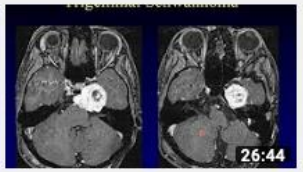
Panorex

429 visualizaciones • hace 1 año









- Desde septiembre 2017
- 79 vídeos
- 129880 visualizaciones
- 2620 suscriptores

Guión

- Recursos básicos
- Currículos en Neurorradiología
- Colecciones de casos
- Conferencias en Youtube®
- Neurorradiología pediátrica
- Neurorradiología vascular intervencionista

Peds Neuro Call Prep Cases

Archivo Editar Ver Insertar Formato Datos Herramientas Complementos Ayuda

Compartir

100% Solo lectura

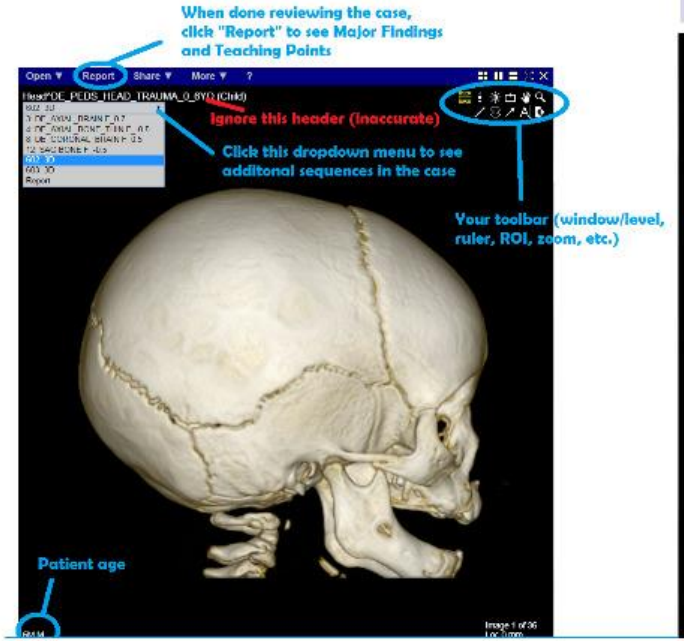
A1

Pediatric Neuro Cases for Call Preparation

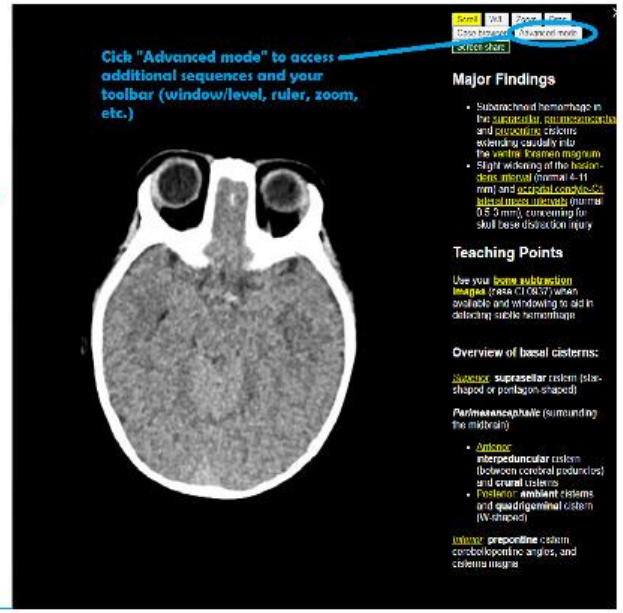
Instructions: This case file is a curated collection of pediatric neuroradiology cases aimed at helping you prepare for call. Some are normal, some contain big don't-miss findings, and some have very subtle findings that were previously missed by an on-call resident or fellow.

The links in the following tabs take you to the ClariPACS viewer. Select the appropriate tab to either view in quiz/call mode (**Cases as Unknowns**) or in tutorial mode (**Cases by Diagnosis**):

The links in **Cases as Unknowns** launch the exam without a report:



The links in **Cases by Diagnosis** launch the exam with a report on the righthand side containing History, Major Findings, and Teaching Points:



Helpful references (some of the cases will contain links to additional resources):

- 65 casos
- Casos normales, con hallazgos sutiles o que no hay que dejar de detectar
- Con y sin diagnóstico
- Visor de ClariPACS

Welcome | Cases as Unknowns | Cases by Diagnosis

Peds Neuro Call Prep Cases

Archivo Editar Ver Insertar Formato Datos Herramientas Complementos Ayuda

Compartir Iniciar sesión

100% Solo lectura

A1 Unknown cases, sorted by exam type and patient age:

Unknown cases, sorted by exam type and patient age:

Type	Accession	Comparison	Age	History
CT HEAD	CL0650		00 mo, 017 d	Group B strep, seizure
CT HEAD	CL0647		00 mo, 12 wk	Seizure
CT HEAD	CL0682		00 mo, 16 wk	Twin has NAT
CT HEAD	CL0637		00 mo, 6 wk	Concern for non-accidental trauma (NAT)
CT HEAD	CL0940		00 y, 01 mo	Fall from mother's arms onto carpeted floor
CT HEAD	CL0942		00 y, 02 mo	AMS
CT HEAD	CL0944		00 y, 03 mo	Head swelling
CT HEAD	CL0634		00 y, 03 mo	Trauma, ejection from car
CT HEAD	CL0943		00 y, 05 mo	Fall from 6 feet onto asphalt with head injury - sinus secretions
CT HEAD	CL0945		00 y, 06 mo	Fall 3 feet from bed onto hardwood floor
CT HEAD	CL0628	CL0937 (bone removal)	00 y, 06 mo	MVC, improperly secured carseat
CT HEAD	CL0947		00 y, 10 mo	Femur fracture, evaluate for NAT
CT HEAD	CL0948		01 y 06 mo	Hit head three days ago, now with seizures
CT HEAD	CL0949		02 y	Fall, concussion, vomiting
CT HEAD	CL0621		02 y	Fall from 5 ft balcony onto concrete
CT HEAD	CL1023		02 y	MVC
CT HEAD	CL0950		03 y	Headache, vomiting, intermittent visual complaints
CT HEAD	CL0619		03 y	Bit behind left ear and run over by family dog
CT HEAD	CL0677		03 y	New seizure
CT HEAD	CL0640		03 y	Unrepaired transposition of great vessels, VSD, fever for one week and leukocytosis
CT HEAD	CL0684		03 y, 08 mo	Crying, headache
CT HEAD	CL0951		04 y	ITP (platelets 55), head trauma; bumped head with another child; no LOC or vomiting
CT HEAD	CL0952		05 y	AMS
CT HEAD	CL1026		05 y	Unsteady gait, clumsiness, slurred speech
CT HEAD	CL1068		06 y	Concern for NAT, distal humeral fracture
CT HEAD	CL1013		08 y	Right frontal headache
CT HEAD	CL0644	CL0643 (6 mos prior)	09 y	VP shunt, tachycardia
CT HEAD	CL1014		10 y	Headache, vomiting
CT HEAD	CL0633		10 y	Status post cardiac surgery with headache, on coumadin for prosthetic mitral valve
CT HEAD	CL0635		11 y	Headache, blurry vision, dizziness
CT HEAD	CL0642		11 y, 09 mo	MVC
CT HEAD	CL0953		12 y	Worsening headache with nighttime awakening
CT HEAD	CL0676		12 y	Altered mental status, headache, elevated WBC
CT HEAD	CL0652		13 y	Motorcycle collision with truck
CT HEAD	CL0673 (A)	CL1034 (B) f/u 2 days	15 y	Trauma, skateboard injury
CT HEAD	CL0675		16 y	Tylenol overdose --> liver failure

- 42 casos TC cráneo
- 9 casos columna cervical (2 RX, 7 TC)
- 10 casos TC cara
- 5 casos TC cuello

Welcome | Cases as Unknowns | Cases by Diagnosis

Explorar


Open ▼
Report
Share ▼
More ▼
?
CT HEAD W/O CONTRAST
2: AXIAL-BRAIN
¡PACS!
2M F
Accession CL0647
Image 10 of 28
Loc 36 mm
Thickness 5 mm

Pediatric Neuroradiology Pre-call Primer

Table of Contents

Normal Pediatric Head CT

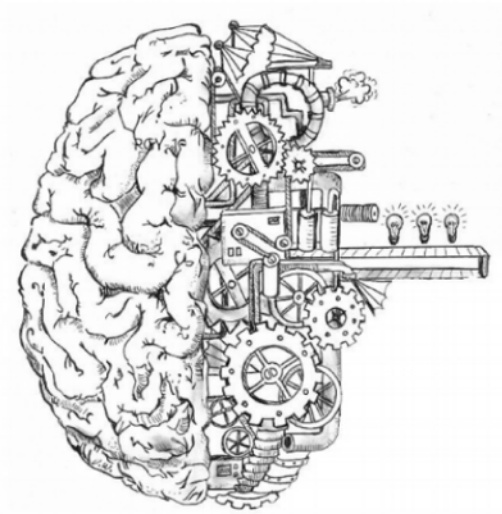
Nilesh Desai, MD
Scott Hamlin, MD

7/29/2011

+ Bonus

NEURORADIOLOGYU

HOME CONTACT TWITTER CASES



Neuroradiology U

Welcome to Neuroradiology U. The goal of this website is to educate the radiology/neuroradiology world, beginning with weekly interesting pediatric neuroradiology cases.

These cases are initially posted on my Twitter account (@judygadde) as unknowns with the answers posted approximately 48 hours later also on Twitter.

More educational content will be added as time allows.

Thank you for stopping by!

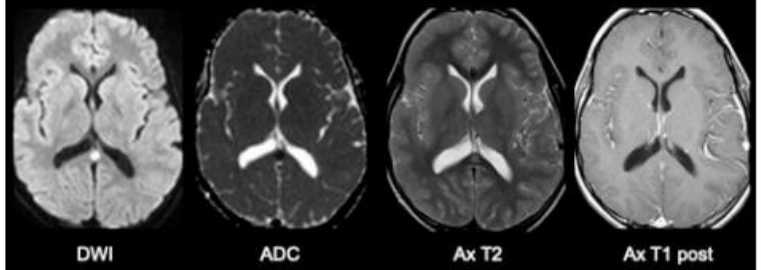
- 135 casos
- Cráneo, columna y cabeza y cuello

TWITTER CASES

Want to learn pediatric neuroradiology through weekly interesting cases?

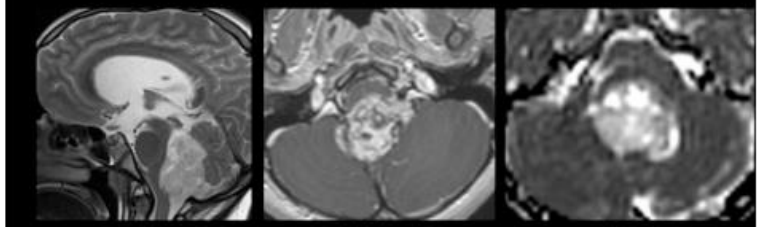
Editora:
Dr. Juddy Gadde
Neurorradióloga Pediátrica
Lurie Children's Hospital Chicago (EE.UU.)
Twitter: @JuddyGadde

Case 106: Young male child with meningoencephalitis and history of seizures



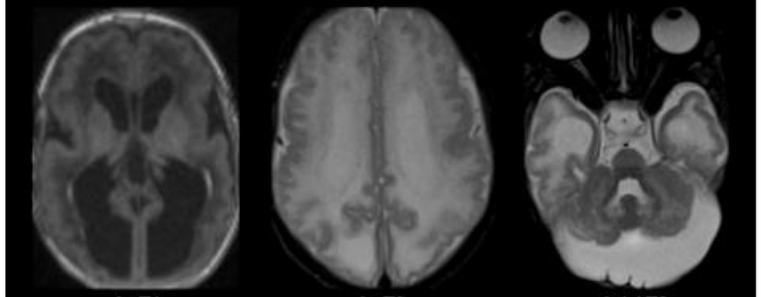
@JudyGadde

Case 107: Young female child with vomiting, headache, and dizziness



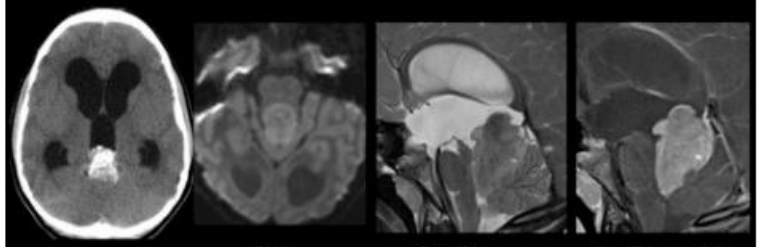
@JudyGadde

Case 111: Infant female with seizures



@JudyGadde

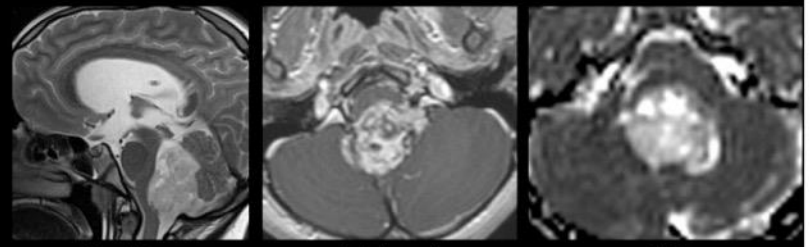
Case 112: Young female child with ataxia



@JudyGadde

1

Case 107: Young female child with vomiting, headache, and dizziness



Sag T2 | Ax T1 post | ADC

@JudyGadde

2

Case 107: Questions

1. What is the most likely diagnosis?
2. What is in the differential diagnosis?
3. What is the most common treatment?

@JudyGadde

3

Case 107: Questions

1. What is the most likely diagnosis?

Ependymoma

2. What is in the differential diagnosis?

Medulloblastoma most commonly – usually less heterogeneous and more restricted diffusion, not as "plastic", roof of the 4th vent

3. What is the most common treatment?

Surgery +/- irradiation

@JudyGadde

4

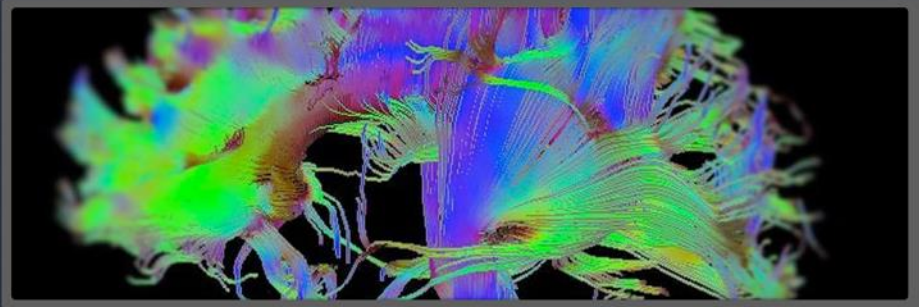
Ependymoma

- Location: Anywhere within neuraxis: posterior fossa>supratentorial>spinal cord
- Age: 6 years of age mean at diagnosis, can occur at any age
- Imaging: Floor of the 4th ventricle, "toothpaste tumor" can exend through foramina of Luschka and Magendie, T2 hyper, cystic components, +/- hemorrhage or calc, heterogeneous enhancement, may restrict if anaplastic form
- Treatment: Resection +/- irradiation

@JudyGadde

MRI Atlas of Normal Myelination

Home | < 1 year | < 2 years



Welcome to the MRI atlas of My

Purpose:
MRI in neonates and infants are challenging to read due to progressive myelination.
The objective of this website is to provide a simplified, free, and easily available MRI atlas of myelination for different ages, which may be helpful for the radiologists and clinicians dealing with the cases in pediatric neuroradiology.

NEW: Sagittal T1 images in cases < 1 year of age

Please click on the pages below to navigate the atlas

Age < 1 year Age < 2 year

Note: T1 and T2 images are provided for individual ages. Please compare your images with the atlas provided for the different ages. Myelination appears hyperintense on T1 and hypointense on T2.

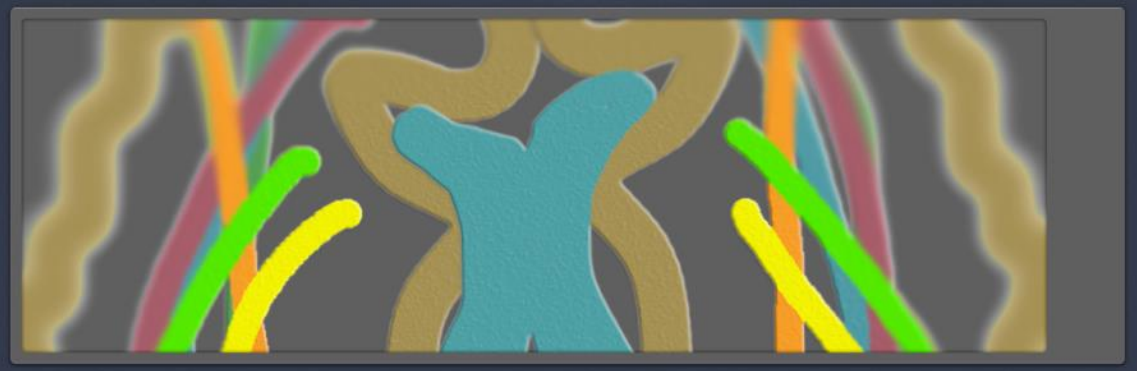
4 1 6 1 2

Visits

Editor:
Dr. Achint Singh
Dept. Neurorradiología
Universidad de Texas (EE.UU.)

MRI Atlas of Normal Myelination

Home | < 1 year | < 2 years



Age <1 year

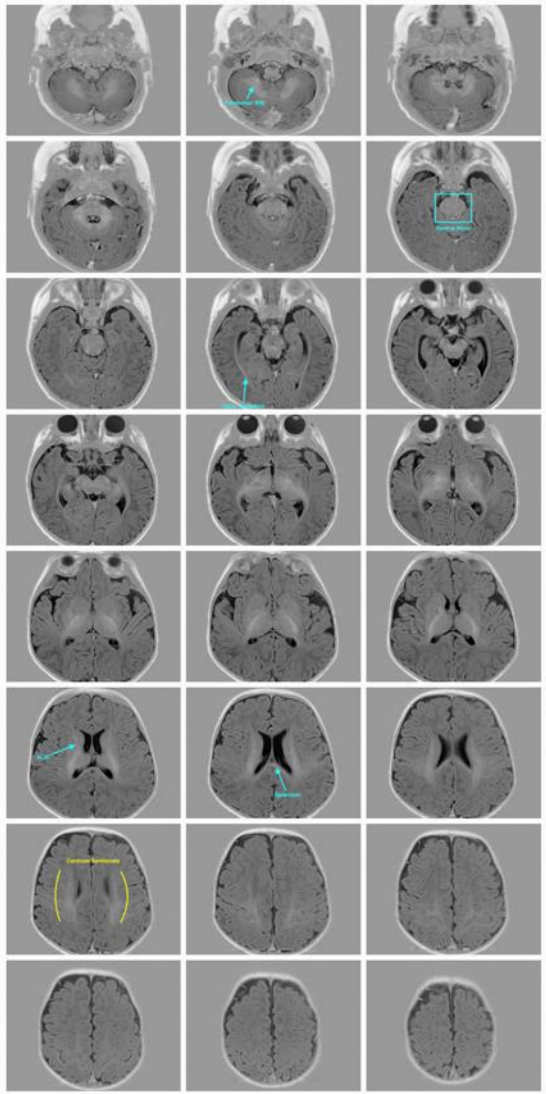
Click on the age of child to navigate the atlas

- Newborn
- 6 weeks
- 2 months
- 3 months
- 5 months
- 6 months
- 7 months
- 8 months
- 9 months
- 10 months
- 11 months
- 12 months

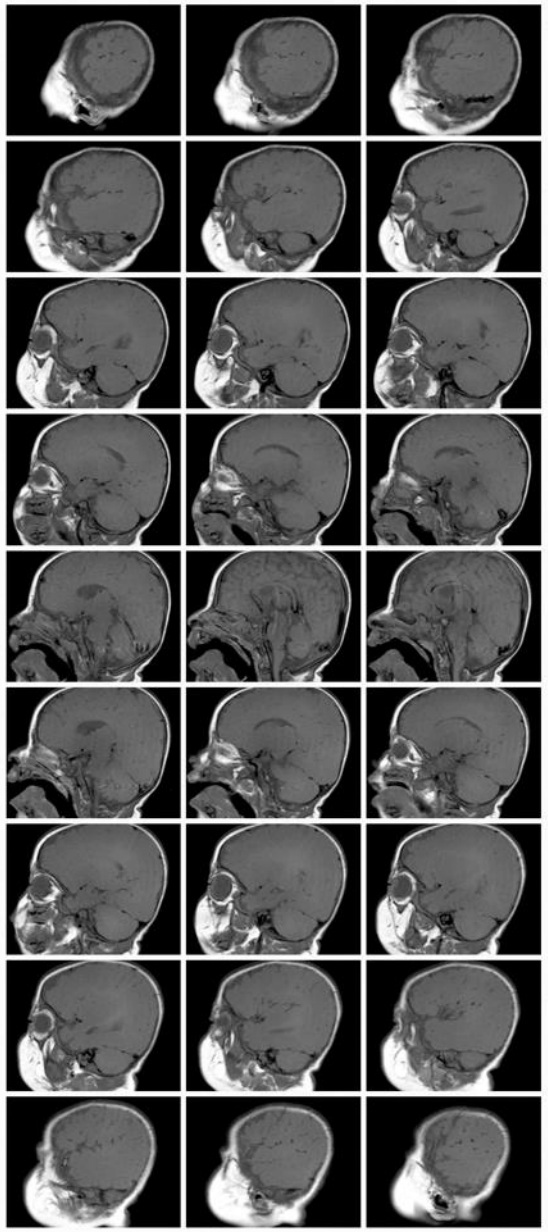
3 Months

T1

T1: ALIC complete, Splenium, Deep Occipital WM, Centrum semiovale

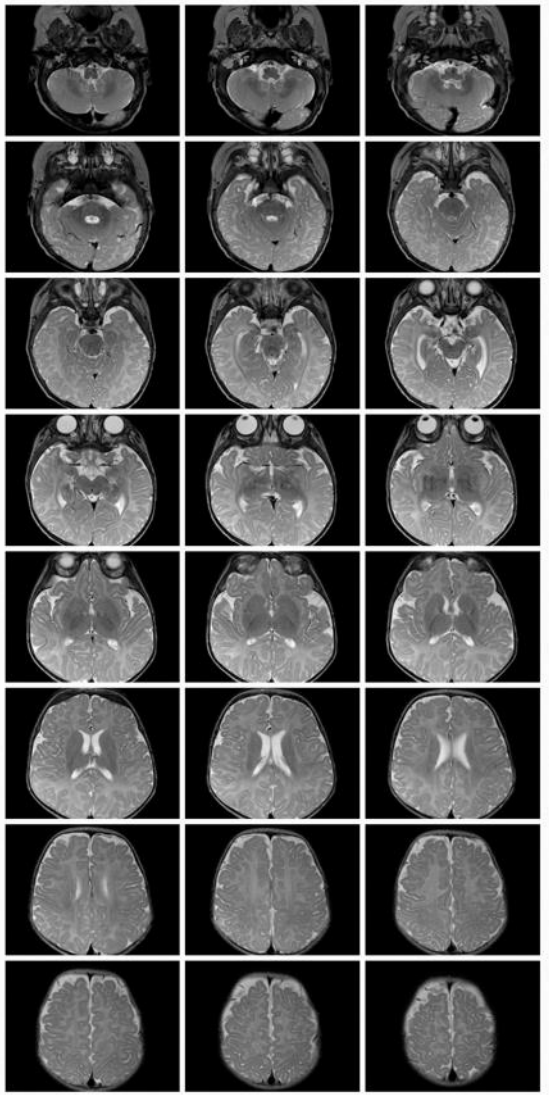


Sagittal T1



T2

Posterior half PLIC



Guión

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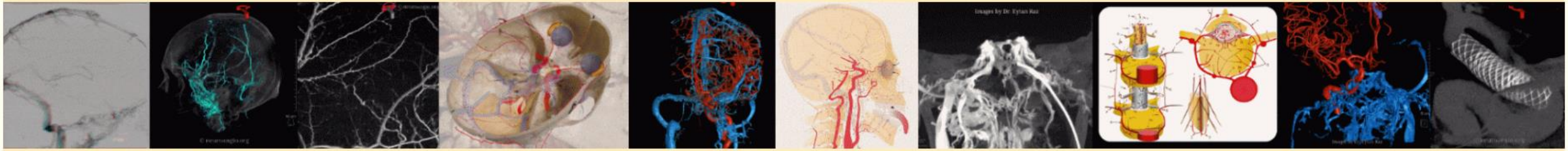
- Conferencias en Youtube®
- Neurorradiología pediátrica
- Neurorradiología vascular intervencionista



Home

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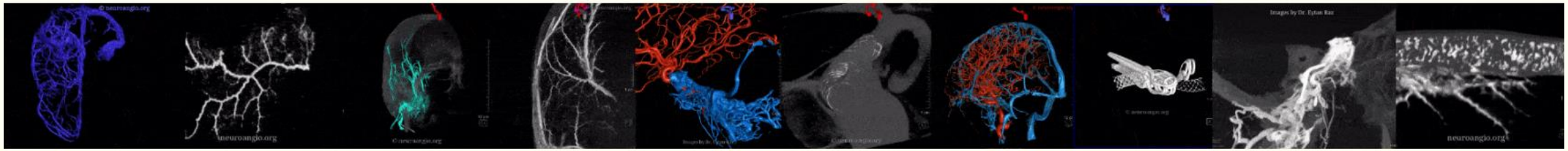
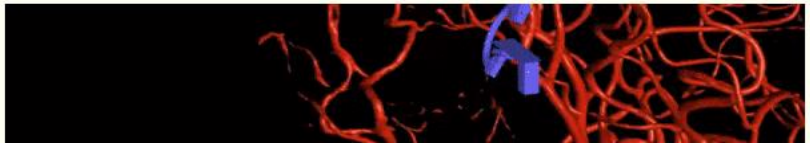
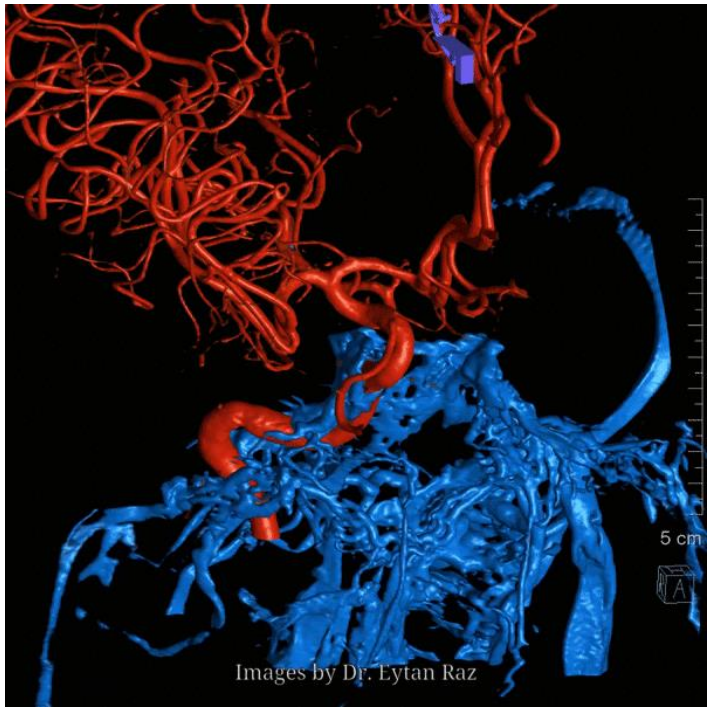


Welcome to Neuroangio — your neurovascular education and information resource

neuroangio.org has initiated a major overhaul of the website — see figures below and check out the "Diagrams and Drawings" page



neuroangio.org



- Lista de correo-e
- Presentaciones, herramientas *online* y temas
- Guías de tratamiento
- Archivo de casos
- Diagnóstico y tratamiento del tinnitus pulsátil
- Colección Yung Peng Huan
- BANANAZ (**B**asic and **A**dvanced **N**eurovascular **ANA**tomy **Z**oom)
- **I**nformación para pacientes
- Anatomía y variantes
- Anatomía venosa del cerebro
- Anatomía vascular espinal

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Dr. Maksim Shapiro
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Universidad de Nueva York (EE.UU.)

Conclusiones

- Internet es una fuente de recursos útiles para la formación en Neurorradiología
- Muchos de estos recursos son gratuitos
- La mayoría son recursos creados por sociedades científicas y neurorradiólogos particulares
- Predominan las presentaciones sobre temas de Neurorradiología

Enlace al *pdf* con los sitios web propuestos

Sitio web	URL
LearningNeuroradiology	https://sites.google.com/a/wisc.edu/neuroradiology/home
LearnNeuroradiology	https://learnneuroradiology.com/
EdNeurorad	https://www.edneurorad.com/
LearningHeadandNeck	https://www.learningheadandneck.com/
HeadAndNeckRad	https://headandneckrad.com/
AUR Core Curriculum Neuroradiology	https://radiologyresidentcorelectures.com/neuroradiologic-imaging-courses
ASNR Neurocurriculum	https://www.asnr.org/education/neurocurriculum-live/
BSNR Educational Programme	https://bsnr.org.uk/education/modules/
EuroRad	https://www.eurorad.org/
UCSD Neuroradiology Teaching File	http://spinwarp.ucsd.edu/NeuroWeb/TF.html
Neuroradiology Teaching File - Cincinnatti	http://neuroradiologyteachingfiles.com/files.html
ASHNR Youtube Channel	https://www.youtube.com/channel/UCa_XGZSJ8yq8xGNE8VZUWag/videos
Nakoontzmd Youtube Channel	https://www.youtube.com/c/nakoontzmd/featured
Barton Branstetter Youtube Channel	https://www.youtube.com/channel/UCLcOBXvRzJU9Y-WLkSUUzTA/playlists
Pediatric Neuro Cases for Call Preparation	https://docs.google.com/spreadsheets/d/1efT9p56SqpNC6KD3wQBziJAr5sedkfzrHTUnLegEUtE/edit#gid=0
NeuroradiologyU	https://www.neuroradiologyu.com/
MRI Atlas of Normal Myelination	https://www.myelinationmriatlas.com/
Neuroangio	http://neuroangio.org/