Pituitary Apoplexy

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No Financial Interest

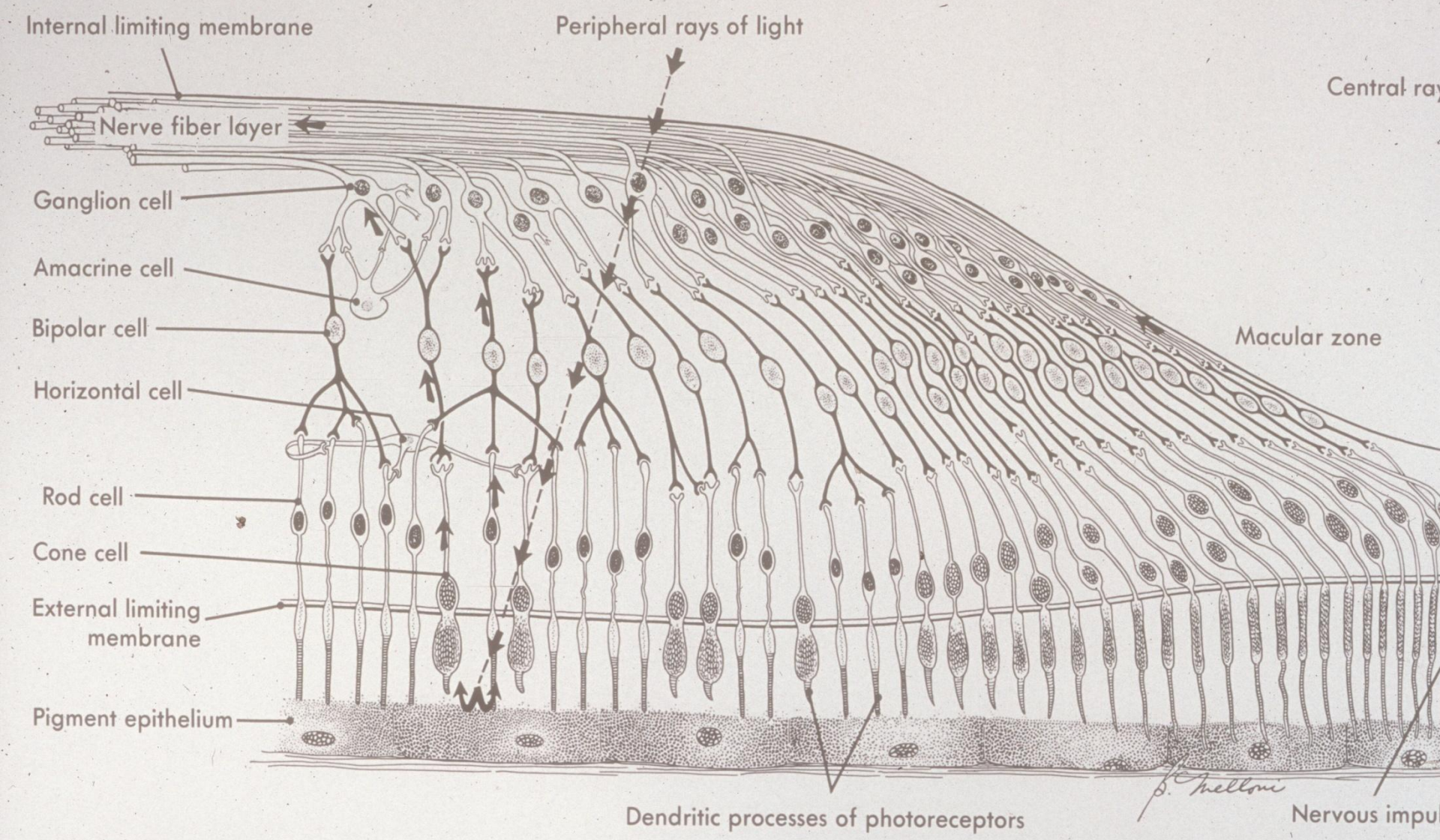
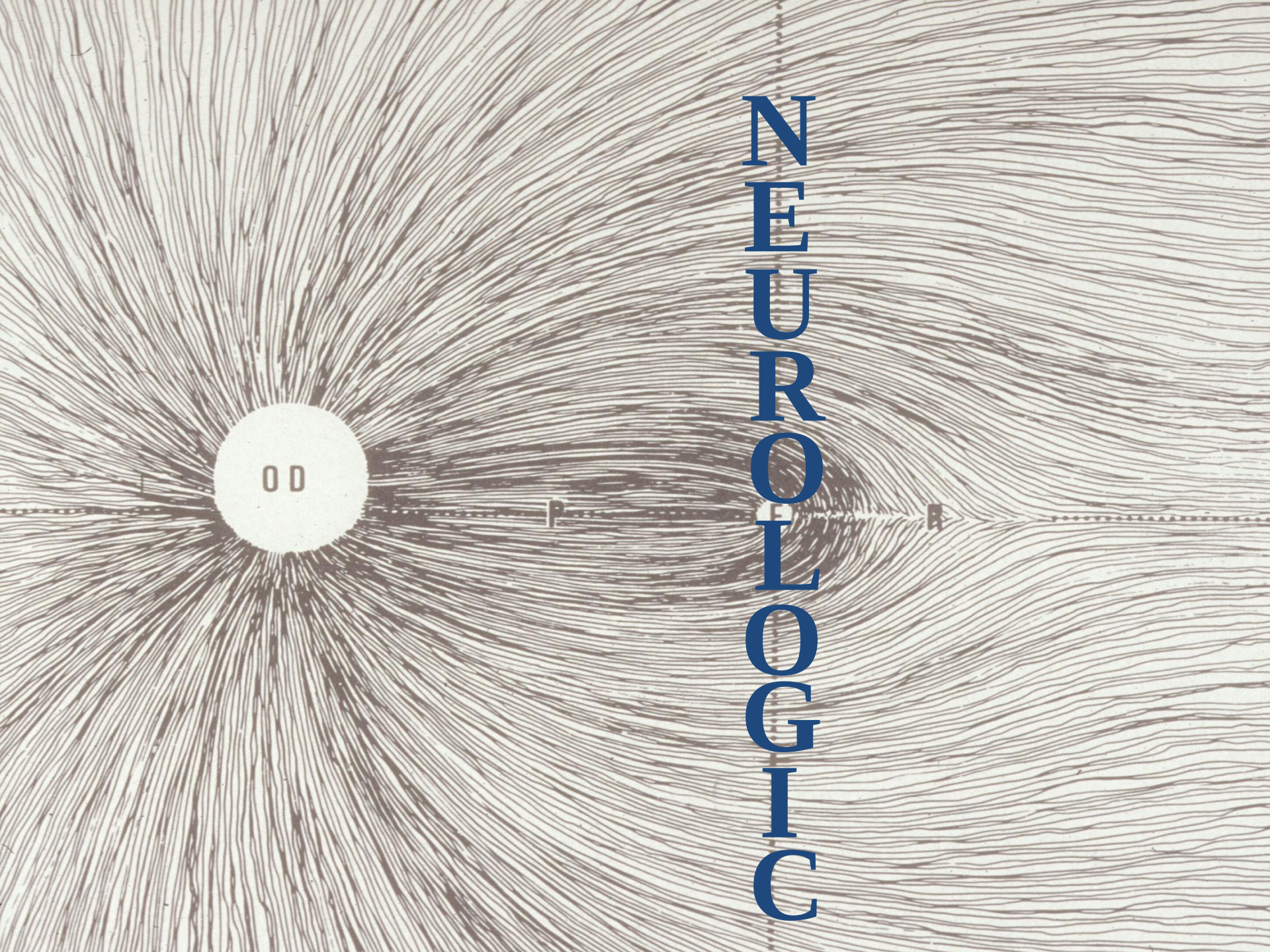
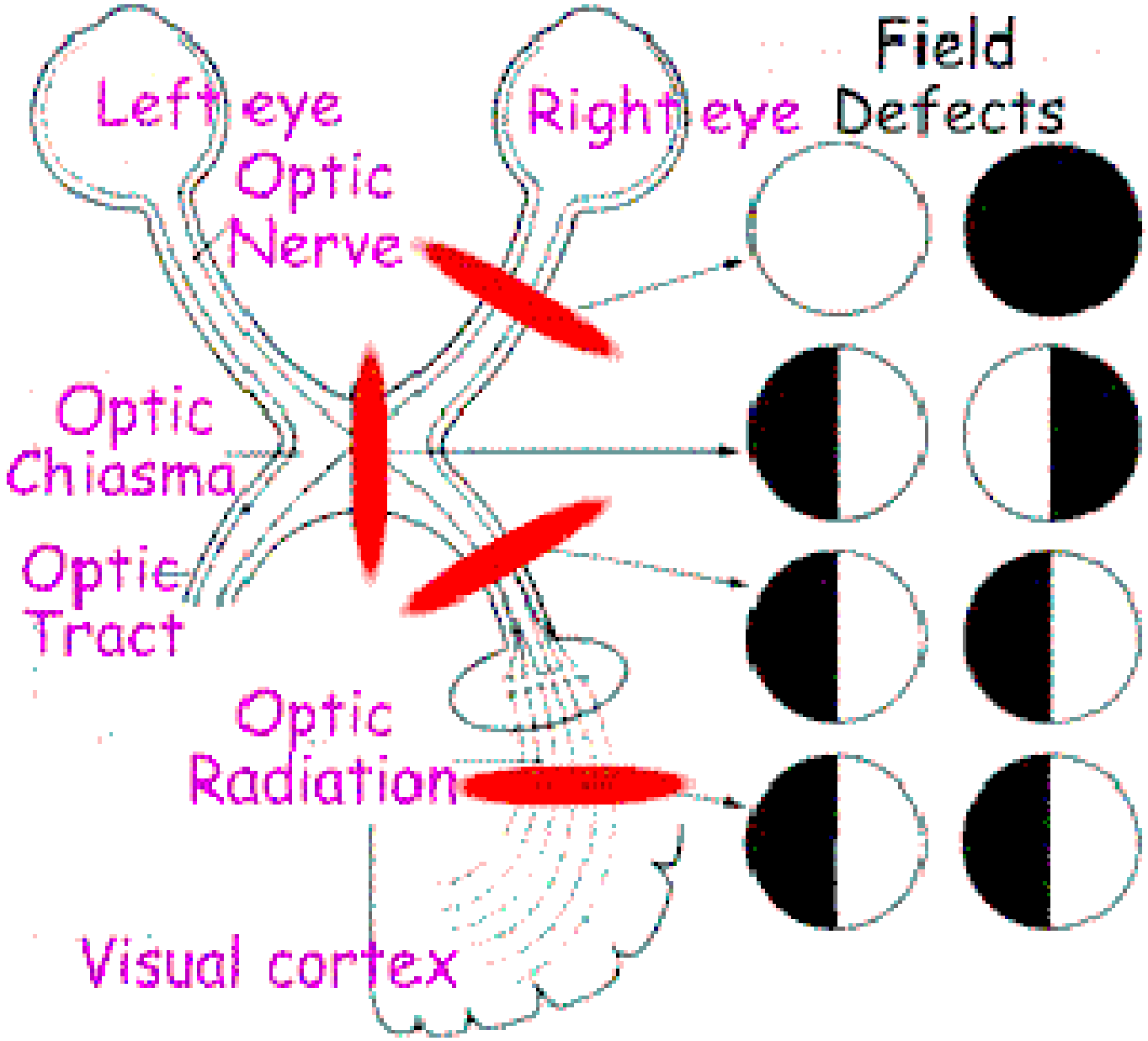
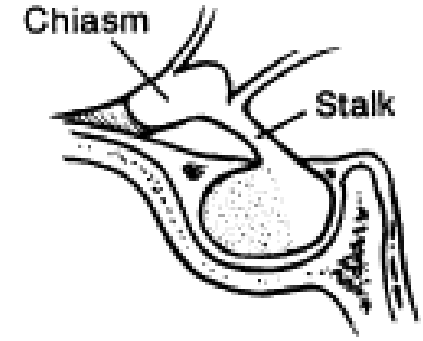


FIGURE 5-2 Microscopic anatomy of retina. *(From Melloni BJ: What's new, Abbott Laboratories, Abbott Park, Ill.)*

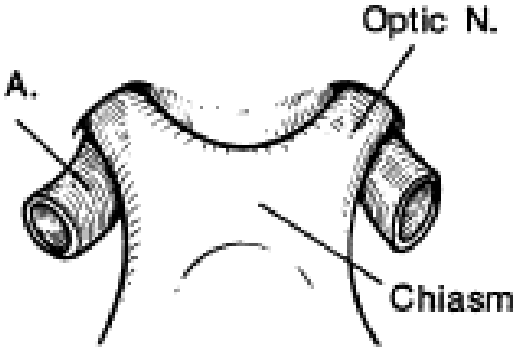


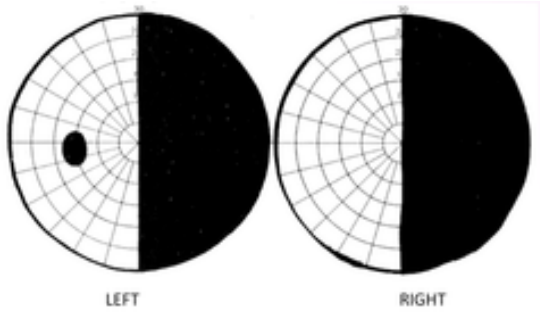
NEUROLOGIC

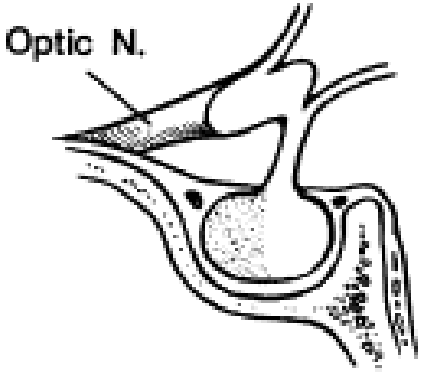

Left eye
Right eye
Field Defects
Optic Nerve
Optic Chiasma
Optic Tract
Optic Radiation
Visual cortex



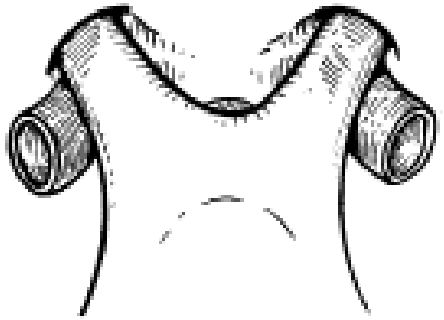
PREFIXED

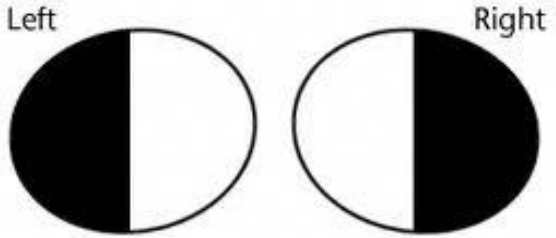


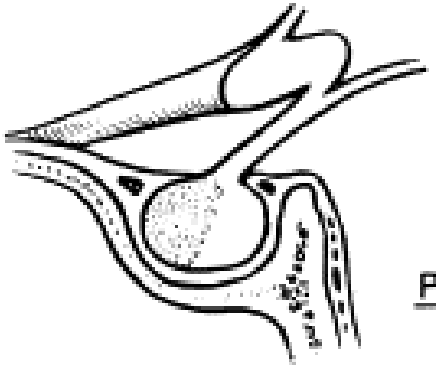




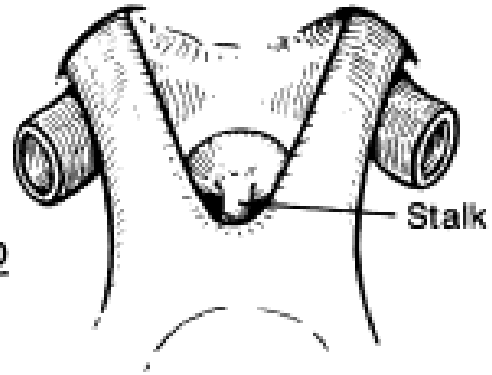
NORMAL

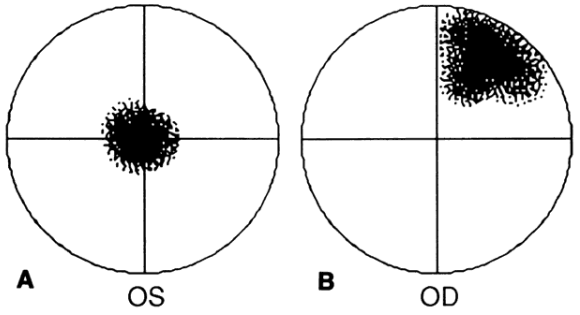


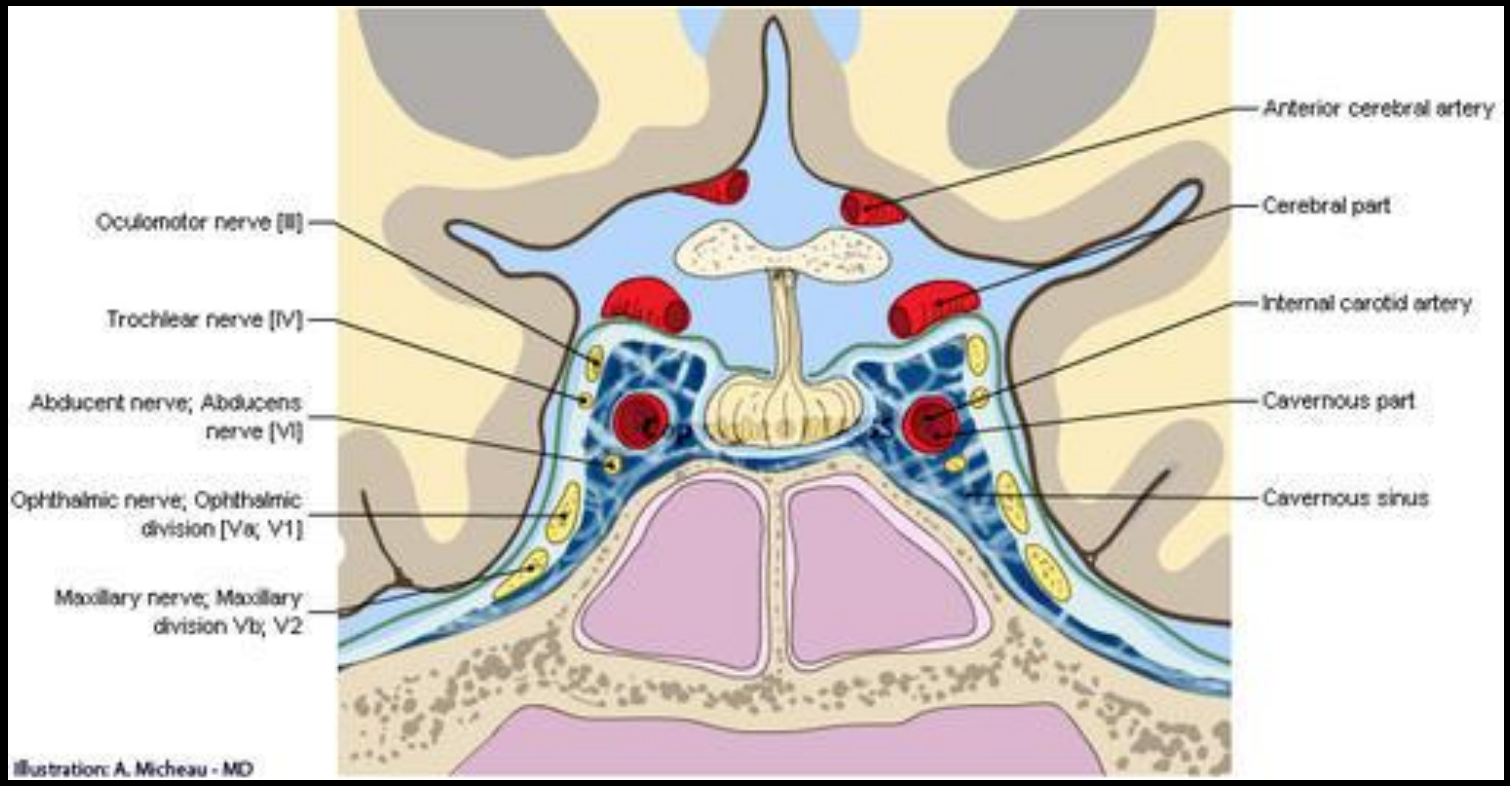


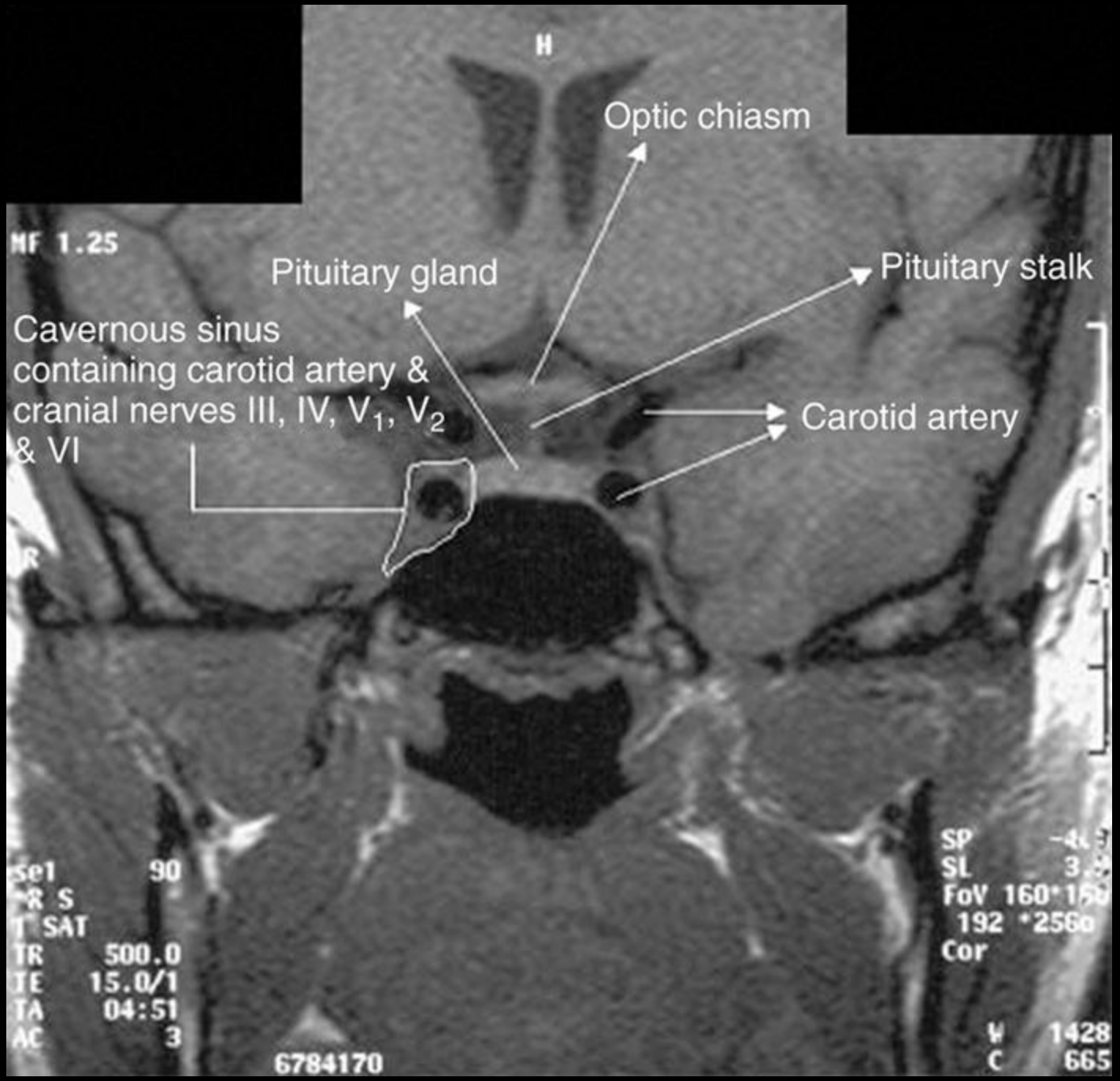


POSTFIXED



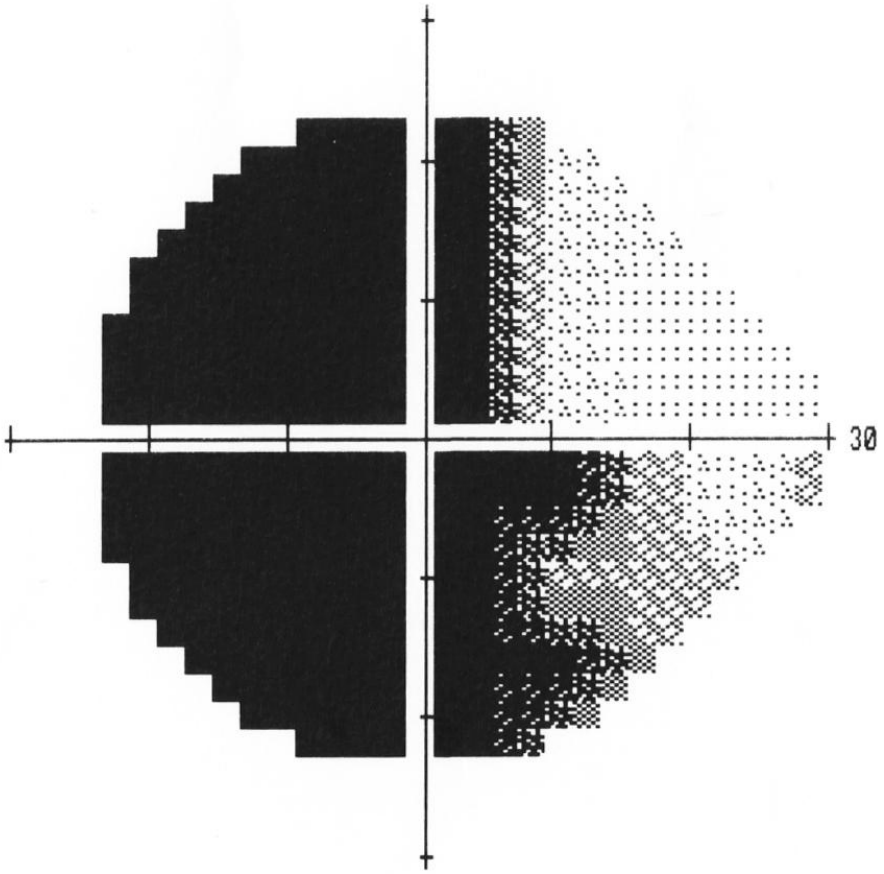


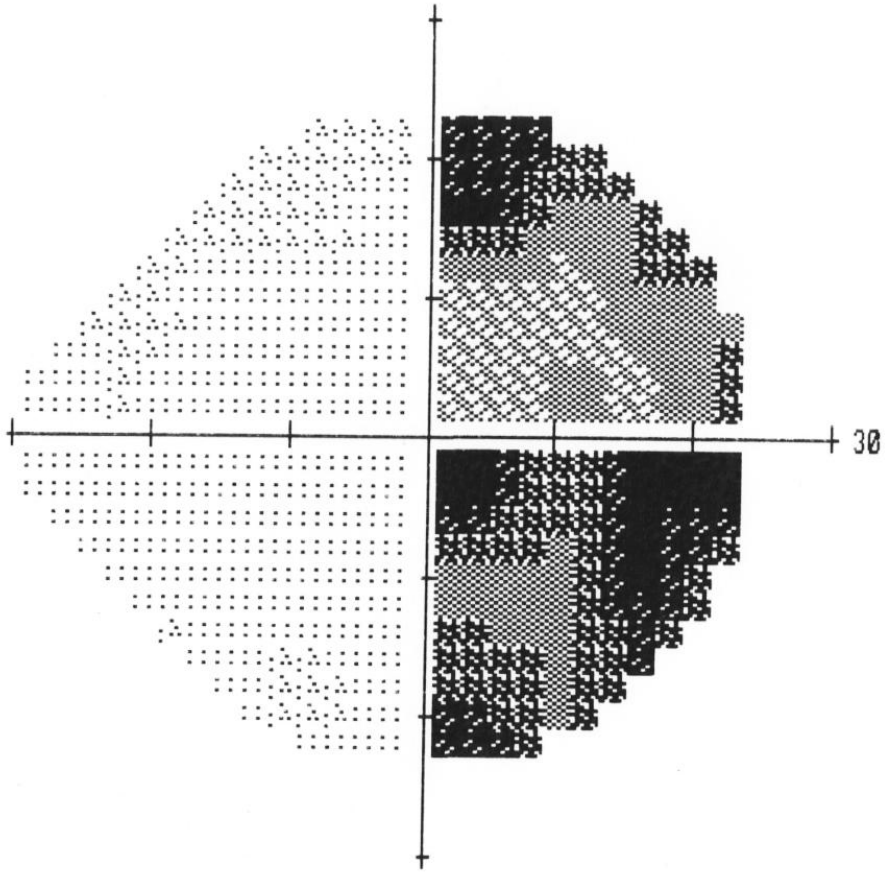

Anterior cerebral artery
Cerebral part
Oculomotor nerve [III]
Internal carotid artery
Trochlear nerve [IV]
Cavernous part
Abducent nerve; Abducens nerve [VI]
Cavernous sinus
Ophthalmic nerve; Ophthalmic division [Va; V1]
Maxillary nerve; Maxillary division Vb; V2
Illustration: A. Micheau - MD


H
Optic chiasm
MF 1.25
Pituitary gland
Pituitary stalk
Cavernous sinus
containing carotid artery &
cranial nerves III, IV, V1, V2
& VI
Carotid artery
R
se1 90
R S
T SAT
TR 500.0
TE 15.0/1
TA 04:51
AC 3
SP
SL
FoV 160*160
192 *256
Cor
W 1428
C 665
6784170

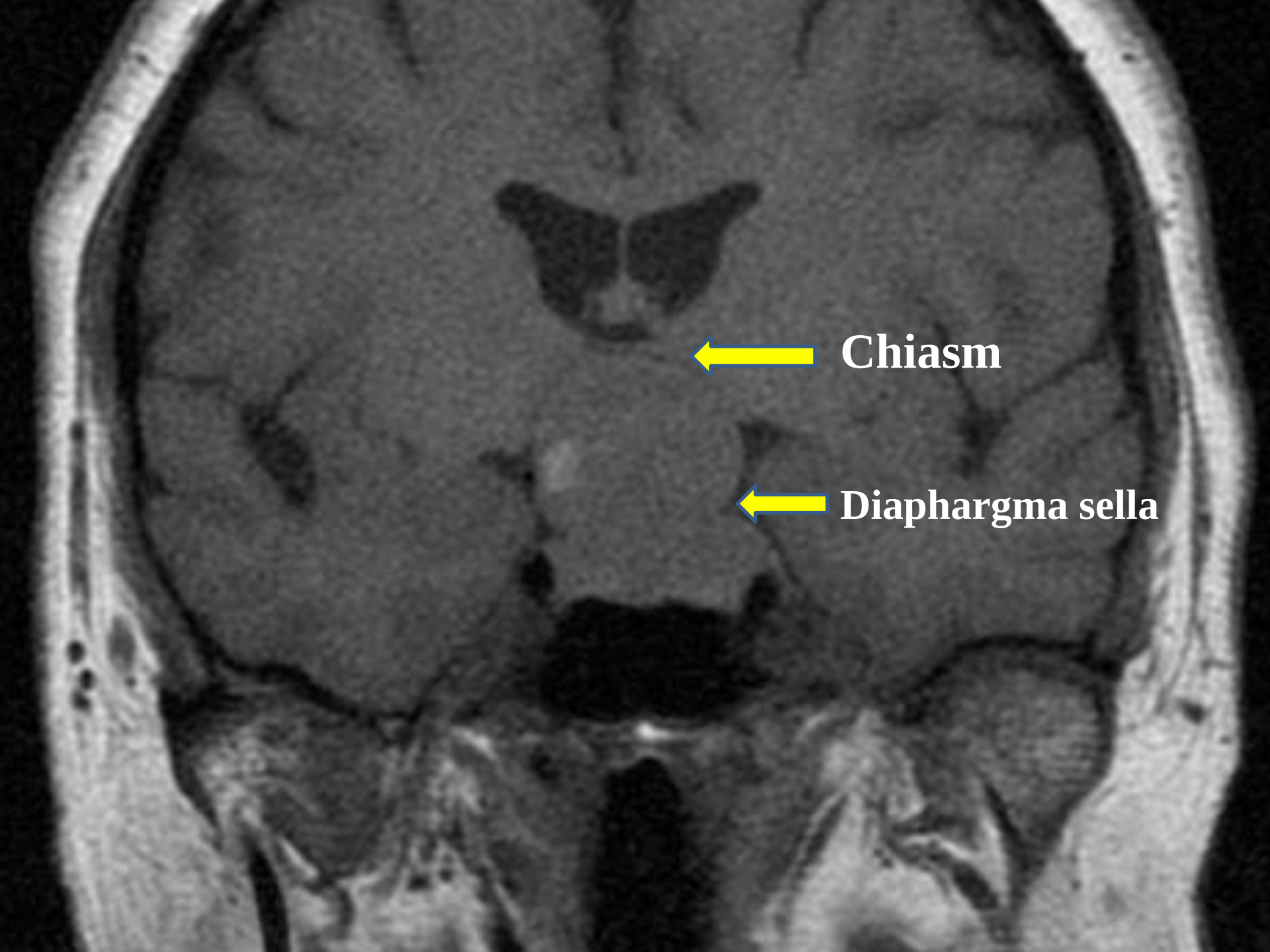
Pituitary Tumor (non-apoplexy)

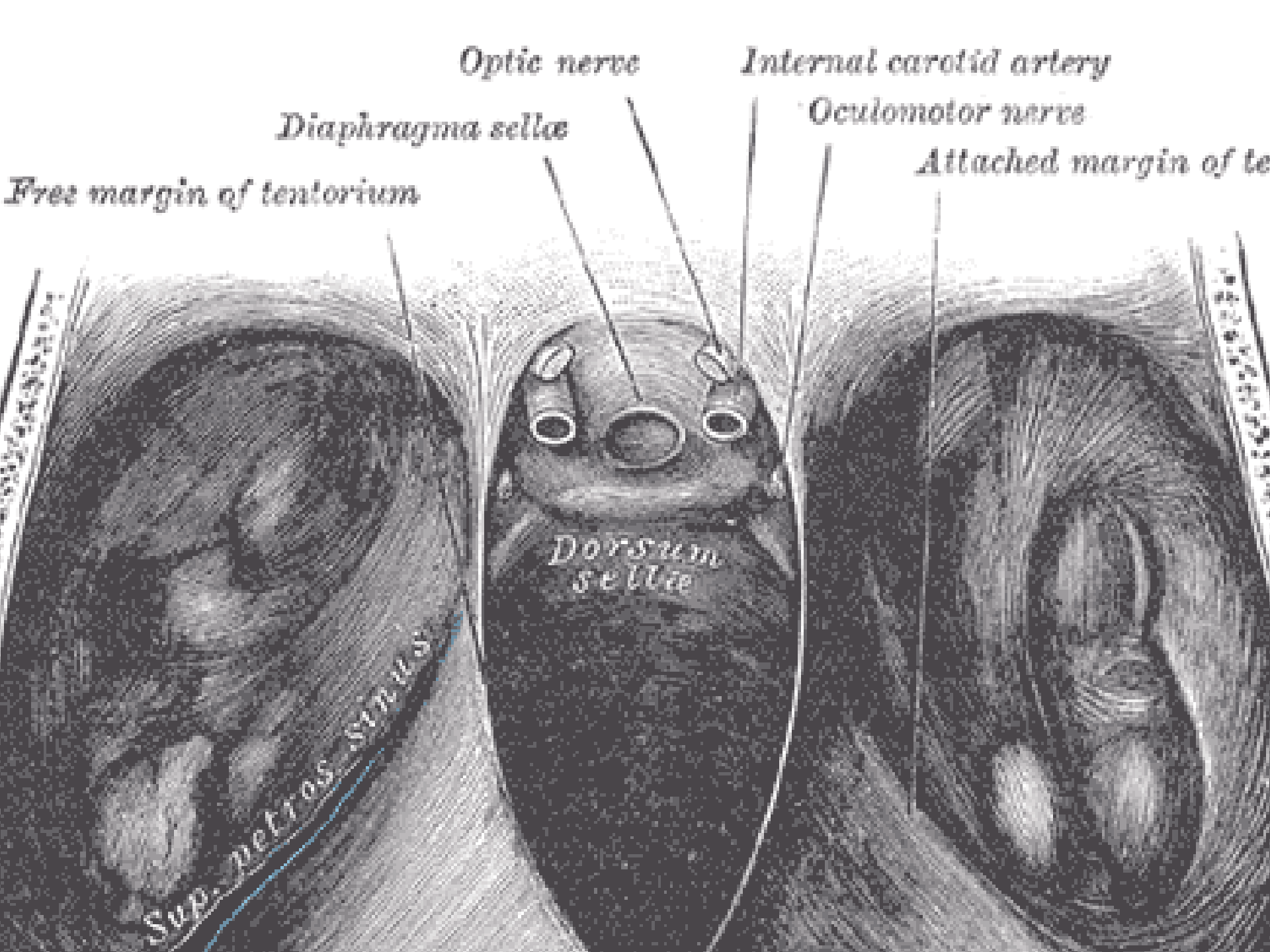
- 65-year-old woman noted slow progressive visual loss OS x 2 months
- Normal acuity, color, pupils and fundus exam





Bitemporal Hemianopia


Chiasm
Diaphargma sella


Optic nerve
Internal carotid artery
Diaphragma sellæ
Oculomotor nerve
Free margin of tentorium
Attached margin of te
Dorsum sellæ
Sup. petros. sinus

Contrast enhanced

Visual Recovery after Decompression of Pituitary Macroadenoma

- 113 patients who were underwent transsphenoidal decompression for pituitary tumor
- Most noticeable improvement of acuity was within 1 week
- Most dramatic field improvement 1 week to 1 month
- In the inferior temporal quadrant improvement appeared within 1 month
- The superior temporal visual field recovered over 6 months

Ji Woong Chang, Jae Ho Jung, Yoen-hee Lee, NANOS meeting 2013

Pituitary Apoplexy

- Acute expansion of a pituitary adenoma or nonadenomatous gland, from infarction or hemorrhage
- Headache in 95%, frequently retro-orbital, nausea and vomiting
- Sudden from stretching of the dura mater in the walls of sella supplied by the meningeal branches of cranial nerve V

Pituitary Apoplexy

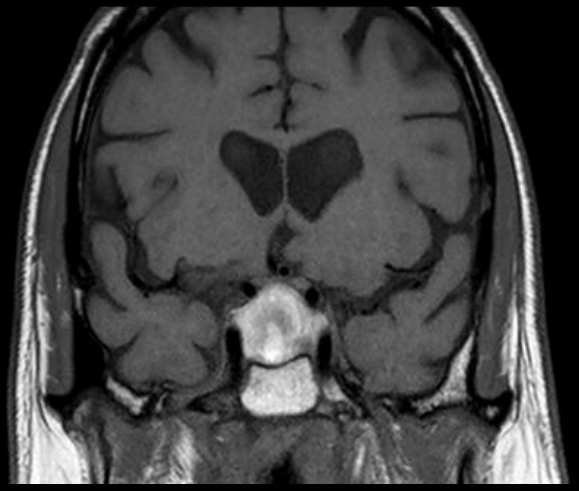
- Visual symptoms, altered mental status, and hormonal dysfunction due to acute hemorrhage or infarction of pituitary gland
- Pituitary adenoma usually present
- Both acuity and visual field loss from chiasm and ocular motility from cavernous sinus involvement

Pituitary Apoplexy Causes

- Predisposing factors include endocrine stimulation tests, bromocriptine treatment, head trauma, pregnancy, and pituitary irradiation
- Administration of gonadotrophin-releasing hormone, long-term bromocriptine therapy
- Induction chemotherapy for AML, after cardiac bypass surgery and high altitude

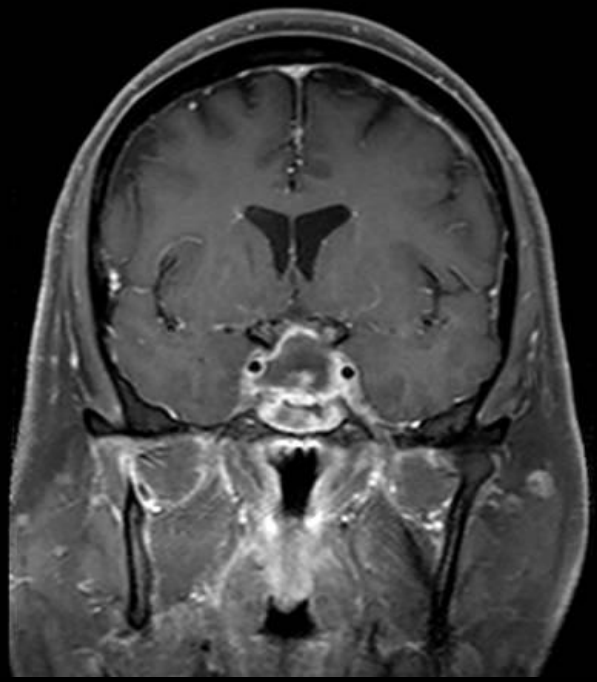
Pituitary Apoplexy

Hemorrhagic



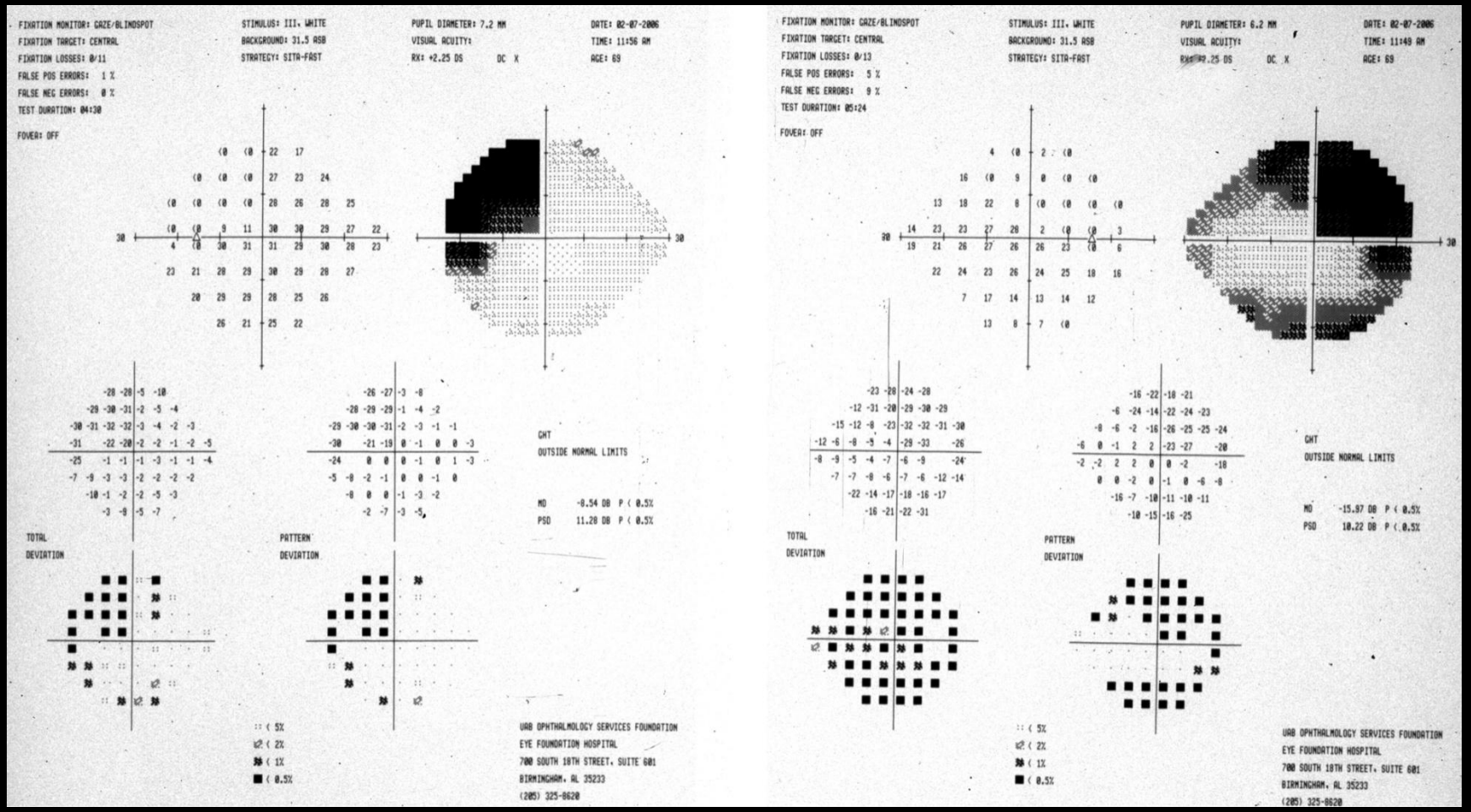
Ischemic

Sheehan's Syndrome



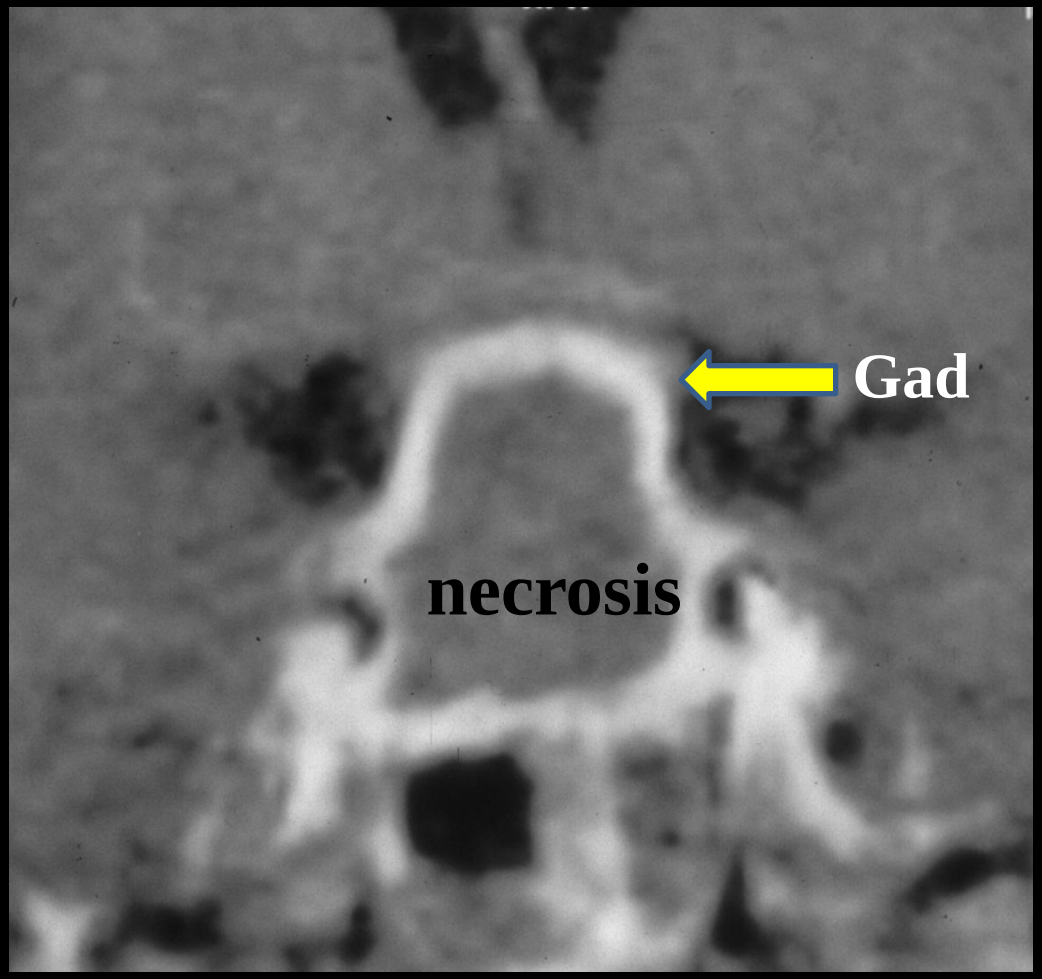
Ischemic Pituitary Apoplexy

- A 69-year-old man, 3 days after coronary artery bypass noted a severe headache and visual loss in both eyes
- Visual acuity of 20/50-2 OD, 20/25-2 OS
- Color vision abnormal OU
- Pupils are equal and symmetric, RAPD OD
- Normal optic nerves and retina OU



Bitemporal Hemianopia

Ischemic Apoplexy



Pituitary Ring Sign

The “Pituitary Ring Sign”: An MRI Sign of Pituitary Apoplexy

Michael S. Vaphiades, D.O.

ABSTRACT

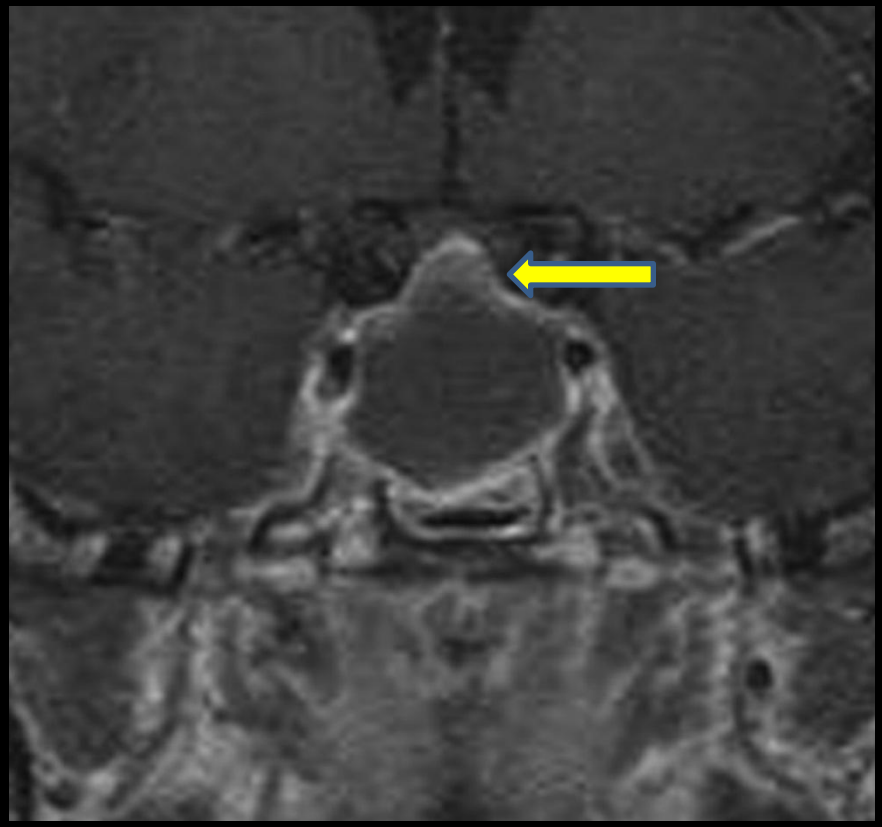
Purpose: ***To describe a magnetic resonance imaging (MRI) sign of*** **pituitary apoplexy.**

Methods: ***The cranial MRI scans of 3 patients with pituitary*** **apoplexy were retrospectively reviewed.**

Results: ***All 3 patients displayed a*** **distinctive MRI sign of an enlarged pituitary gland with peripheral gadolinium enhancement surrounding a hypointense gland.**

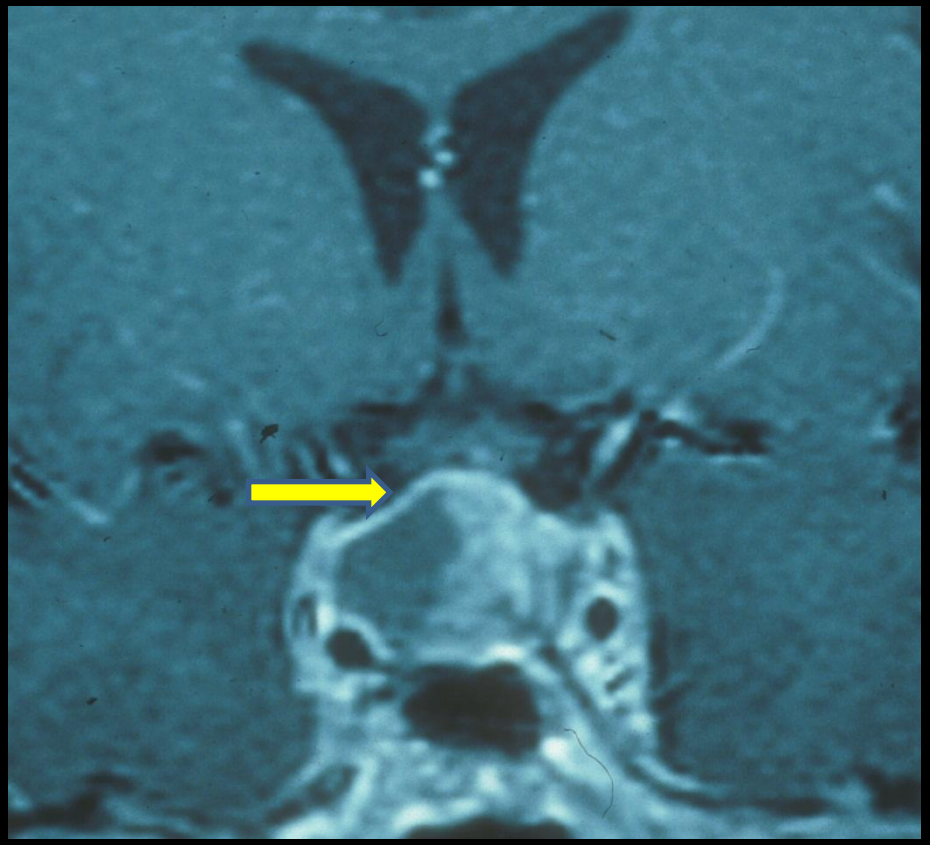
Conclusions: ***The “pituitary ring*** **sign” can aid in the early diagnosis and treatment of pituitary apoplexy.**

Neuro-Ophthalmology, 31:111–116, 2007



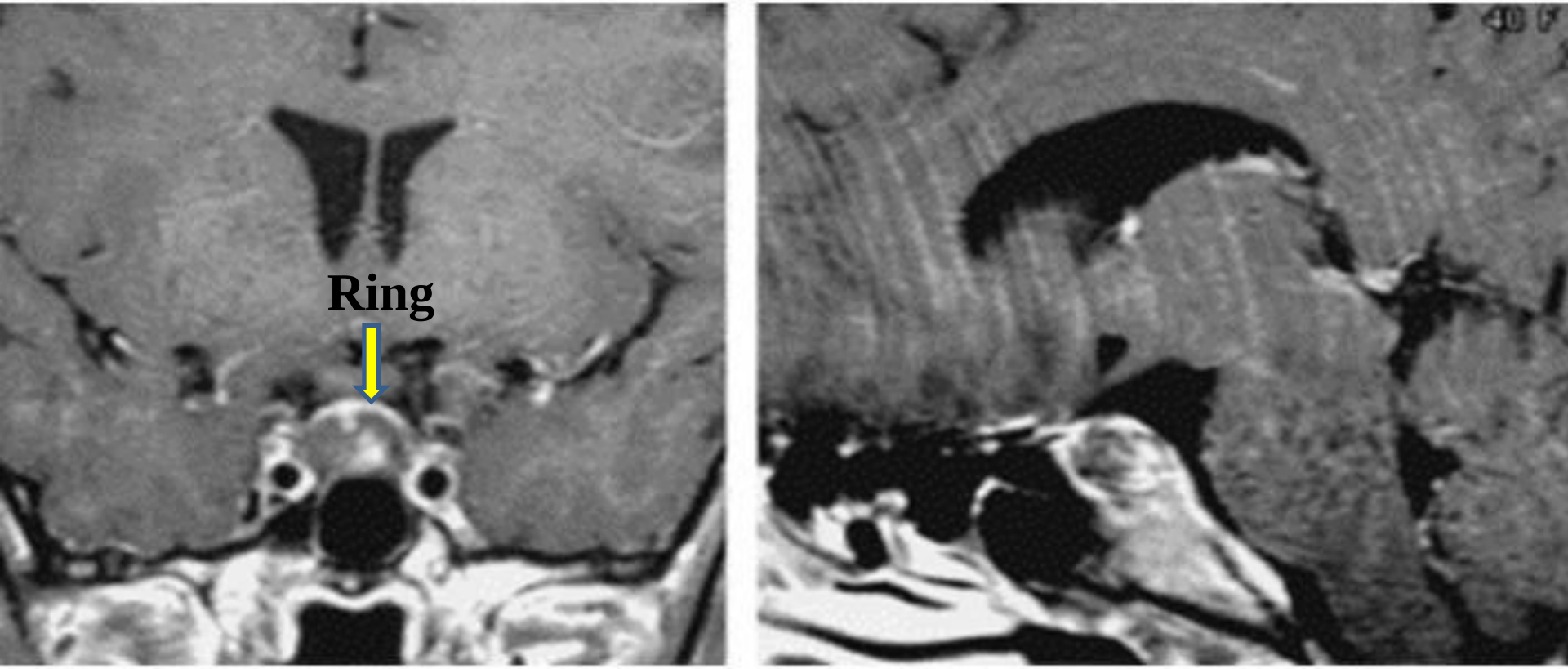
Ischemic Apoplexy

Pituitary Ring Sign



Sheehan's (Ischemic pituitary apoplexy)

- A 40-year-old woman with severe headache and diplopia after hypotension from a postpartum uterine hemorrhage
- Examination showed a very photophobic patient in severe headache
- Visual acuity, color and confrontational fields normal
- Pupils equal with normal reactivity
- 2 prism diopter left hypertropia
- Normal fundus



Contrasted T1 MRI with Gadolinium

Sheehan's Syndrome

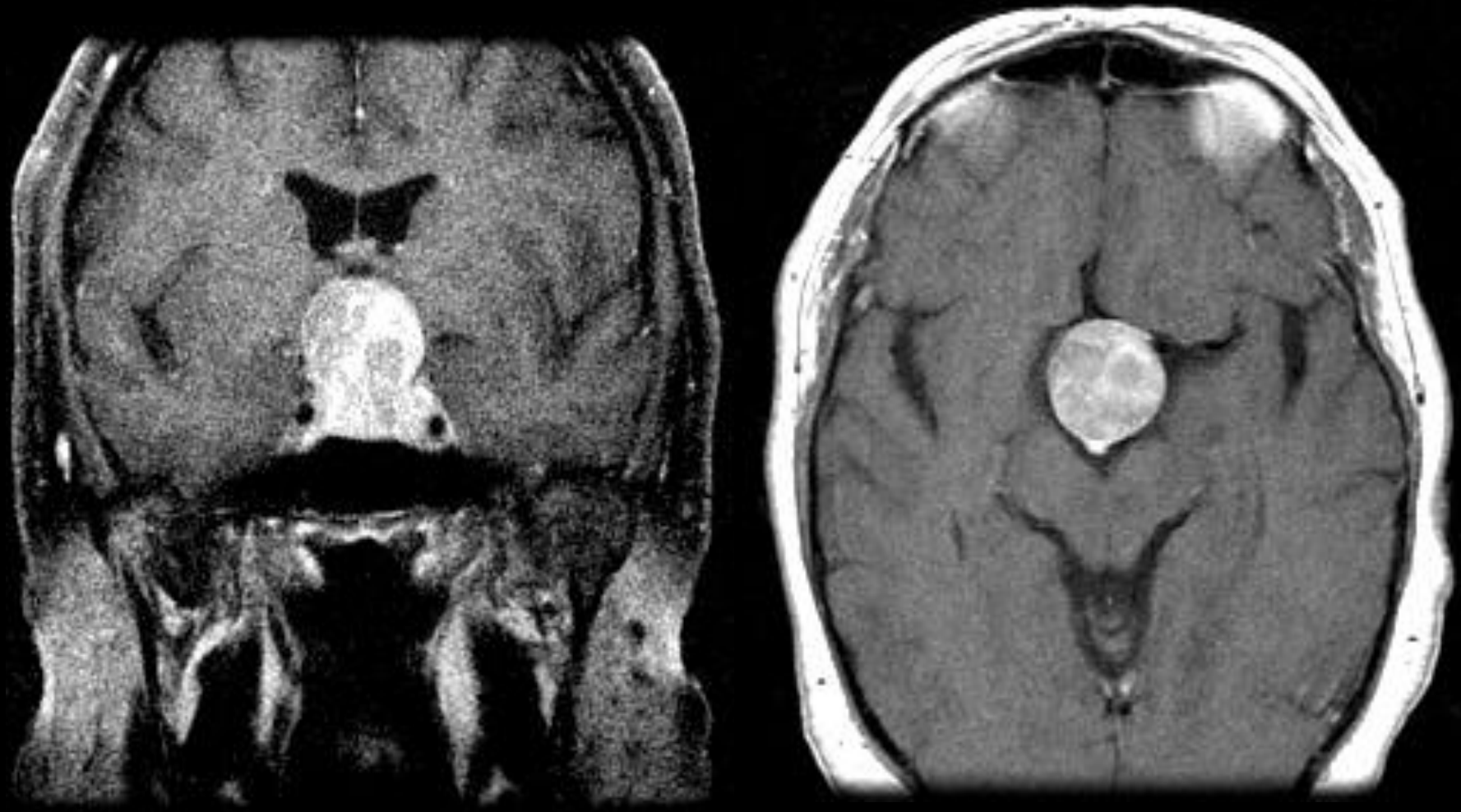
- Normally, the pituitary gland hypertrophies in pregnancy
- This hypertrophy combined with locally released factors mediate vascular spasm and renders the pituitary more susceptible to infarction from compromised blood flow

Sheehan's (Ischemic pituitary apoplexy)

- In 1937 Sheehan reported 11 cases of women who died during childbirth or immediately thereafter, all had necrosis of the pituitary
- Nontumerous gland precipitated by postpartum blood loss with spasm of the arterioles supplying the adenohypophysis

Hemorrhagic Apoplexy

- 68-year-old man with painful diplopia for 1 week
- Normal acuity, color, visual field and fundus
- Pupil involving left 3rd nerve palsy



Non-contrasted T-1 weighted MRI

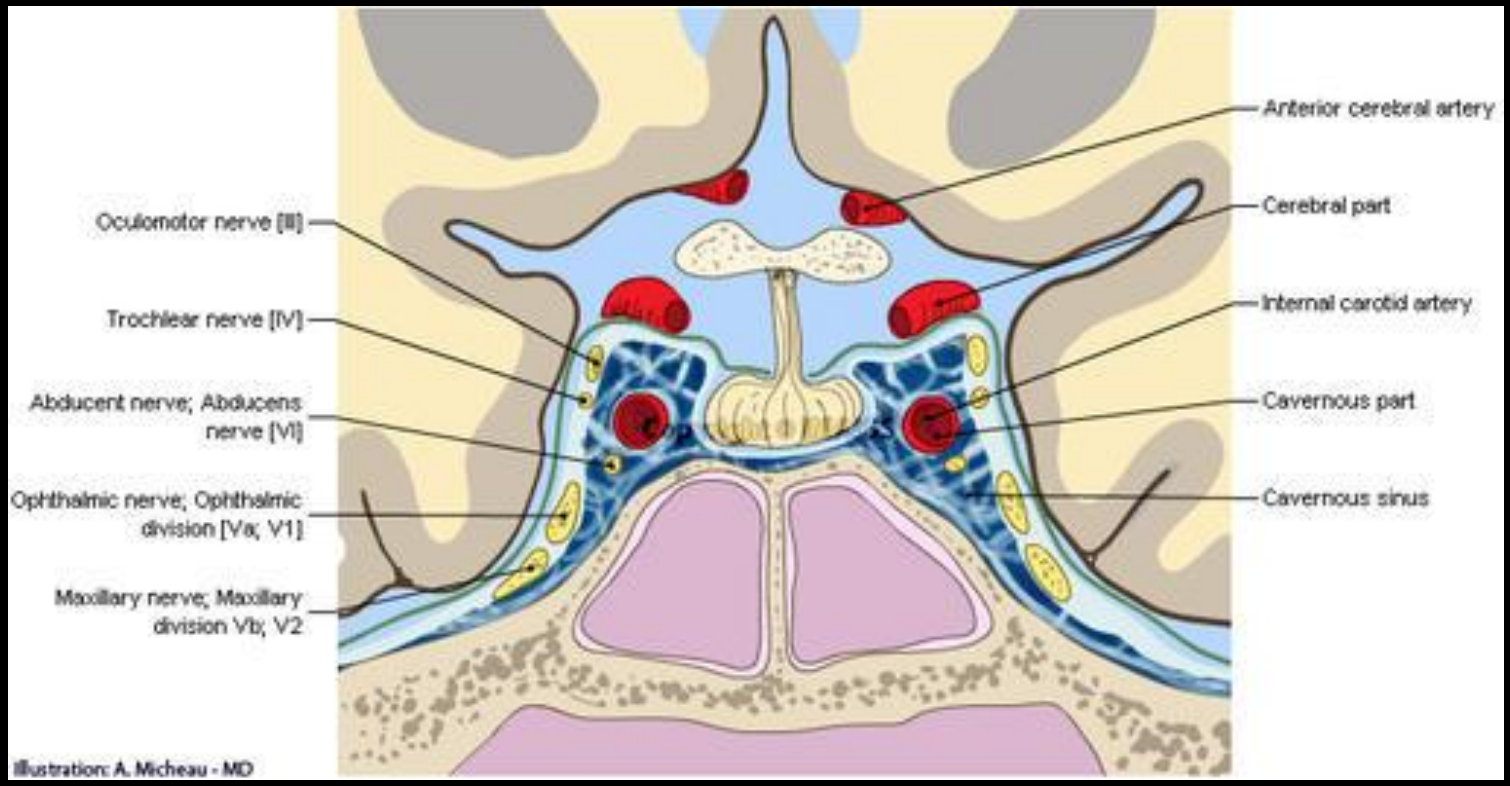

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Illustration: A. Micheau - MD

Treatment

- Medically stabilize the patient
- Electrolytes, glucose, and pituitary hormones
- High-dose hydrocortisone (hypopituitarism)
- Administer appropriate endocrinologic replacement
- Transsphenoidal surgical decompression

The variability in the visual presentation in patients with optic pathway compression may be misdiagnosed if finding other than bitemporal hemianopsia


THE END