

Case Conference

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2012/03/13

Patient Data

Case 1:

- 53 y/o, male
- Date: 2012/XX/XX, 14:01
- E4V5M6
- TPR: 36.4 /101/10 BP:130/71 mmHg
- SpO2: 100%
- 檢傷主訴：頭痛
- Triage: 3

2

History

- Chief Complaint: Headache for 1 week
- Diplopia for 2 days
- Mild blurred vision
- OS pain
- No fever
- No chills
- No muscle power decrease

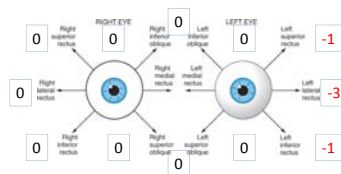
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Past History

- Allergy: NKA
- No DM
- No HTN
- No history of stroke

Physical Examination

- Cons: clear, E4V5M6
- Head: isocoric pupils
- Binocular diplopia
- Neck: supple
- Chest: clear BS
- RHB, no murmur
- Abdomen: soft,
- No tender
- No rebound pain
- No muscle guarding
- Extremity: warm
- Freely movable
- Neurologic examination
- No facial palsy
- Muscle power: normal
- Cranial nerve
- All normal
- Except left CN6 nerve



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Impression

- Headache
- Cerebral haemorrhage
- Glaucoma

Initial management

Day1 15:00

- Hb, WBC/DC
- Panel 1
- PT/aPTT
- N/S run 60 cc/hr
- ECG

Day1 15:09

- Consult Ophthalmologist

Day1 15:46

- Consult Neurologist

Lab Data

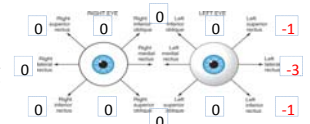
CBC/DC		PT/aPTT		Biochemistry	
WBC (x10 ³ /uL)	12	PTp	12.2	GLU (mg/dL)	106
RBC (x10 ⁶ /uL)	4.14	PTc	10.6	GOT (U/L)	18
Hb (g/dL)	13.2	PT (INR)	1.14	BUN (mg/dL)	10
HCT (%)	39.1	PTTp	29.9	Cr (mg/dL)	0.9
MCV (fl)	94.4	PTTc	32.8	Na (meq/L)	143
MCH (Pg)	31.9			K (meq/L)	4.1
MCHC (%)	33.8				
PLT (x10 ³ /uL)	371				
Seg (%)	65.7				
Lymph (%)	25.0				
Mono (%)	8.6				
Eosin (%)	0.5				
Band (%)					

ECG

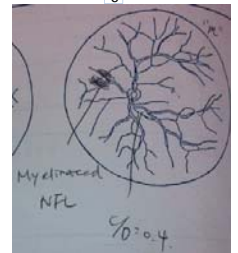


Ophthalmologist Day1

- Binocular diplopia(+)
- IOP:17(OS) 15(OD) mmHg
- C/D=0.4 (OS)



- Impression
 - CN6 palsy
 - Stroke related(favored)
 - Microangiopathy



Neurologist Day1

16:30

- No choking
- No slurred speech
- No weakness
- No ptosis
- No stiff neck
- No red eye
- No bruit(carotid a.)

15:08 Brain CT

- No hemorrhage
- No tumor
- Imp:CN6 palsy
- Plan:
 - CTA to r/o aneurysm
 - Brain MRI

Neurologist Day1

20:30 Brain CTA

- No aneurysm
- Moderate to high grade stenosis at left distal petrous and presellar ICA segments

21:15 Neurologist

- Suspect ICA stenosis
 - Bokey 3# ST + 1# QD
 - Brain MRI

ER course Day 2 and 3

- Day 2
 - Headache(+),Diplopia(+) didn't improve
 - Kept Bokey and await brain MRI
- Day 3
 - Headache(+),Diplopia(+) didn't improve
 - Reconsult Neurologist: Observation
 - Kept Bokey and await brain MRI

ER course Day 4

- Day 4
 - Brain MRI 12:51
 - Left petrositis with focal inflammatory change
 - Neurologist:
 - Prednisolone 6# PO ST + QD
 - Cease bokey administration
 - Check ESR and CRP

ER course Day 4

- Day 4 15:56

ESR	53	CRP	5.69
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- Ceased prednisolone administration
- Consult ENT specialist
- Consult Infection specialist
- Perform lumbar puncture
- Added Vancomycin and Rocephin

ER course Day 4

- Day 4 20:00

- Shortness of breath
- SpO2=85%
- Chest x ray: Bil pneumonia patches

WBC/DC		Biochemistry	
WBC (x10 ⁹ /uL)	12.3	GLU (mg/dL)	-
Seg %	69.2	GOT (U/L)	18
Lym %	20.7	BUN (mg/dL)	-
Mono %	9.7	Cr (mg/dL)	0.8

ER course Day 5

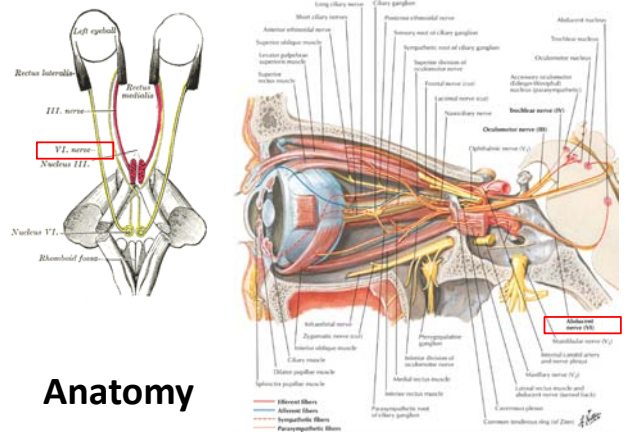
- Day 5 Lumbar puncture
 - No CNS infection
- ENT specialist
 - No otitis media
- Infection specialist
 - Admitted into infection's service

Final diagnosis

- Petrositis
- Abducens nerve palsy

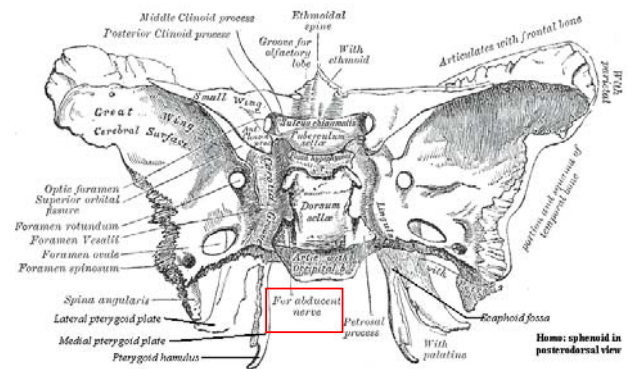
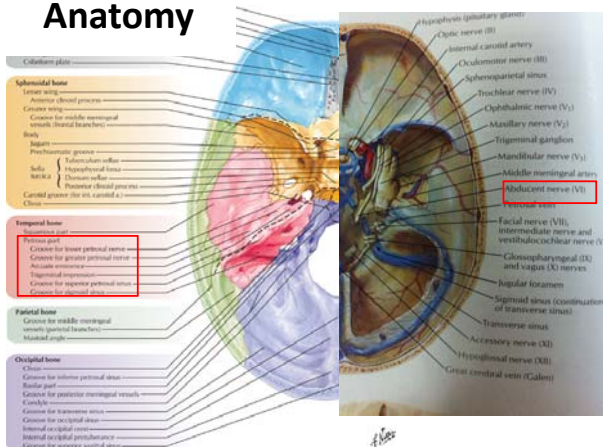
Gradenigo's Syndrome

Abducens nerve palsy



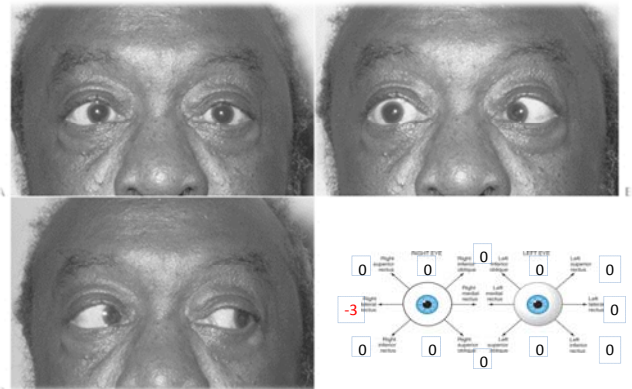
Anatomy

Anatomy

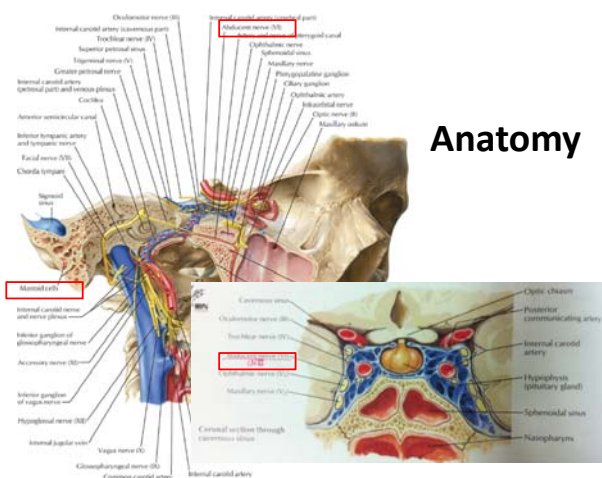


Anatomy

When you see this



Anatomy



First, we have to...

- Make sure it's CN6 palsy
- Mimickers
 - Orbital lesions
 - Duane syndrome
 - Thyroid disease
 - Myasthenia gravis

Ayberk G Review of a series with abducens nerve palsy. Turk Neurosurg. Oct 2008;18(4):366-73.



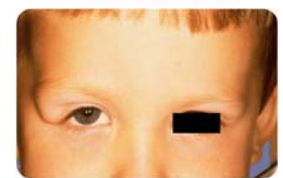
Duane syndrome



Graves' Disease



Myasthenia gravis



Orbital lesions

Presentations



Esotropia

Head-turn

Binocular Diplopia

Physicals

- An **esodeviation** that increases and is often greater at a distance
- An **isolated** abduction deficit
- **Slowed** ipsilateral saccades
- **Papilledema** (if increased intracranial pressure)
- **Nystagmus** (usually in children, ie, secondary to pontine glioma)
- **Otitis media**
- Orbital wall **fracture**



Causes

- **Elevated intracranial pressure**
- **Subarachnoid space lesions**
 - hemorrhage, infection, inflammation, space-occupying tumor, cavernous sinus mass
- **Vascular**
- **Petrous apex lesions**
- **Metabolic** (eg, vitamin B, Wernicke-Korsakoff syndrome)
- **Neoplasm** (children) - Pontine glioma)
- **Infectious** (eg, Lyme disease, syphilis)
- **Congenital absence of the sixth nerve** (eg, Duane syndrome)
- **Trauma**
- **Post-lumbar tap**

Anwar S. Abducens nerve palsy as a complication of lumbar puncture. Eur J Intern Med. Dec 2008;19(6):636-7.

The localization of abducens nerve lesions

Structure involved	Clinical presentation
Nuclear lesions	
Abducens nucleus	Horizontal gaze palsy Möbius syndrome (gaze palsy with facial diplegia) Duane retraction syndrome (gaze palsy with globe retraction and narrowing of palpebral fissure with adduction) Foville syndrome (ipsilateral gaze palsy, facial paresis, dysmetria occasionally with contralateral hemiparesis)
Lesions of the abducens fascicle	
Abducens fascicle	Isolated CN VI palsy
Anterior paramedian pons	Ipsilateral CN VI palsy, ipsilateral CN VIII palsy, contralateral hemiparesis (Millard-Gutlier)
Prepontine cistern	May have contralateral hemiparesis
Lesion of abducens nerve (subarachnoid, petrous)	
Petrous apex (Dorello canal)	CN VI palsy, deafness, facial (especially retroorbital) pain (Gradenigo)
Cavernous sinus	Isolated CN VI palsy; CN VI palsy plus Homer syndrome; also may affect CN III, IV, V1
Superior orbital fissure syndrome	CN VI palsy with variable affection of CN III, IV, V1; proptosis
Orbit	CN VI palsy; visual loss; variable proptosis, chemosis, lid swelling


Modified from: Brazis PW, Masdeu JC, Biller J. Localization in Clinical Neurology, Fourth Edition. Lippincott Williams & Wilkins, 2001

Work Up Laboratory Studies

- Complete blood cell (CBC) count
- Glucose levels
- Glycosylated hemoglobin (HbA1C)
- Erythrocyte sedimentation rate and/or C-reactive protein
- Rapid plasma reagin test
- Fluorescent treponemal antibody-absorption test *syphilis*
- Lyme titer
- Glucose tolerance test
- Antinuclear antibody test

Imaging Studies

- No marked improvement after 6 weeks
- *If other cranial nerves become involved*
- *Accompany with neurologic deficits*

 *Brain CT*
CT angiography

Imaging Studies

- MRI is indicated
 - Patients *younger* than 45 years
 - Associated pain or other *neurologic abnormality*
 - History of cancer
 - *Bilateral* sixth nerve palsy
 - *Papilledema*
 - In the event no marked improvement is seen or other nerves become involved

Tsai TH Nonaneurysmal cranial nerve compression as cause of neuropathic strabismus: evidence from high-resolution magnetic resonance imaging. *Am J Ophthalmol*. Dec 2011;152(6):1067-1073.e2

Lumbar puncture

**Should be considered if
MRI results are negative**

Other tests

- Check history for
 - Diabetes mellitus
 - Cancer
 - Thyroid disease
 - Hypertension
- History of recent trauma, ear infections
- *An otoscopic examination may be performed to rule out a complicated otitis media*
- Rule out other cranial nerve involvement.

Medical Care

- *Truly isolated cases often are benign.*
- They can be followed with a serial examination, *at least every 6 weeks, over a 6-month period* to note decreasing symptoms (diplopia) and resolution of the paretic lateral rectus

Medical Care

- Older patients in whom giant cell arteritis
 - Is a consideration should start the standard treatment with **prednisone or intravenous methylprednisolone** as soon as possible.

Prognosis

This condition generally resolves within 6 months

Rhee DJ, Pyfer MF.
The Wills Eye Manual: Office and Emergency Room diagnosis and treatment of eye disease. Lippincott Williams & Wilkins; 1999.

Thanks for your attention!