

www.natures.ir

More Free USMLE , MCCEE ,MCQe and AMQ Flashcards

Transient ischemic attack

Reversible symptoms last less than 24 hours. Due to platelet thrombi or atheroemboli

Infarction stroke

85% of strokes. Can be thrombotic (atherosclerosis) white infarct or embolic (thromboemboli or atheroemboli) hemorrhagic infarct

Clinical features of medial cerebral artery stroke

Contralateral hemiparesis and sensory loss, aphasia if Broca area in the left hemisphere is involved, deviation of head and eyes toward side of lesion

Types of hemorrhagic strokes

Intraparenchymal, epidural, subdural, subarachnoid. Hemorrhagic strokes are 15% of all strokes

Causes of hemorrhagic stroke

Hypertension is MCC due to formation of microaneurysms that tend to rupture in basal ganglia or cerebellum. Arteriovenous malformations, amyloid, neoplasms, vasculitides

<p>Clinical features of hemorrhagic stroke</p>	<p>Acut onset of severe headache, nausea, vomiting and coma</p>
<p>Epidural hemorrhage</p>	<p>Due to trauma and skull fracture with tear of middle meningeal dural artery. "Talk and die" syndrome. Leads to herniation if not promptly evacuated</p>
<p>Subarachnoid hemorrhage</p>	<p>MCC: ruptured berry aneurysm. Sudden thunderclap headache, nuchal rigidity, neurological deficits and coma</p>
<p>Berry aneurysms</p>	<p>Thin-walled saccular outpuchings consisting of intima and adventitia only. Cause of subarachnoid hemorrhage. Associated with Marfan, Ehlers-Danlos and adult polycystic kidney disease</p>
<p>Spina bifida occulta</p>	<p>Bony defect of vertebral arch</p>
<p>Meningocele</p>	<p>Bony defect with outpuching of the meninges</p>

<p>Meningomyelocele</p>	<p>Defective bony arch with outpuching of meninges, spinal cord and spinal roots. May lead to paraplegia and urinary incontinence</p>
<p>Myelocele</p>	<p>Defective bony arch with complete exposure of spinal cord. May lead to paraplegia and urinary incontinence</p>
<p>Multiple sclerosis</p>	<p>Chronic relapsing-remitting episodes of demyelination in brain and spinal cord with progressive neurological deficits. Blurred vision or loss of vision, diplopia and vertigo, loss of sensation or weakness in one leg, hemiparesis. TH1 cytokines (IF-g, TNF) facilitate attack; TH2 cytokines (IL-4, IL-10) retard attack.</p>
<p>Parkinson disease clinical features</p>	<p>Loss of dopaminergic neurons in the substantia nigra. Resting tremor, rigidity and akinesia, expressionless face. Rx.: levodopa</p>
<p>Microscopic features of Parkinson disease</p>	<p>Lewy bodies: intracytoplasmic round eosinophilic inclusions tha contain alpha-synuclein; EM shows filaments of cytoskeletal origin</p>

<p>Huntington disease clinical features</p>	<p>Degeneration of GABAergic neurons of caudate nucleus. Chorea, dementia btween ages 20-40. Triplet repeat CAG and features of genetic anticipation and imprinting</p>
<p>Clinical features of Alzheimer disease</p>	<p>MCC of dementia. Insidious inset of memory impariment, alterations in mood and behavior, aphasia and apraxia</p>
<p>Microscopic features of Alzheimer disease</p>	<p>Amyloid precursor protein (APP gene) on chromosome 21 (Down syndrome). AB amyloid from the APP protein. Senile plaques: AB amyloid tangled with neuritic processes, microglia and astrocytes. Neurfibrillary tangles: intraneuronal aggregates of paired helical filaments protein.</p>
<p>Intracellular and extracellular edema</p>	<p>Hypoxia - vasodilation and Na/K atpase malfunctioning</p>
<p>ICP sign</p>	<p>Papilledema, headache projective vomitting WITHOUT NAUSEA sinus bradycardia hypertension herniation</p>
<p>psuedotumor cerebri</p>	<p>CSF preasure over 2x lowered protein -from decreased reabsorption, vit A overdose</p>

Uncal Herniation

Ipsilateral CNIII
Contralateral Peduncle -
> Ipsilateral hemiparesis
Ipsilateral PCA -> Contralateral
hemiparesis
Possible duresis -> decorticate
DDX- tonsillar hemorrhage - out
the foramen magnum ->
cardiorespiratory arrest

CSF character

Low protein and glucose, no
cells, high CL-

Noncommunicating
Hydrocephalus

Aqueduct of Sylvius stricture
MCC in infants - have SC
compression -> paralysis of
upward gaze aka Parinaud
(SC, CNIII EW damage)
-Tb base of the brain scarring
-ependymoma or
medulloblastoma
Ddx hydro ex vacuo - from
dementia when brain mass
decrease increases ventricle

Arnold Chiari

Caudal extension of medulla
and cerebellar vermis through
foramen magnum -> noncomm
hydro, platybasia,
meningomyelocele,
syringomyelia

Dandy Walker	Foramen M and L often closed hypoplasia of cerebellar vermis Cystic dilation of 4th ventricle Noncommunicating hydrocephalus
Syringomyelia	Capelike loss of pain and Temp Associated with A-C malformation Hx: burn without noticing, or confusion with ALS due to atrophy of hand muscles
Huntington Disease	Atrophy of caudate putamen GP-loss of GABA ->Excitotoxic
Freidrich's ataxia	Cerebellum -ataxic gait posterior and lateral columns of spinal cord - diminish joint sensation, spasticity Peripheral neuropathy Hypertrophic cardiomyopathy*****and kyphoscoliosis FRataxin
ALS	familial - bad SOD1 -> free radical injury of neurons spastic, weakness and atrophy eventually paralyze respiratory muscles
Wernicke-Koffmann disease	LMN disorder called SMA in children "floppy baby"

<p>Sx of AIP</p>	<p>Neuro dysfunction - acute abdomen Surgical abdomen looking - bellyful of scars Psychosis neuropathy dementia</p>
<p>W-K</p>	<p>hemorrhage and hemosiderin at mamillary bodies, neuronal loss gliosis wernick - confusion ataxia vertical nystagmus, ophthalmoplegia Korsakoff - limbic system target- antero and retrograde amnesia</p>
<p>Brain tumor</p>	<p>Adult - supratentorial-GBM meningioma Ependymoma schwannoma Children - Cystic cerebellar astrocytoma medulloblastoma (both these two in cerebellum) brainstem glioma -vascularization effect grade RF - tumor, NF, cigarette</p>
<p>GBM</p>	<p>white matter location - florid vasculature, pseudopalisading snake like appearance- seed the neuraxis via CSF but rarely outside -often de novo can be differentiation of low grade - butterfly glioma GFAP positive</p>

<p>Menigioma</p>	<p>NF association, arachnoidal origin, deltion of C22 (NF2 gene without NF)** -only benign psammoma (also in ovarian and thyroid)</p>
<p>Ependyomoma</p>	<p>4th ventiric kids or cadua equina in adults Perivascular psuedorosstes with proceses</p>
<p>Medulloblastoma</p>	<p>small cell pnet tumor -external granular cell layer of cerebellum in the midline- seeds neuraxis thus FOURTH VENTRICL DDX</p>
<p>Oligodendrogloma</p>	<p>Frontal lobe with calcifiction fried egg look slow grower</p>
<p>CNS lymphoma</p>	<p>B cell NHL AIDS and EBV</p>
<p>Metastasis of the brain</p>	<p>MCC - well circubumscribed -lungs, breast melanoma - grey white junction</p>
<p>Hemangioblastoma</p>	<p>VON HIPPEL LINDAU ASSOCIATION -EPO foamy cell with high vascularity also in spine and retina-> vision loss common***</p>

Peripheral Neuroathy	MCC diabetes also diphtheriae, heavy metals, amyloid, isoniazid, vincristine, hydralazine
Charcot Marie Tooth	Most common hereditary neuropathy, autosomal dominant -peroneal nerve atrophy - lower leg muscle atrophy - inverted bottle appearance- CANT DORSIFLEX
Guillan Barre	mC acute peripheral -mycoplasma, campylobacter precede it -ascending motor weakness high CSF protein normal cells - -> oligoclonal bands Rx plasmapheresis
Unilateral facial paralysis	Bell's palsy - HIV sarcoid or LYME - Lyme can cause bilateral***
Schwannoma	NF association- cerebellopontine angle C-100 positive since neural crest associated*** CNV changes due to impingement, tinnitus and enlarged meatus -zebra pattern with Antoni A and B alternating

Meniere Disease

Endolymph increase in inner ear -> loss of cochlea - dizziness vertigo spells Weber lateralize but rhine normal since bone and air equal reduction

Osteosclerosis

Fusion of middle ear ossicles- conduction deafness in elderly MCC...lateralize and bone > air

Perbycusis - cochleara hair degeneration mCC of sensorineal deafness in elderly

Otitis medica

MCCC of conduction deafness in children - SPneumoniae, F flu, moraxella

External otitis - outer ear canal -psuedomona staph aspergillus Malignant - DM

Ophatlmia neonatorum

Neisseria first wek chlymidia second

Orbital Cellulitis

S, pneumona or H flu - secondary to sinusitis - proptosis, periorbital swelling, ophthalmoplegia, normal retinal exam

<p>Glaucoma open vs closed</p>	<p>Open - decrease rate of outflow from schlemm, pathological CUPPING of disc, night blindness and tunnel vision Acute closed - uveitis, maybe from a mydriatic agent, lens displacement - PUPIL FIXED and nonreactive</p>
<p>uveitis</p>	<p>SARCOID, ulcerative colitis, ankylosing spondylitis - uveal tract (iris ciliary body choroid) pain blurry vision miosis pupil, adhesions, normal pressure</p>
<p>Macular Degeneration</p>	<p>Permanent visual loss in elderly</p>
<p>Cotton wool exudates</p>	<p>CMV retinitis - ganciclovir or foscarnet</p>
<p>Cataracts</p>	<p>Opacity in lens - advanced age, diabetes, RUBELLA CMV, corticosteroids</p>
<p>Tumor of the eye</p>	<p>RB or melanoma</p>

A patient with head trauma is purposely hyperventilated b/c

To produce respiratory alkalosis, causes cerebral vessel constriction which decreases the risk of vessel permeability

Acidosis; hypoxemia cause vasodilation of cerebral vessels which increase permeability

Clinical signs of Cerebral Edema

1. Papilledema
2. Headache with projectile vomiting; NO NAUSEA
3. Sinus Bradycardia, hypertension
4. Possible Herniation

Absence of tumor and obstruction of CSF with ICP

Pseudotumor Cerebri

Uncal herniation compresses

Oculomotor nerve, CNIII

Cingulate gyrus herniates thru falx cerebri. Herniation?

Subfalcine herniation

Subfalcine herniation compresses ????? and pt presents with ????

ACA
Headache and contralateral leg weakness

Medial portion of temporal herniates thru tentorium cerebelli	Uncal herniation
Down and out eye; mydriasis; midbrain hemorrhage; contralateral hemiplegia	Uncal/Transtentorial Herniation
A biconvex, or lentiform, shape under MRI	Epidural Bleed
Possible complications of Uncal Herniation	<ol style="list-style-type: none"> 1. Compression of Midbrain 2. Compression of CNIII 3. Compression of PCA
Subfalcine herniation compresses ????? and pt presents with ????	<p>ACA</p> <p>Headache and contralateral leg weakness</p>
Medial portion of temporal herniates thru tentorium cerebelli	Uncal herniation
Down and out eye; mydriasis; midbrain hemorrhage; contralateral hemiplegia	Uncal/Transtentorial Herniation

<p>A bioconvex, or lentiform, shape under MRI</p>	<p>Epidural Bleed</p>
<p>Possible complications of Uncal Herniation</p>	<ol style="list-style-type: none"> 1. Compression of Midbrain 2. Compression of CNIII 3. Compression of PCA
<p>Herniation: Produces Duret's hemorrhage</p>	<p>Uncal herniation</p> <p>Duret's hemorrhage = hemorrhage into the midbrain and pontine tegmentum usually fatal</p>
<p>Cerebellar tonsils herniate thru foramen magnum</p>	<p>Tonsillar herniation;</p>
<p>Herniation: Produces CV arrest and obtundation and death</p>	<p>Tonsillar herniation</p>
<p>CSF produced by</p>	<p>Choroid plexus from ependymal cells</p>
<p>CSF flow</p>	<p>Lateral Vent to foramen Monro to 3rd ventricle to aqueduct of Sylvius to fourth vent to foramina of Magendie and Luschka</p>

<p>CSF is reabsorbed by</p>	<p>Arachnoid granulations into dural venous sinus;</p>
<p>Open communicating between ventricles and subarachnoid space</p>	<p>Communicating hydrocephalus</p>
<p>Causes of Communicating hydrocephalus</p>	<ol style="list-style-type: none"> 1. Increased CSF production; eg Choroid plexus tumor 2. Obstruction of reabsorption by arachnoid granulations eg Postmeningitic scarring or tumor
<p>Obstruction of CSF flow out of ventricles</p>	<p>Noncommunicating, obstructive, hydrocephalus</p>
<p>Causes of Non-Communicating Hydrocephalus</p>	<ol style="list-style-type: none"> 1. Stricture of aqueduct of Sylvius 2. Tumor in fourth ventricle 3. Scarring at base of brain 4. Colloid cyst 5. Development disorders
<p>The most common cause of hydrocephalus in newborns</p>	<p>Blockage of Sylvius aqueduct</p>

Perinauds syndrome	Paralysis of upward gaze; Stricture of aqueduct of Sylvius
Clinical findings for Noncommunicating hydrocephalus in newborns	Ventricles dilate Enlarged head circumference
Clinical finding for Noncommunicating Hydrocephalus in ADULTS	Progressive dementia Wide-based gait Urinary Incontinence
Hydrocephalus Ex Vacuo	Alzheimer disease Dilated ventricles and decrease brain mass
Frog-like appearance and maternal polyhydraminos	Aencephaly
Defect in closure of posterior vertebral arch with dimple or tuft of hair of L5-S1	Spina bifida occulta
Spina bifida and cystic mass containing meninges in lumbosacral region	Menigocele

<p>Spina bifida and cystic mass containing meninges and spinal cord in lumbosacral region</p>	<p>Meningomyelocele</p>
<p>Hypoplasia of cerebellar vermis Cystic dilation of 4th vent Non-communicating hydro</p>	<p>Dandy-Walker Malformation</p>
<p>Caudal extension of medulla and cerebellar vermis thru foramen mag Platybasia(Flattening of skull base) Meningomyelocele, Syringomyelia</p>	<p>Arnold-Chiari Malformation</p>
<p>Associated with Arnold-Chiari malformation</p>	<p>Syringomyelia</p>
<p>Decrease pain and temperature in hands; atrophy of intrinsic muscles of hands</p>	<p>Syringomyelia</p>
<p>Degenerative disease of spinal cord via fluid filled cavity in spinal cord</p>	<p>Syringomyelia Syrinx= fluid filled cavity Myelia = spinal cord</p>

Autosomal dominant disorder
Mental retardation and
seizures; hamartomas in brain;
and kidneys

Tuberous Sclerosis

"Ash leaf" lesions,
hypopigmented skin

Tuberous Sclerosis

Best way to identify skin
lesions of tuberous sclerosis

Wood's Lamp

"candlestick drippings" in
ventricles

Tuberous Sclerosis

What are hamartomatous
lesions?

Astrocyte proliferations in
subependyma

Autosomal dominant disorder;
Cafe-au-lait-macules, Lisch
nodules; Optic nerve glioma;
meningioma acoustic neuroma

Neurofibromatosis

Associated with
pheochromocytoma, and
acoustic neuroma

Neurofibromatosis

<p>Vascular malformation of the face Ipsilateral arteriovenous malformation in meninges</p>	<p>Sturge-Weber Syndrome</p>
<p>Birthmark of the face in the trigeminal distribution of V1; pia mater malformations in occipital and parietal lobes</p>	<p>Sturge-Weber Syndrome</p>
<p>Cavernous Hemangiomas in cerebellum and retina; increased pheochromocytoma and renal cell carcinoma</p>	<p>Von-Hippel Lindau Syndrome VHL</p>
<p>Encephalitis caused by Mosquitos are the vector; Birds are the host;</p>	<p>Arbovirus</p>
<p>Most common cause of viral meningitis; peaks late summer and early autumn</p>	<p>Coxsackie virus; Picornavirus +SS RNA, icosahedral,</p>
<p>Most common viral infection of AIDS causing ENCEPHALITIS</p>	<p>Cytomegalovirus</p>
<p>CMV appearance</p>	<p>Intranuclear basophilic inclusions</p>

<p>Causes hemorrhagic necrosis of temporal bone</p>	<p>HSV type 1</p>
<p>Meningitis and Encephalitis caused by mouse fecal contamination of food or water</p>	<p>Lymphocytic Choriomeningitis</p>
<p>Encephalitis destroys upper and lower motor neurons causes muscle paralysis</p>	<p>Poliovirus Picornavirus: +ssRNA, icosahedral</p>
<p>Neurons contain Negri bodies, causes encephalitis</p>	<p>Rabies Rhabdovirus, -RNA, enveloped</p>
<p>Transmitted by corneal transplants or human brain contact</p>	<p>CJD</p>
<p>Brain has "bubbles or holes" spongiform in cerebral cortex</p>	<p>CJD</p>
<p>Encephalitis: Occurs in AIDS pts with CD4 Th less 50 cells/uL</p>	<p>Progressive multifocal leukoencephalopathy</p>

<p>Slow virus encephalitis assoc with Rubeola, measles, virus</p>	<p>Subacute Sclerosing Panencephilitis Intranuclear inclusion in oligodendrocytes Paramyxovirus - SSRNA enveloped</p>
<p>Most common benign brain tumor in adults</p>	<p>Meningioma</p>
<p>Most common primary CNS tumor in adults</p>	<p>Glioblastoma multiforme</p>
<p>Most common childhood tumors</p>	<p>Cystic astrocytoma and Medulloblastoma</p>
<p>On MRI Syringomyelia will show</p>	<p>Cervical Enlargement and Cavity</p>
<p>Intranuclear ophthalmoplegia is pathognomonic for Why?</p>	<p>MS Demyelination of MLF</p>
<p>Amaurosis Fugax</p>	<p>Temporary loss of vision, embolic material trapped in bifurcation of retinal vessels</p>

MCA stroke results in	Contralateral hemiparesis Sensory loss in face and upper extremity Head and eyes deviate towards the lesion
ACA stroke results in	Contralateral paresis Sensory loss in lower extremity
Strokes in vertebrobasilar arterial system	Vertigo, Ataxia Ipsilateral sensory loss of face Contralateral hemiparesis and sensory loss in the trunk and limbs
Ischemic type of stroke due to embolization	Embolic stroke
Intracerebral hemorrhage a complication of	Hypertension Rupture of aneurysm
Intracerebral hemorrhage most commonly affects	Basal Ganglia
Rupture of a berry aneurysm causes this bleed	Subarachnoid hemorrhage

Most common site of berry aneurysm

ACA and Anterior Communicating

Second most common site for berry aneurysm

MCA

Described as the worst headache in my life

Subarachnoid bleed

Lacunar Infarcts are

Microinfarcts less 1 cm

What causes lacunar infarcts

Hypertension or DM leads to hyaline arteriosclerosis

CNS (central nervous system) infections are mostly due to?

sepsis

meningitis = ?

inflammation of pia mater

<p>bacterial meningitis the majority of organisms originate where?</p>	<p>originate in nasopharynx</p>
<p>viral meningitis is most often fransmitted by?</p>	<p>fecal-oral route</p>
<p>miningitis clinical findings?</p>	<p>nuchal rigidity</p>
<p>what happens to the CSF (Cerebral spinal fluid) protein and CSF glucose in meningitis?</p>	<p>↑ CSF protein (viral, bacterial, fungal) ↓CSF glucose (bacterial, fungal)</p>
<p>encephalitis = ?</p>	<p>inflammation of brain; headache; drowsiness; coma</p>
<p>cerebral abscess= ?</p>	<p>hematogenous; contiguous spread</p>
<p>CSF(cerebrospial fluid) Feature: Total cell count Bacterial/Fungal? Viral?</p>	<p>Bacterial/Fungal: 1000-20,000 cells/mm³ Viral: <1000 cells/mm³</p>

<p>CSF(cerebrospial fluid) Feature: Differential count Bacterial/Fungal? Viral?</p>	<p>Bacterial/Fungal: >90% neutrophils (>80%) Viral: First 24-48 hours, neutrophils, then switches to lymphocytes/monocytes after 48 hours</p>
<p>CSF(cerebrospial fluid) Feature: CSF glucose Bacterial/Fungal? Viral?</p>	<p>Bacterial/Fungal: Decreased (<40 mg/dL) Viral: Normal: exceptions-mumps, herpes</p>
<p>CSF(cerebrospial fluid) Feature: CSF protein Bacterial/Fungal? Viral?</p>	<p>Bacterial/Fungal: Increased (>50 mg/dL) Viral: Increased</p>
<p>CSF(cerebrospial fluid) Feature: Gram stain Bacterial/Fungal? Viral?</p>	<p>Bacterial/Fungal: Frequently positive (60-90%) Culture positive (65-90%) Viral: Negative</p>
<p>Virus: Arboviruses Disease? Comments?</p>	<p>Disease: Encephalitis Comments: -Mosquitoes are the vector -Wild birds are the reservoir for the virus -West Nile virus: crows and other birds have spread the disease from New York to the West Coast -Encephalitis can be fatal</p>

Virus:
Coxsackievirus
Disease?
Comments?

Disease:
Meningitis
Comments:
-Enterovirus: most common
cause of viral meningitis
-Viral meningitis peaks in late
summer and early autumn

Virus:
Cytomegalovirus
Disease?
Comments?

Disease:
Encephalitis
Comments:
-Most common viral CNS
infection in AIDS
-Primarily intranuclear
basophilic inclusions
-Periventricular calcification in
newborns
-Treatment: ganciclovir +
foscarnet; or valganciclovir

Virus:
Herpes simplex virus type 1
Disease?
Comments?

Disease:
Meningitis and encephalitis
Comments:
Causes hemorrhagic necrosis
of temporal lobes
Treatment: IV acyclovir

Virus:
HIV
Disease?
Comments?

Disease:
Encephalitis
Comments:
Most common cause of AIDS
dementia
Microglial cells fuse to form
multinucleated cells

Virus:
Lymphocytic choriomeningitis
Meningitis and encephalitis
Disease?
Comments?

Comments:
-Endemic in the mouse population
-Transmission: food or water contaminated with mouse urine/feces
-Meningoencephalitis: combination of nuchal rigidity and mental status abnormalities (encephalitis)
-CSF findings: increased protein, lymphocyte infiltrate, normal to decreased glucose

Virus:
Poliovirus
Disease?
Comments?

Disease:
Encephalitis and myelitis-spinal cord
Comments:
-Destroys upper and lower motor neurons
-Causes muscle paralysis
Post-polio syndrome: occurs in ~ 50% of people with previous poliomyelitis; usually occurs 15-30 years after original infection; increased muscular weakness/pain in muscle groups already affected; excessive fatigue

Virus:
Rabies virus
Disease?
Comments?

Disease:

Encephalitis

Comments:

- Most often transmitted by raccoon bite (40% of cases)
Other vectors are dog, skunk, bat, and coyote
- Viral receptor is acetylcholine receptor
- Initially replicates at site of the bite; moves by axonal transport to the CNS; after CNS replication, it migrates to the saliva
- Animal transmits virus when in the agitated state (encephalitis stage)
- Incubation period 10-90 days
- Prodrome: fever, paresthesias in and around the wound site
- Hydrophobia: due to spasms of throat muscles when swallowing
- Followed by flaccid paralysis
 - Encephalitis: death of neurons; eosinophilic intracytoplasmic inclusions called Negri bodies; seizures, coma, death
- Treatment: wash wound site (quaternary ammonium compound); give passive immunization (immune globulin) mostly into wound site (where virus initially replicates); give active immunization

Bacterium:
Group B streptococcus
(Streptococcus agalactiae)
Disease?
Comments?

Disease:
Neonatal meningitis
Comments:
-Gram-positive coccus
-Most common cause of
neonatal meningitis (49%)
-Spreads from a focus of
infection in maternal vagina
-Empiric treatment (culture
negative): ampicillin +
cefotaxime
-Specific treatment: penicillin G
or ampicillin

Bacterium:
Escherichia coli
Disease?
Comments?

Disease:
Neonatal meningitis
Comments:
-Gram-negative rod
Second most common cause of
neonatal meningitis (18%)
-Empiric treatment (culture
negative): ampicillin +
cefotaxime
-Specific treatment: ceftazidime
+ gentamicin

Bacterium:
Listeria monocytogenes
Disease?
Comments?

Disease:
Neonatal meningitis
Comments:
-Gram-positive rod with tumbling motility; actin rockets help organism to move from cell to cell
-Pathogen found in soft cheese, hot dogs
-Empiric treatment (culture negative): ampicillin + cefotaxime
-Specific treatment: ampicillin ± gentamicin

Bacterium:
Neisseria meningitidis
Disease?
Comments?

Disease:
Meningitis
Comments:
-Gram-negative diplococcus; locates in posterior nasopharynx
-Most common cause of meningitis in those between 1 month and 18 years of age
-Treatment: ceftriaxone
-Prophylaxis for people in close contact: ciprofloxacin or rifampin or ceftriaxone

Bacterium:
Streptococcus pneumoniae
Disease?
Comments?

Disease:
Meningitis
Comments:
-Gram-positive diplococcus
Most common cause of
meningitis in patients > 18
years of age (some authors say
N. meningitidis is the most
common and S. pneumoniae
the 2nd most common)
-Treatment: penicillin G or
ampicillin

Bacterium:
Mycobacterium tuberculosis
Disease?
Comments?

Disease:
Meningitis
Comments:
-Complication of primary
tuberculosis
-Involves base of brain
-Vasculitis (infarction) and
scarring (hydrocephalus)
-Treatment: isoniazid, rifampin,
ethambutol, pyrazinamide,
dexamethasone (prevent
scarring)

Bacterium:
Treponema pallidum
Disease?
Comments?

Disease:
Meningitis, encephalitis,
myelitis
Comments:
-Spirochete
~Types of neurosyphilis:
-Meningovascular: vasculitis
causing strokes
-General paresis: dementia
-Tabes dorsalis: involves
posterior root ganglia and
posterior column; causes
ataxia, loss of vibration
sensation, absent deep tendon
reflexes, Argyll-Robertson pupil
(pupils accommodate but do
not react)
-Treatment: penicillin G
(difficult to treat)

Fungus/Parasite:
Cryptococcus neoformans
Disease?
Comments?

Disease:
Meningitis and encephalitis
Comments:
-Occurs in
immunocompromised host
-Most common fungal CNS
infection in AIDS
-Budding yeasts visible with
India ink
-Treatment: fluconazole non-
AIDS, amphotericin +
flucytosine

Fungus/Parasite:
Mucor species
Disease?
Comments?

Disease:
Frontal lobe abscess
Comments:
Occurs in diabetic ketoacidosis;
spreads from frontal sinuses
Treatment: amphotericin B

Fungus/Parasite:
Naegleria fowleri
Disease?
Comments?

Disease:
Meningoencephalitis
Comments:
-Protozoa (amoeba)
-Involves frontal lobes
-Contracted by swimming in
freshwater lakes
-Treatment: amphotericin B

Fungus/Parasite:
Trypanosoma
gambiense/rhodesiense
Disease?
Comments?

Disease:

Encephalitis

Comments:

- Protozoa (hemoflagellate)
- Transmission: bite of an infected tsetse fly (*Glossina*)
- Trypanosomes invade the blood and lymphatics early in the disease; initial drainage into the posterior cervical nodes produces lymphadenopathy (Winterbottom's sign); encephalitis occurs in later stages
- Diffuse encephalitis: somnolence ("sleeping sickness") due to the release of sleep mediators by the organisms
- Trypanosomes are capable of antigen variation (cyclical fever spike)
- Starvation is the most common cause of death
- Diagnosis: trypanosomes in blood, CSF; serologic tests; characteristic increase in IgM early in the disease
- Treatment: pentamidine early in the disease; melarsoprol in encephalitis stage

Fungus/Parasite:
Taenia solium
Disease?
Comments?

Disease:
Cysticercosis
Comments:
Helminth (tapeworm; cestode);
pig transmitted disease
Patient (intermediate host)
ingests food or water
containing eggs; eggs develop
into larval forms (cysticerci)
that invade brain, producing
calcified cysts causing
seizures; hydrocephalus
Treatment: albendazole +
dexamethasone

Fungus/Parasite:
Toxoplasma gondii
Disease?
Comments?

Disease:
Encephalitis
Comments:
-Protozoa (sporozoan)
-Most common CNS space-
occupying lesion in AIDS; ring-
enhancing lesions on CT
-Congenital toxoplasmosis
produces basal ganglia
calcification
-Treatment: pyrimethamine +
sulfadiazine + folinic acid
(leucovorin)