



الطبيب والجراحة

لجنتنة



Female came with the worst headache in her life, she's confused, obeys commands, and opens eyes spontaneously, she had left hemiparesis

What is the diagnosis

**SAH**

What's the pathophysiology of the most common cause

**Spontaneous rupture of berry aneurysm**

What is WFNS score

**3**

How to treat ( 2 ways ) :

**Clipping and coiling**

What's the role of CCB? **Neuroprotection, prevent vasospasm**

What never happens before day 3? **Vasospasm**

What are the 3 H, and what are they used for?

**Induced hypervolemia, hemodilution and hypertension used to increase cerebral perfusion**



1. If right side affected? ( left or right nerve injury)

Right side affected

3. Cause ?

Herniation causes compression of the oculomotor nerve (CN III) especially the parasympathetic fibers

4. What is this sign ?

Anisocoria

5. Type of herniation ?

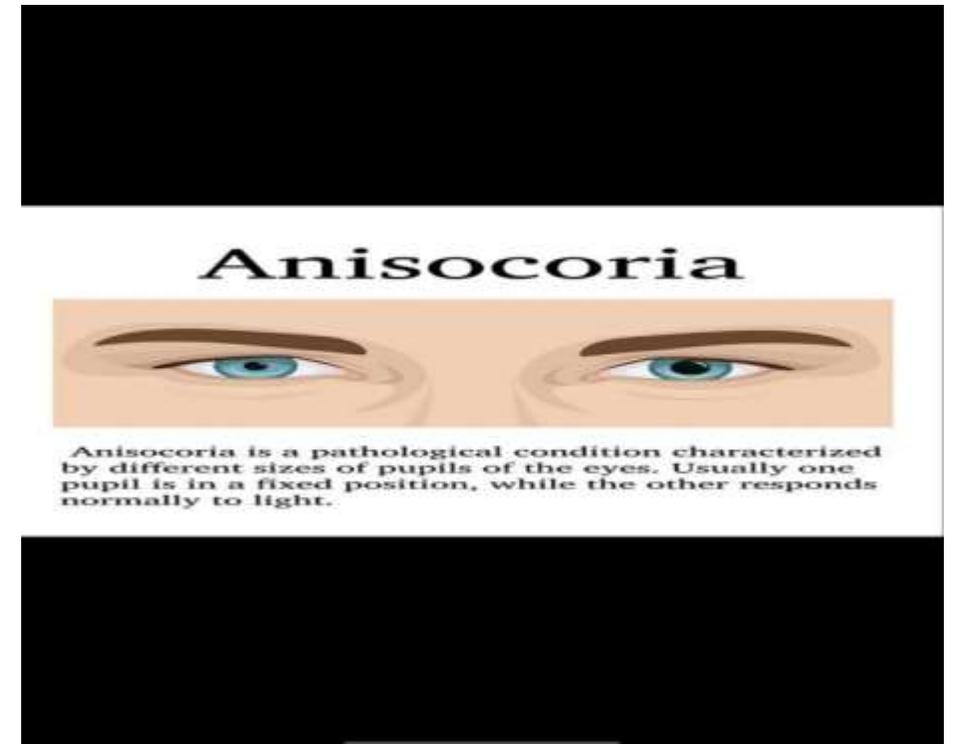
Uncal herniation

6. Compressed component is ?

Oculomotor nerve

7. Your next management?

Initial management to alleviate pressure can involve elevation of the head at a thirty-degree angle; hyperventilation; or hyperosmolar therapy, such as mannitol or hypertonic fluids (answer from google)



- 1-describe image(type, orientation, level, finding)
  - T2 MRI, sagittal, L4-L5, disc herniation
- 2-which dermatome will be affected if It was posterolateral?
  - L5
- 3-which joint will be affected?
  - Ankle joint (because it leads to foot drop)
- 4-if disc herniate centrally What is the syndrome?
  - Cauda equina syndrome
- 5-what is the management?
  - Management of cauda equina: urgent surgery (disc prolapse excision)



A picture of Vasogenic edema ↓

Type of edema?

Vasogenic

Mechanism of edema?

impaired capillary permeability,  
accumulation of fluid in extracellular

Diagnosis?

most likely space occupying lesion eg,  
tumor

Other differential diagnosis?

Infection/ abscess

Next image?

MRI T1 with contrast



## 1. Diagnosis ?

- Scaphocephaly Craniosynostosis

- 2. Ideal age of surgery ?

- 6 month-1 year

- 3. Main cause of surgery ?

- Cosmetic

- Complications of surgery: Bleeding Shock Stroke

- Name of surgery: Strip craniectomy



# neurosurgery

shahd Ayoub

- describe what you see in this image?
- there was x ray photo showing osteophytes and the vertebra was lucent
- what is the most common extradural spinal cord tumor?
- secondary to MTZ
- give example of intradural extramedullary?
- meningioma
- give example of intradural intramedullary?
- hemangioplastoma

- pt open his eye when he asked to, localizes to pain, inappropriate words, what is his GCS?

- 11

- what is the severity?

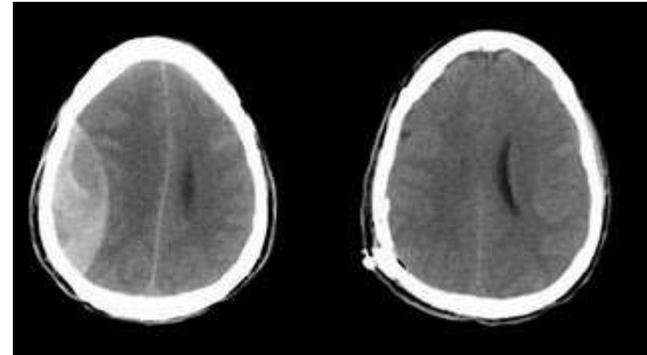
- moderate

- give 2 findings?

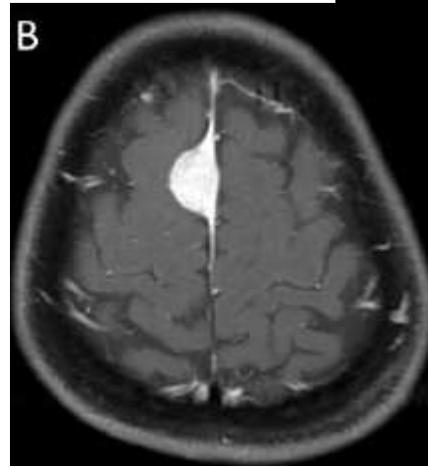
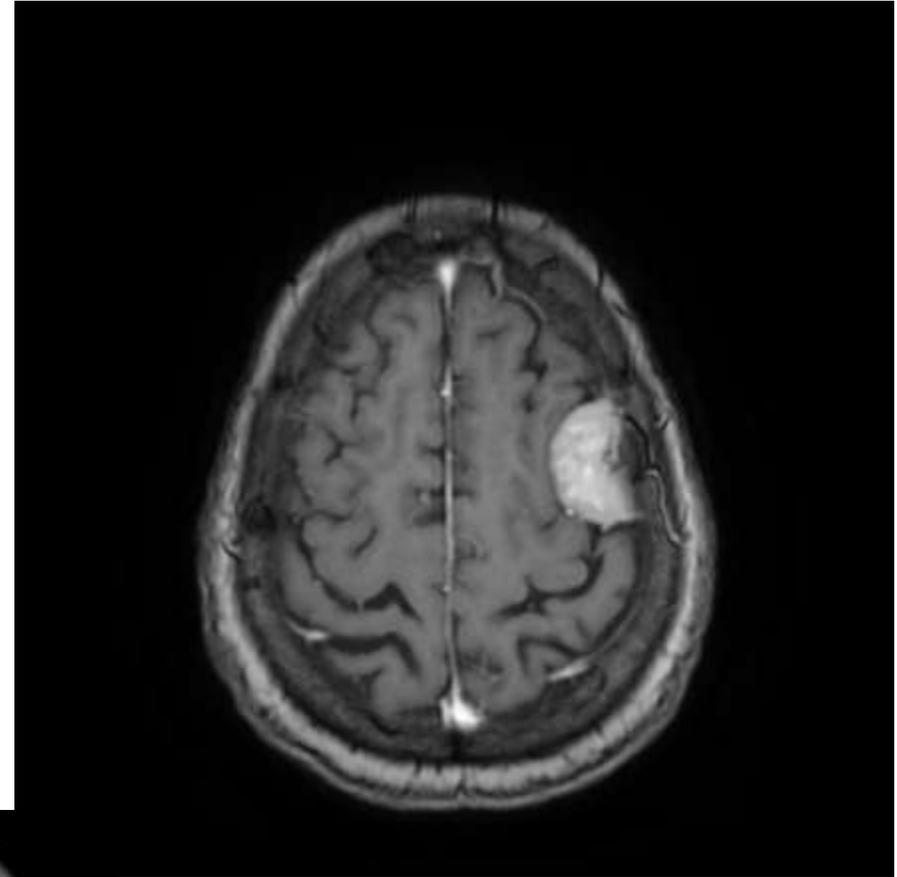
lens shape hyperdensity in the right frontoparietal area, midline shift

- what is the management?

- craniotomy and evacuation



- describe what you see (image type, view, enhancement, lesion site, other finding)?
- this is mri , T1 w/contrast, axial view, left frontal mass, other finding: tail attached to dura
- what is the most likely diagnosis?
- meningeoma



صورة الامتحان كان الموقع  
around falx cerebri  
وكان في  
tail

- pt comes after RTA ,bradycardia + hypotension, can't extend his elbow , can't feel his leg with minimal leg movement MRC scale (1/5)
- what is the cause of hypotension and bradycardia (name the condition name)?

neurogenic shock

- what is the type of the fracture?

burst fracture

- according to dennis score is it stable or unstable?

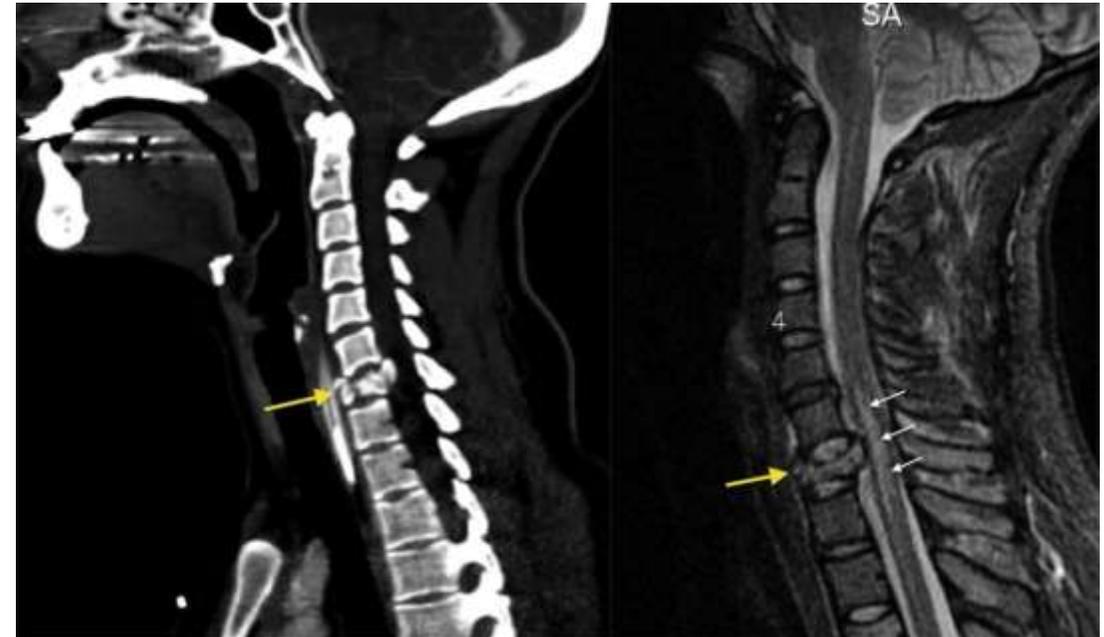
unstable

what is the level?

C7

what is the ASIA grade?

ASIA grade c



صورة

dermatome

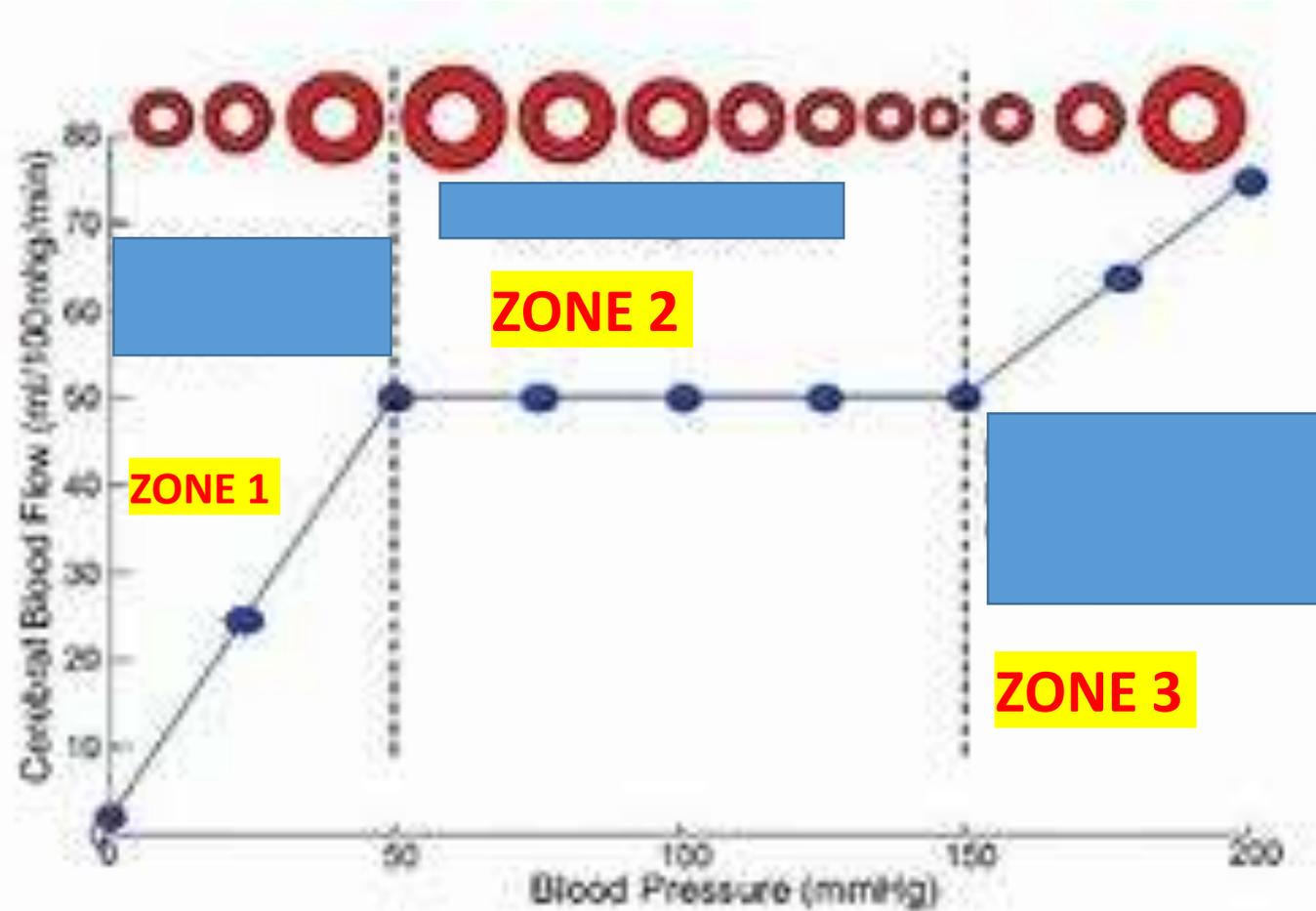
بتبيين انو ما في احساس على مستوى

c7

وتحت

(c7 is responsible for elbow  
extention)

- what is the name of each zone?
- zone 1: ischemia
- zone 2: autoregulation
- zone 3: hyperemia
- what controls the cerebral blood flow CBF?
- cerebral vascular resistance and cerebral perfusion pressure  
(CPP)/(CVR)
- give example of condition decrease the range of zone 2?
- Traumatic brain injury



Neurosurgery

1- diagnosis

- Subarachnoid hemorrhage

2- most common cause of this case

- Ruptured berry aneurysm

3- WFNS score

- depending on case, calculate GCS and look for neurological deficit

4- best way for diagnosis

- Angiogram DSA

5- management

ICU admission, arterial and venous catheters, intubation, if necessary, elevate head of bed 30, monitor vitals and neuro signs every hour, monitor input and output, IV fluids,

For the headache; codeine phosphate 60 mg q3 +

dexamethasone, Control bp : if high rebleed if low strokes



- **1-describe image(type, orientation, level, finding)**
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  - **Management of cauda equina: urgent surgery (disc prolapse excision)**
- **6- test you will do?**
  - **Straight leg raise test**



اسم كل مرحلة فيهم ؟  
 كان المريض عنده hypotension شو ال treatment اله؟  
 اي اشئ من المكتوب بالاسلايد ما عدا

Head elevation  
 Mannitol  
 Sedation

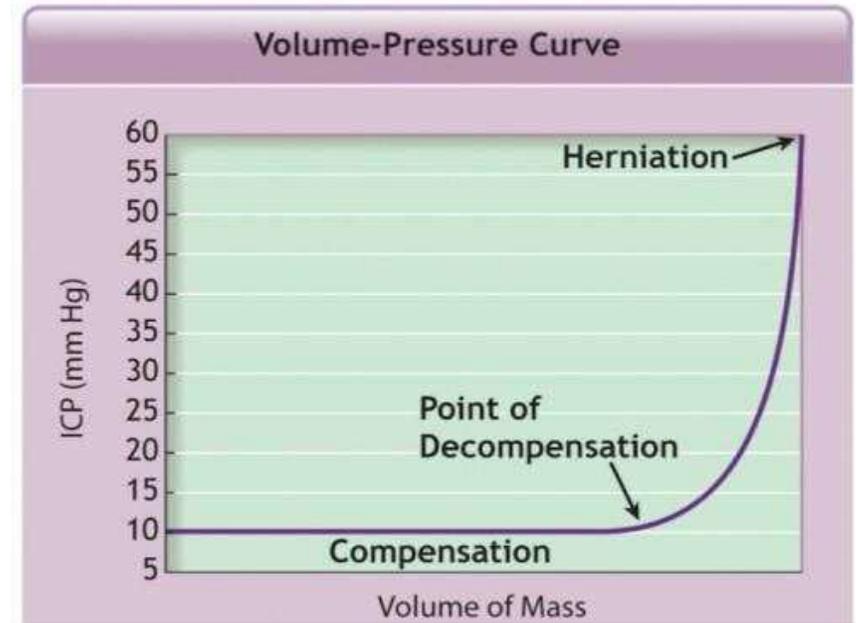
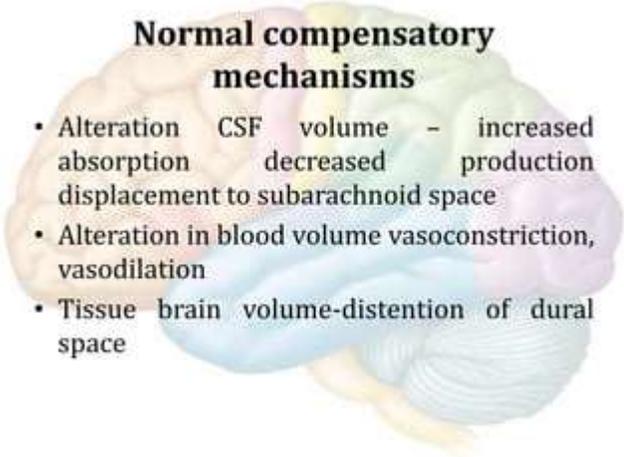
حكايم الدكتور بالريكورد  
 كأنه كمان كان طالب mechanism of compensation

← Type of herniation?  
 uncal herniation  
 Name of sign ?

anisocoria  
 Nerve that affected?  
 Occulomotor

### Normal compensatory mechanisms

- Alteration CSF volume - increased absorption decreased production displacement to subarachnoid space
- Alteration in blood volume vasoconstriction, vasodilation
- Tissue brain volume-distention of dural space



### Anisocoria



Anisocoria is a pathological condition characterized by different sizes of pupils of the eyes. Usually one pupil is in a fixed position, while the other responds normally to light.

1- Glasgow coma scale(open eye with pain, incomprehensive voice, Flexion with pain)

7/15

2-Management in ER

intubation, hemostasis, manage increased ICP (elevate head, hyperventilate)

3-Description

hyperdense crescent shaped lesion with midline shift

4-source of bleeding

bridging veins



A picture of Vasogenic edema ↓

Type of edema?

**Vasogenic**

Mechanism of edema?

**impaired capillary permeability,  
accumulation of fluid in extracellular**

Diagnosis?

**most likely space occupying lesion eg,  
tumor**

Other differential diagnosis?

**Infection/ abscess**

Next image?

**MRI T1 with contrast**



# Neurosurgery

10/5/2023

الامتحان عبارہ عن case عليها اسئلہ

5 question in 35 minute

مهم التركيز مع الدكتور فيه اسئلہ من الريكورد

Rahma saraireh

## بالمختصر مريض عنده اسوء صدادع في حياته ومش متعرض لحادث

diagnosis : **SAH**

most common cause of this case : **spontaneous > berry aneurysms**

never before day 3 : **vasospasm**

role of CCB: **neuroprotective + for vasospasm ☹️**

WFNS score : **3**

management:

**ICU admission, arterial and venous catheters, intubation, if necessary, elevate head of bed 30, monitor vitals and neuro signs every hour, monitor input and output, IV fluids,**

**For the headache; codeine phosphate 60 mg q3 + dexamethasone, Control bp : if high rebleed if low strokes,**



WFNS Grade	Glasgow Coma Scale Score	Motor Deficit
I	15	Absent
II	14-13	Absent
III	14-13	Present
IV	12-7	Present or absent
V	6-3	Present or absent

glasgow coma scale( no response in eye with pain, incomprehensible voice, extension with pain)

GCS : 5

two findings : **midline shifting and crescent hyperdense lesion**

Management in ER : **intubation**

ddx : **epidural , SAH**

definitive ttt : **craniotomy and duraraphy**

Uncal herniation we exam :

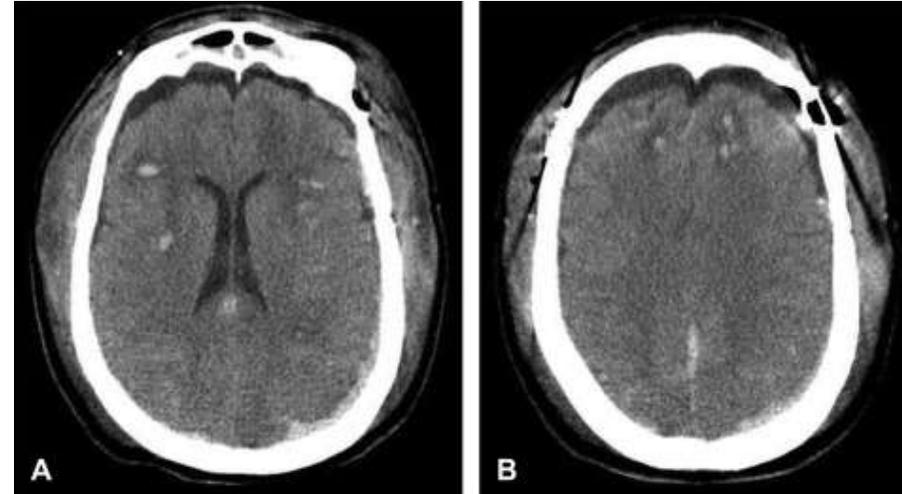
**anisocoria ,,, oculomotor nerve**



مريض عامل حادث عنده pneumothorax , abdominal injury على الطوارئ مغيب عنده  
hypotension ,tachycardia, decrease in o2 sat  
بعد ما دخل المستشفى تحسن شوي بعدها غيب وما صحي بما معناه ( vegetative stat )

discripe what you see(image type,veiw,

type of edema : **cytotoxic**  
Why edema occur : **na-k defect**  
in case  
السبب  
**diffuse axonal injury**



no reflex . Intubation . المريض بعد فتره صار

السؤال فيه اعراض ال

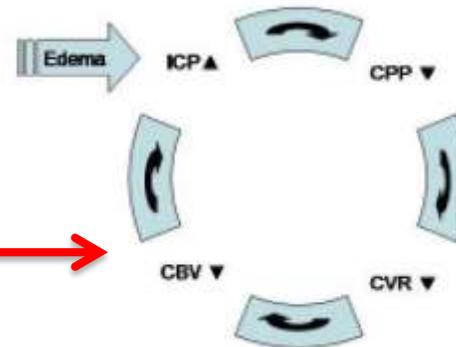
brain death

والضحه

Gcs :3

What occur : brain death

vicious cycle : —————→



طفله 5 سنوات عندها projectile vomiting

## Brain tumor

describe what you see

image type, view, **Mri t1 with contrast**,  
**axial and sagittal**

enhancement, **ring Enhancement**

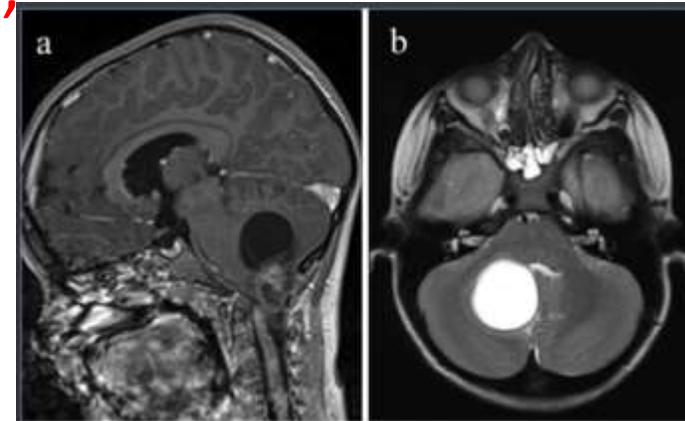
lesion site, **Infratentorial**

Diagnoses **pinealoma**

With and what type : **hydrocephalus**,  
**obstructive**

Ttt: **surgery**

If initial ttt contraindication بماا معناه لانه  
complication : IDK maybe **EVD**



مش نفس الصورة ^-^

مريض عنده

Weakness may also be felt in the triceps. feeling a lack of sensation in middle finger. movement right arm Against gravity not against resistance

describe (image type, view) **mri .sagittal**

DIAGNOSIS : **disk**

at level : **c6-c7**

motor for right arm : **3**

Ttt: **conservative ,surgery**

جدول

	<b>Radiculopathy</b>	<b>Myelopathy</b>
Sign		
Symptom		



**Cervical radiculopathy**

*Lower motor neuron signs*

- Muscle weakness
- Decreased muscle tone
- Muscle atrophy
- Loss of a deep tendon reflex
- Fasciculations

**Cervical myelopathy**

*Upper motor neuron signs*

- Late loss of strength
- Hypertonia
- Babinski sign
- Hyperreflexia
- Loss of balance
- Loss of proprioception
- Sensory levels in trunk



# Neurosurgery Archive

th group4

Done by omyma Anwar albadaineh



**37**years old male came to emergency room after RtA his vital sign evident that he have hypotension, bradycardia, he can't extend his elbow, can't feel his leg with minimal leg movements

\*\*mention the name of condition that responsible for bradycardia and hypotension?

neurogenic shock

\*\*ASIA grade? Grade c

\*\*what's type of fx?

Burst fracture

\*\*\*is this fx considered stable or unstable?

Unstable

\*\*what's the level of injury?

According to dermatomal level it's c 7



47years old female came to ER after sever sudden headache She describe her symptom as a worse headache ever

\*\*\*\*your differential diagnosis

- 1hydrocephalus associated with increase intracranial pressure
- 2truma

\*\*\*\*what's the role of calcium channel blockers , in treatment of this phenomenon

neuroprotective + for vasospasm

\*\*\*\*Most comments cause of this

Rupture berry aneurysm

\*\*\*\*two modalities for treatment

Coiling

Clipping

\*\*\*\*dx subarachnoid hemorrhage

\*\*WFNS SCORE : 3

Pt , came with incomprehensible sound no responded in eye with pain and extension his arm with pain after sever trauma

\*\*\*GCS of pt is

5:

\*\*\*type of image

CT scan

\*\*\*\*the orientation of image ?

Axial view

\*\*\*give two differential diagnosis

1 tumor

2 subdural hemorrhage

\*\*\*what's your findings (2)

1 Midline shift

2 Crescent hyperdensity

\*\*\*\*your management

ABCD ,INTUBATION , GCS ,stabilization (1)

Pain management (2)

Definitive treatment ; craniotomy, durotomy , and evacuation



86years old male came to your clinic after he diagnosed of newly onset seizure and he complain of sever recurrent vomiting:

\*\*\*type of edema

Vasogenic edema

\*\*how do you treat this type of edema

Dexamethazone

\*\*\*your definitive diagnosis

Brain tumor

\*\*your differential diagnosis

Infectious /abscess

\*\*\*type of modality

CT

\*\*mechanism of edema

Accumulation of fluid intra and extra cellular due to ruptured blood brain barrier, so fluid Accumulated around the mass or legion as finger like projections .



Neurosurgery

30/11/2023

malak hamasha

1. Hx : 31 y man , Hb=21

1. Describe where is the lesion ?

Left cerebellum (infratentorium )

2. What the enhanced lesion at edge ?

I think is mural nodule

3. Most likely diagnosis ?(hint: look at the age )

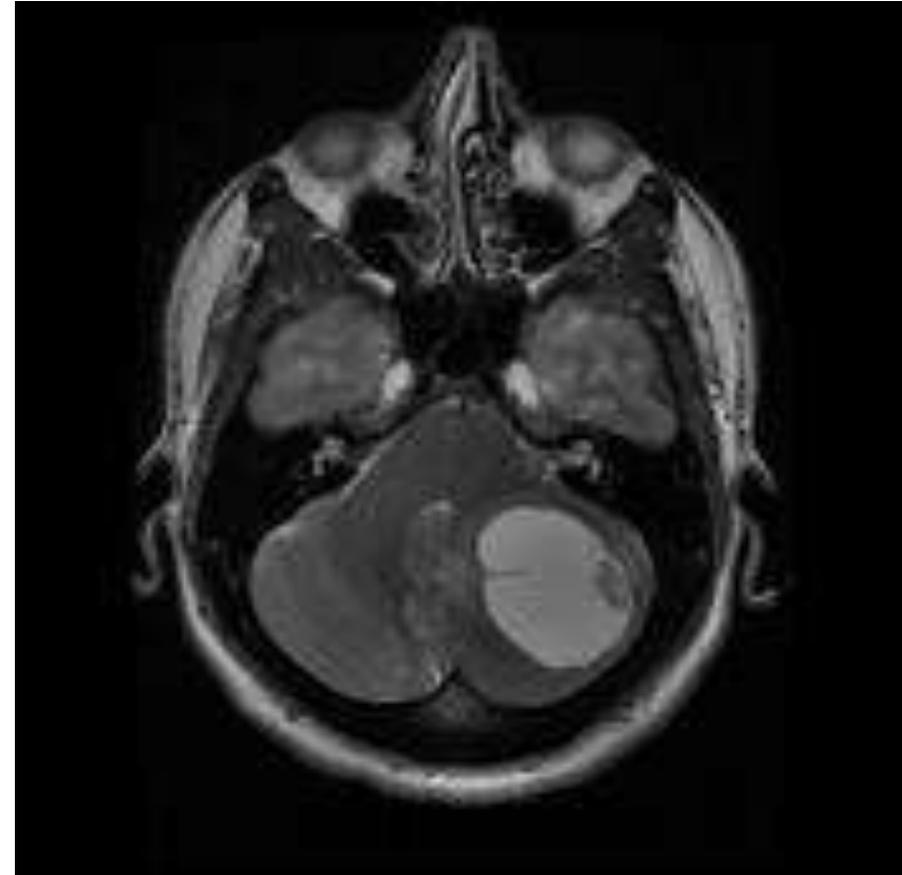
Hemangioblastoma

4. Most associated syndrome with this case ?

von Hippel-Lindau syndrome

5. How do you explain the polycythemia ?

Erythropoietin production by tumor cells



# 2.

1. What A is indicate ?

compensation

2. Describe the mechanism of A ?

Monroe Kellie hypothesis

اشرح حولهم كلشي

3. B ?

Point of decompensation

3. C ?

Herniation

4. What is this sign ?

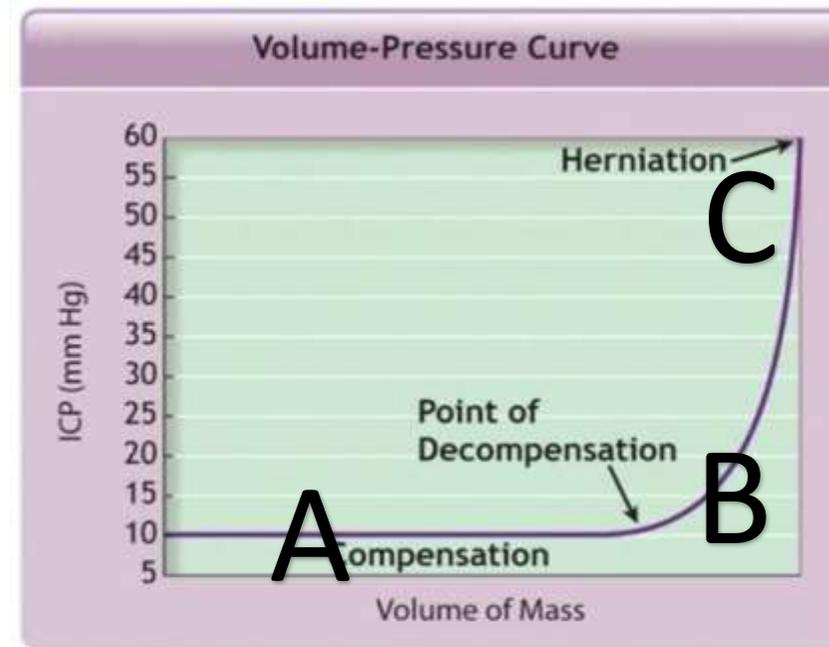
Anisocoria

5. Type of herniation ?

Uncal herniation

6. Compressed component is ?

Oculomotor nerve



## Anisocoria



Anisocoria is a pathological condition characterized by different sizes of pupils of the eyes. Usually one pupil is in a fixed position, while the other responds normally to light.

# 3.

1. Describe the lesion ?

2. Where is this part ?

Pedicle

3. what is the most common extradural spinal cord tumor?

secondary to MTZ

4. give example of intradural extramedullary?

Meningeoma

5. give example of intradural intramedullary?

hemangioblastoma

صورة ما بعرف من  
وين بالزبط  
بس كانت مبيينة انها  
Degenrative

4. Hx: withdraw from pain , no eye response, no verbal response , BP =150/90 , HR= 44 , irregular breathing

1. Describe 2 change in this photo ?

Crescent hyper dense in right frontoparietal  
With midline shifting

2. What is the GCS ?

6

3. Initial management in the ER ?

Intubation and stabilization

4. Look at his vital sign , what is this triad ?

Cushing triad

5. Definitive management ?

Craniotomy, dural incision (durotomy)  
evacuation, hemostasis



# 5.

1. Diagnosis ?

Trigonocephaly

2. Ideal age of surgery ?

Less 1 year

اتوقع المفروض نكتب

6 months-1 year

3. Main cause of surgery ?

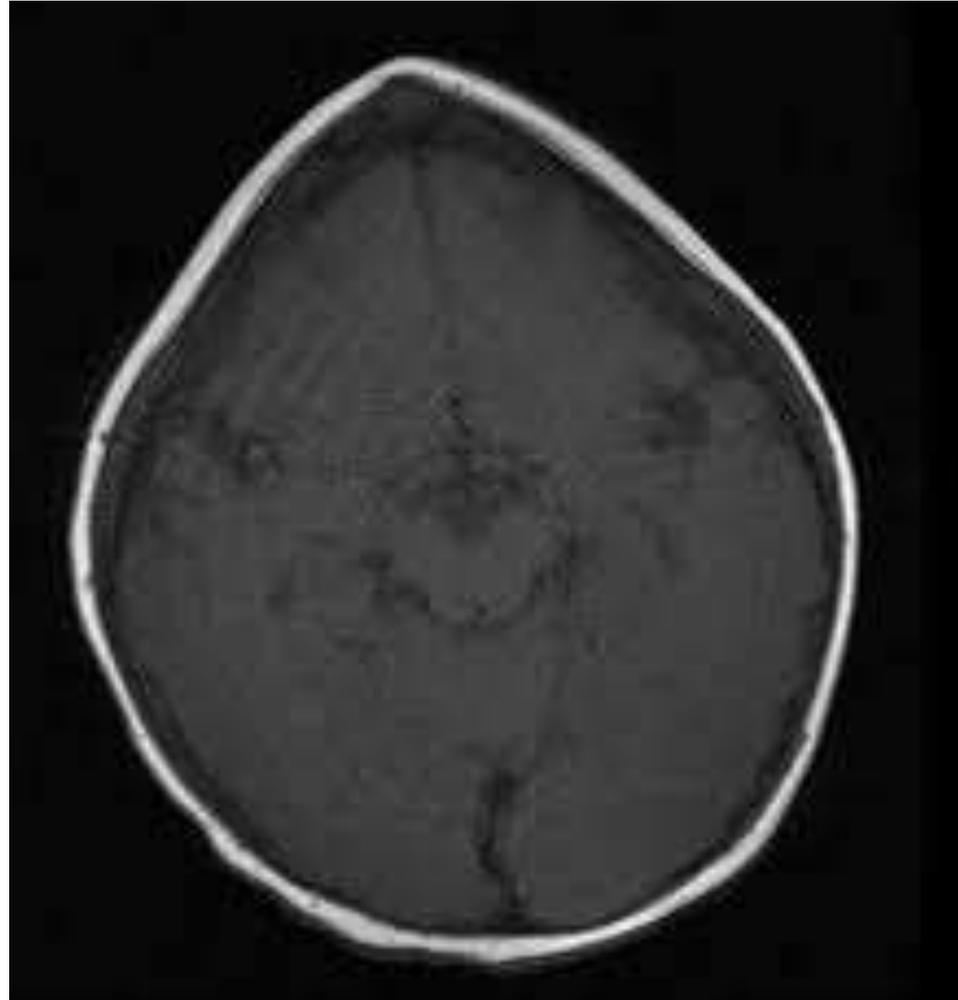
Cosmetic

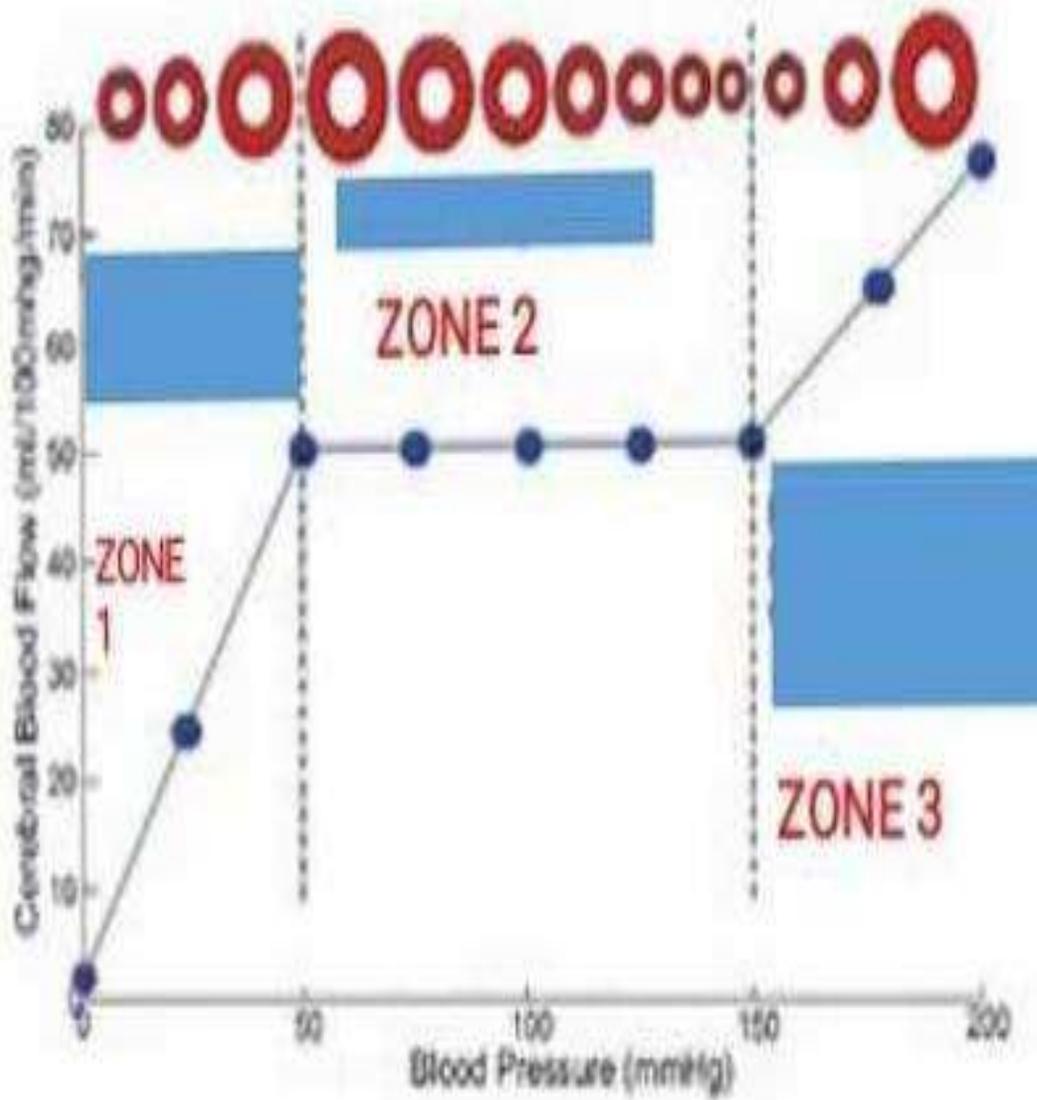
4. What happen if do surgery earlier than ideal age ? List 2 point

Higher risk for shock, stroke, MI  
higher mortality rate

5. The name of surgery ?

Simple strip craniectomy





According to this diagram

Name of the 3 zones

- 1 ischemia
- 2 auto regulation
- 3 hyperemia

Explain the mechanism of auto regulation

اكتبوا العلاقة بين  
 cbf  
 وال resistance  
 وال BP  
 موجود كامل بالأيدي 4

Give name of condition associated with decrease zone of auto regulation

Head injury

1) Female came with the words headache in her life , she's confused obeys commands and opens eyes spontaneously , she had left hemiparesis

What is the diagnosis

**SAH**

What's the pathophysiology of the most common cause

**Spontaneous rupture of berry aneurysm**

What is WFNS score

**3**

How to treat ( 2 ways ) :

**ICU admission, arterial and venous catheters, intubation, if necessary, elevate head of bed 30, monitor vitals and neuro signs every hour, monitor input and output, IV fluids, For the headache; codeine phosphate 60 mg q3 + dexamethasone Control bp : if high rebleed if low strokes, Clipping and coiling**

What's the role of CCB: **Neuroprotective, prevent vasoconstriction**

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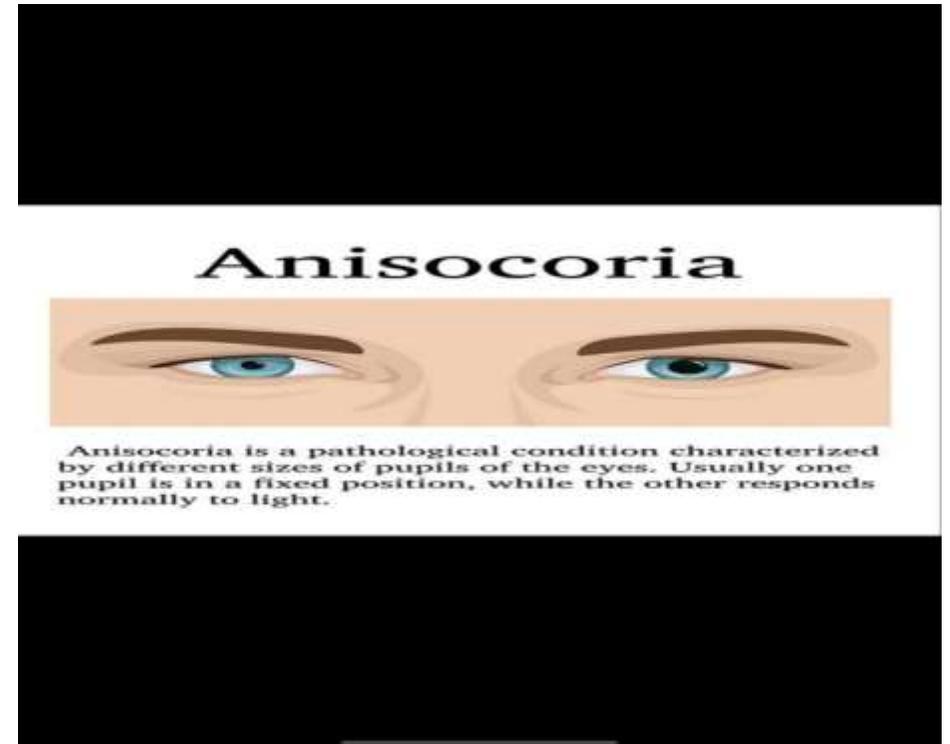
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Next image?

MRI T1 with contrast



Diagnosis ? .1

Scaphocephaly Craniosynostosis •

2. Ideal age of surgery ? •

6 months- 1 year •

3. Main cause of surgery ? •

Cosmetic •

Complications of surgery: Bleeding •

Shock Stroke

Name of surgery Strip craniectomy •

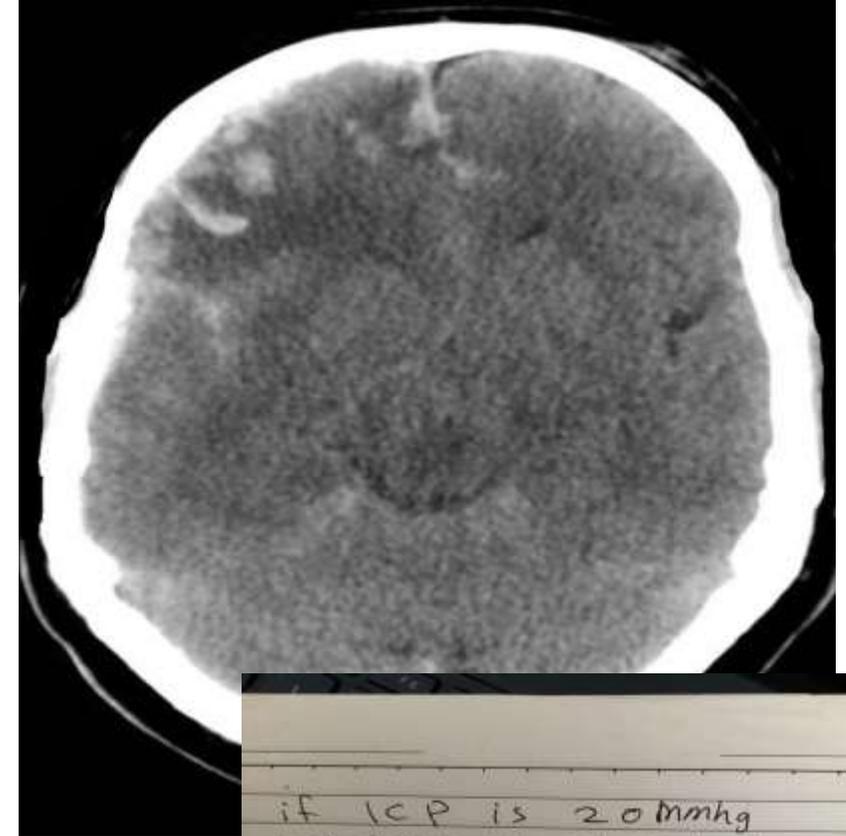


# Neurosurgery

Group 8

Q1) A 28 yo presented after an RTA He was unconscious, on painful stimuli, he opens his eyes, produces sounds and extends his right arm only. His blood pressure is 180/110 and heart rate is 54, his ct is shown in the picture (6 pictures showing a contusion on the right temporal lobe, with edema/effacement of sulci, and midline shift)

1. How do you explain his vital signs, name the condition? - **Cushing triad due to increased intracranial pressure**
2. What is his glsgow coma score? - **6**
3. Mention 2 findings from the image - **midline shift - effacement of sulci - edema**
4. Mention a medication to give him for the increased **intracranial pressure - mannitol or hypertonic saline**
5. How can you know if his intracranial pressure dropped or increased? - **Intraparenchymal monitor**
6. If his intracranial pressure is 20mmHg, To prevent edema or ischemia, what is the range of mean blood pressure? - **70-90**



if ICP is 20 mmHg  
head trauma pt CPP must be  
50 - 70 mmHg

So, let's calculate lower range  
and higher range of MAP based  
on the desired CPP

$$CPP = MAP - ICP$$
$$50 = MAP - 20$$
$$MAP = 70 \text{ mmHg (lower range)}$$
$$CPP = MAP - ICP$$
$$70 = MAP - 20$$
$$MAP = 90 \text{ mmHg (higher range)}$$

So MAP has to be 70-90  
to achieve the desired CPP &  
prevent edema & ischemia.

Q2) same patient •

1. If he developed anisocoria, the fixed dilated pupil will be on the right or left eye? - **right** •

2. If all treatments failed what is the next step of management? - •  
**decompressive craniectomy**

The patient was transferred to another bed and was carried by the nurses, he then developed hypotension 80/50 and bradycardia and the nurse said he is breathing from his abdomen. He responded to pain stimuli on the supraorbital notch but no response to pain on the sternum. •

3. What is the explanation to what happened to him - **spinal cord injury** •

4. Was it preventable, how? **Yes by using neck collar, and log-rolling to move him** •

5. What explains his hypotension, just mention the name? **Neurogenic shock** •

6. Approximately at what level did the injury happen? **Below c6** •

What is your Interpretation of the image?

Modality: **MRI**

Sequence: **T1 with contrast**

View: **axial**

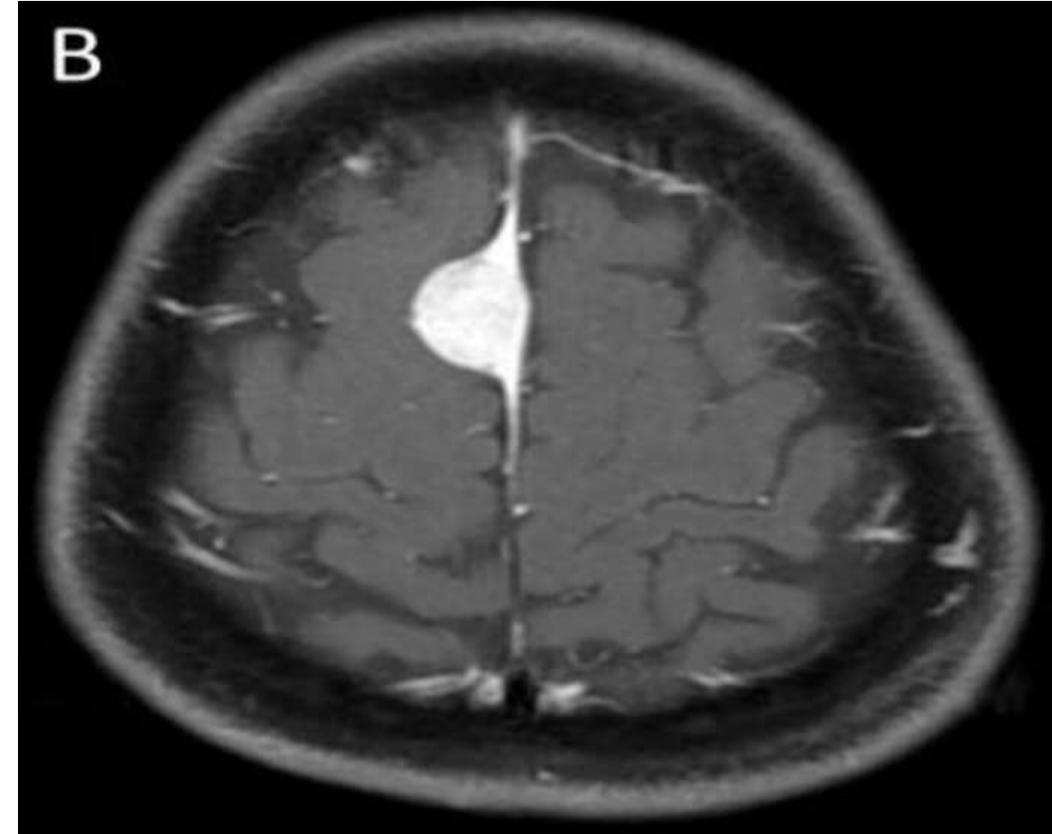
Finding: **tumor**

Anatomical site: **flax cerebri**

Enhancement pattern: **vivid/diffuse enhancement**

Associated finding: **dural tail**

2. Diagnosis? - **MENINGIOMA**



Question 4 : Newborn with breathing •  
problems and difficulty swallowing .

1. Diagnosis? - **Chiari 2 malformation** •
2. Associated anomalies? **Myelomeningocele** •
3. 3 Image findings ? •
  - **cerebellar tonsillar herniation** •
  - **Hydrocephalus ( dilated 3rd ventricle )** •
  - **Beaked tectum - enlarged mass between** •  
**thalami**
4. Management? •
  - **VP shunt/ Posterior fossa decompression** •
5. Incidence of hydrocephalus in this •  
condition? - **98%**



Q5) a 42 year old female presented with the worst headache of her life, she is confused, obeys command and opens eyes spontaneously.

1. What is the imaging modality and the finding

- digital subtraction angiography - berry aneurysm

2. Name 3 risk factors for this condition?

- HTN, smoking, drug abuse, oral contraceptive, alcohol, diurnal variation in blood pressure

3. What 2 factors would favor surgical intervention over other treatment modalities?

- younger, MCA bifurcation aneurysm, giant aneurysm, mass effect, small aneurysm, wide neck aneurysm

4. What is her WFNS score and what is the score used for? - 2, prediction of prognosis

5. What is one electrolyte disturbance that may happen in this case, and mention two differential diagnoses for the electrolyte imbalance

- hyponatremia, ddx: SIADH, CSWS

