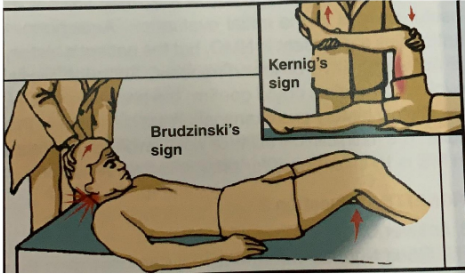


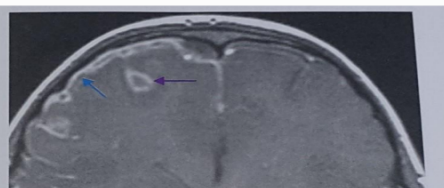
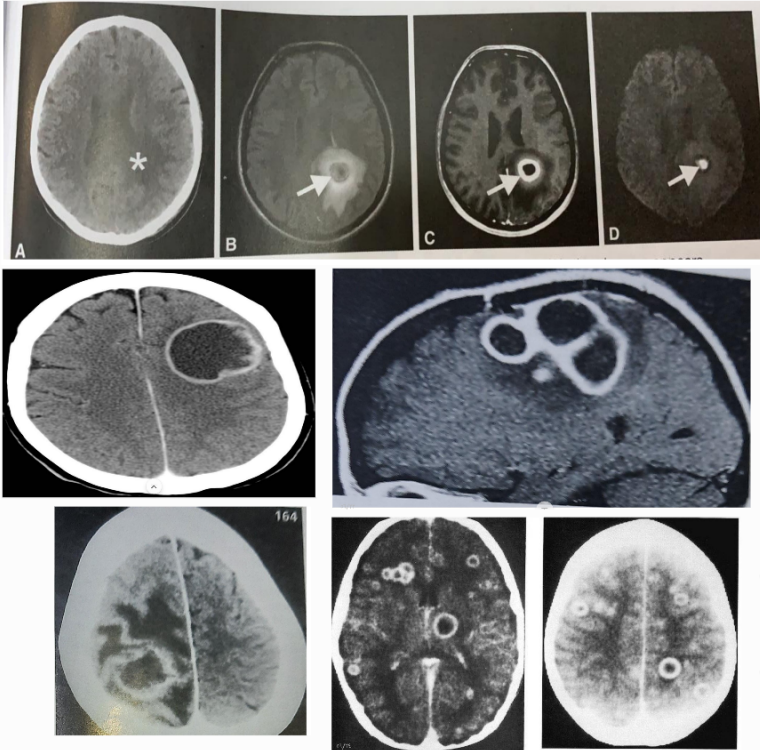
# CNS INFECTIONS



- physical signs seen in Acute Bacterial meningitis, but not specific to it
- Positive Kernig sign is inability to extend knee
- Positive Brudzinski sign: flexion at the hip when the neck is flexed

## Brain abscess

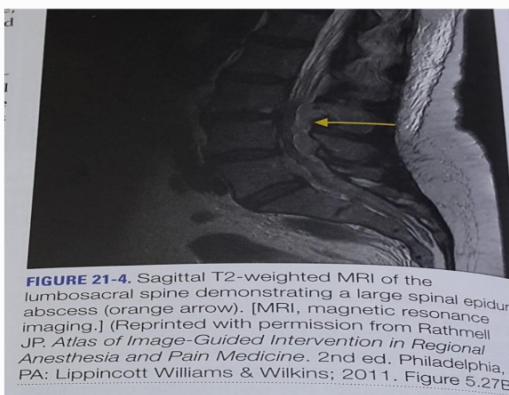
- focal intracranial lesion
- headache, seizures, increased ICP, Fever
- Solitary :invasion from nearby structures (sinuses, respiratory pathogens), traumatic (staph aureus, staph epidermidis)
- multiple :hematogenous dissemination ( infective endocarditis)
- 1st stage=cerebritis, 2nd stage=classical abscess
- radiology : mass lesion, surrounded by " ring enhancement", central necrosis
- important DDx : neoplastic lesions, differentiated by SPECT
- abnormal CSF, EEG and imaging



**FIGURE 21-3.** Frontal sinusitis with intracranial empyema. T1-weighted, contrast-enhanced image confirming likely subcortical infarction. Blue arrow: empyema. Violet arrow: subcortical infarct. (Reprinted with permission from Mancuso AA. *Head and Neck Radiology*. 1st ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2010. Figure 13.16.)

## CNS empyemas

- commonly in subdural or epidural spaces
- difficult to differentiate from a subdural hematoma
- fever and headache



**FIGURE 21-4.** Sagittal T2-weighted MRI of the lumbosacral spine demonstrating a large spinal epidural abscess (orange arrow). [MRI, magnetic resonance imaging.] (Reprinted with permission from Rathmell JP. *Atlas of Image-Guided Intervention in Regional Anesthesia and Pain Medicine*. 2nd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2011. Figure 5.27B)

## Spinal epidural abscess

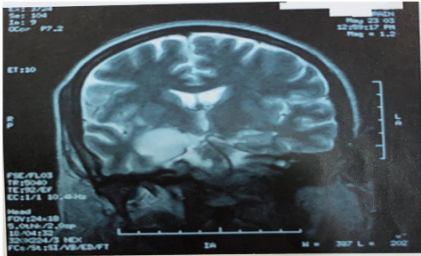
- neck or back pain, spinal cord or cauda equina compression
- thoracic or lumbar abscesses: leg weakness, urinary and sexual dysfunction
- acute presentation = spinal cord infarction
- etiology :epidural or spinal anesthesia or spine surgery(staph), vertebral body osteomyelitis or diskitis
- lumbar P =possibility of seeding the subarachnoid space



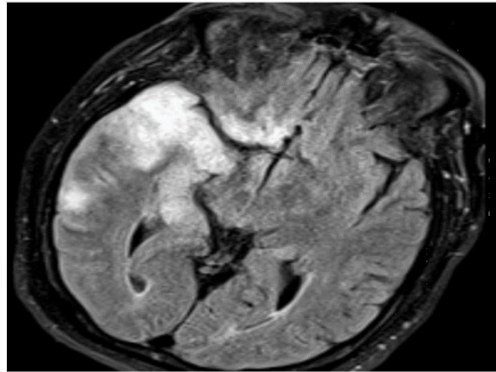
**FIGURE 21-5.** Tuberculous spondylitis (Pott's disease). A vertebral body is almost completely replaced by tuberculous tissue. Note the preservation of the intervertebral disks. (Reprinted with permission from Rubin R, Strayer DS, Rubin E. *Rubin's Pathology*. 6th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2011. Figure 26.22.)

## Pott's disease

- tuberculosis of the spine
- vertebral body infection extends into the epidural space
- subacute spinal cord or cauda equina compression
- feeeever , back pain
- DDx : metastatic cancer, differentiated by Spread through disk spaces to adjacent vertebral bodies

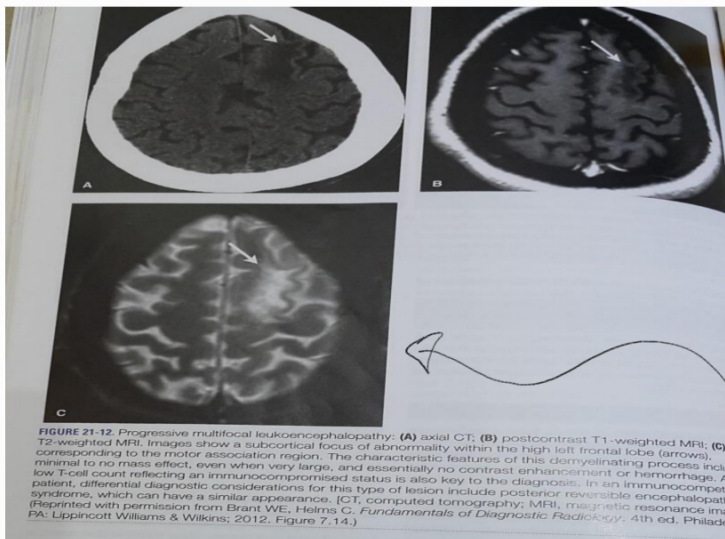
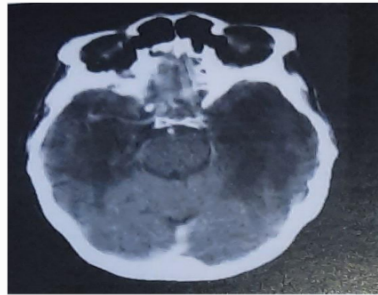
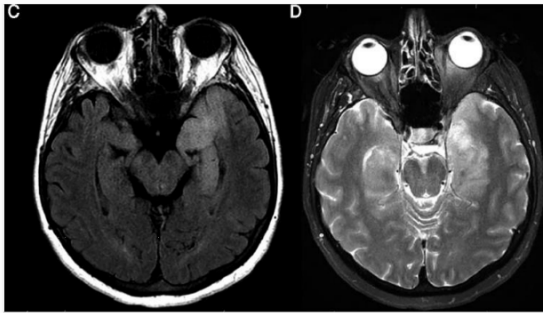


**FIGURE 21-9.** MRI findings in HSV encephalitis. T2-weighted coronal MRI demonstrating predominantly right mesial temporal hyperintensity and swelling in presumed HSV1 encephalitis. [HSV, herpes simplex virus; MRI, magnetic resonance imaging.] (Reprinted with permission from Wyllie E. *Wyllie's Treatment of Epilepsys*. 6th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2015. Figure 32-3a.)



## Viral encephalitis

- headache, fever, seizures
- HSV 1 encephalitis affect base of the brain , medial temporal and orbitofrontal
- Limbic dysfunctions, complex partial temporal seizures, olfactory hallucinations, amnesia
- CSF : Elevated RBCs and leukocytosis
- DDx : traumatic brain injuries
- epileptiform discharges on temporal (EEG)
- treated with acyclovir



## Progressive multifocal leukoencephalopathy (PML)

- demyelinating disease of the CNS
- JC) virus
- virus gets activated in HIV patients , MS patients taking Natalizumab
- insidious presentation with non specific symptoms
- nonenhancing foci of T2 hyperintensity within the subcortical white matter on MRI

قال صلى الله عليه وسلم: من كانت الآخرة همّة جعل الله غناه في قلبه وجمع له شمله وأتته الدنيا وهي راغمة ، ومن كانت الدنيا همّة جعل الله فقره بين عينيه وفرّق عليه شمله ، ولم يأت به من الدنيا إلا ما قُدّر له