NR work shop

Masaki Nakamura

Department of Radiology, Tenri Hospital

症例

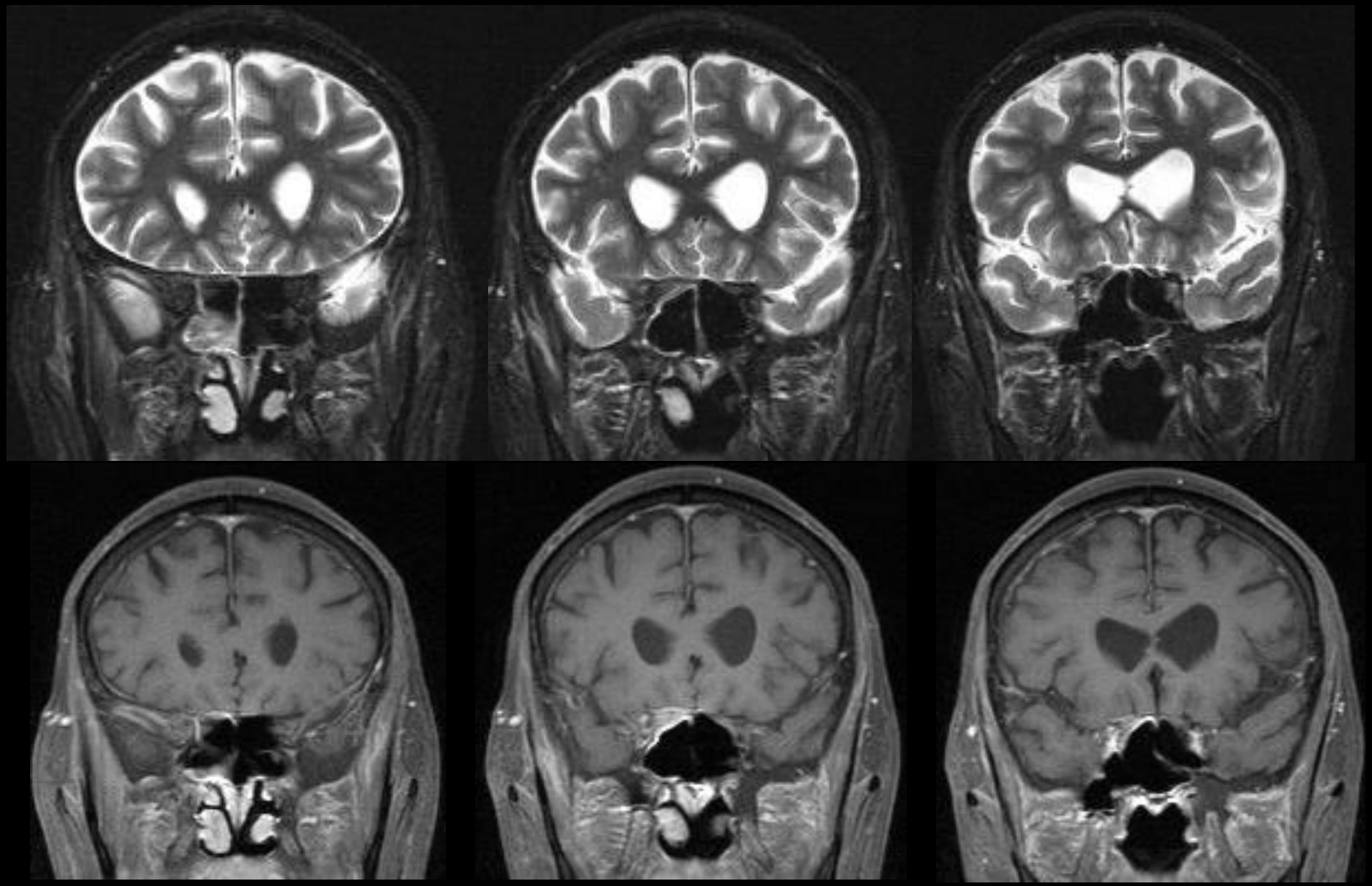
60代男性

主訴：増悪する視力低下

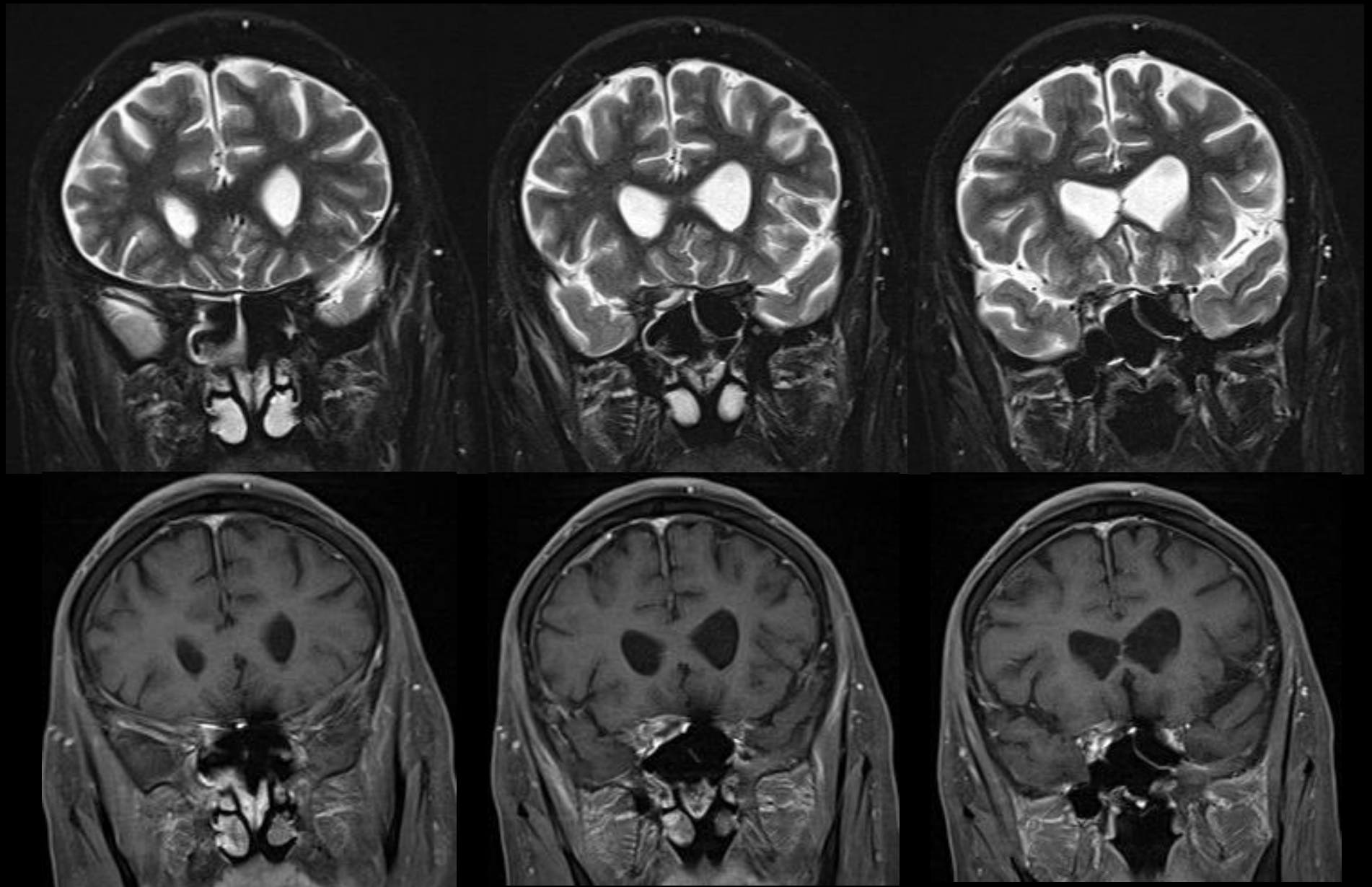
既往：2型糖尿病

現病歴
右視力低下に気づき近医受診。視神経炎と診断されステロイドパルスを受け一時視力改善するも再度増悪するエピソードをくりかえした。2ヶ月後当院紹介されMRI施行。ステロイドパルス、血漿交換療法行うも前回同様に一時視力の改善あるもその後増悪がみられた。1ヶ月後再度MRIとCTが施行された。

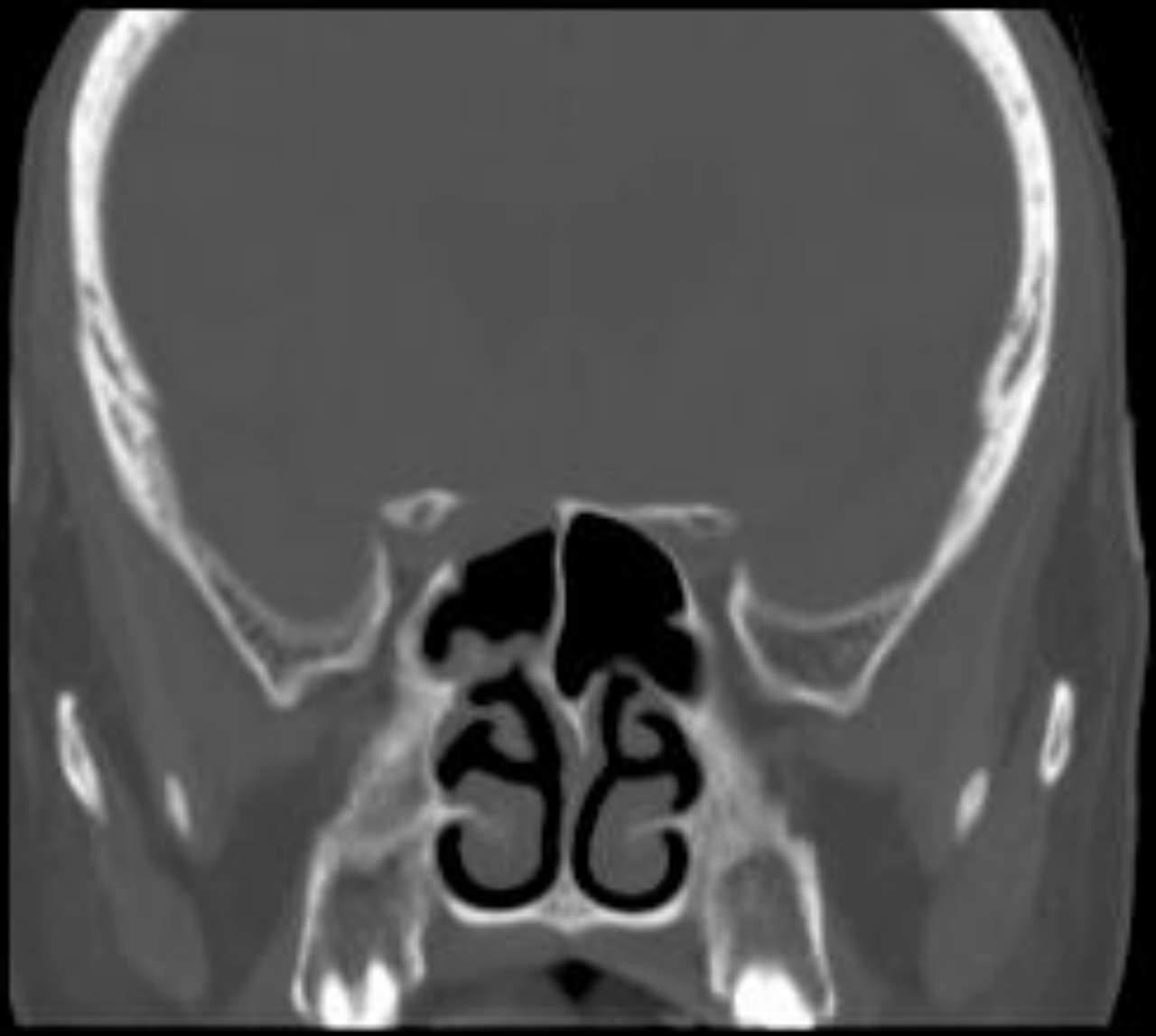
当院初回MRI



当院2回目MRI（前回から1ヶ月）



2回目MRIと同時期のCT



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Case

6 decades of age male

【CC】progressive loss of right vision

【PMH】diabetes mellitus type 2

【HPI】

progressive blurring in right eye → diagnosis of optic neuritis

→ 3 courses of pulse corticosteroid therapy → visual acuity once improved but deteriorated subsequently after each course

2 months later introduced our hospital → first MRI → pulse corticosteroid therapy and plasma pheresis → visual acuity once improved but deteriorated subsequently

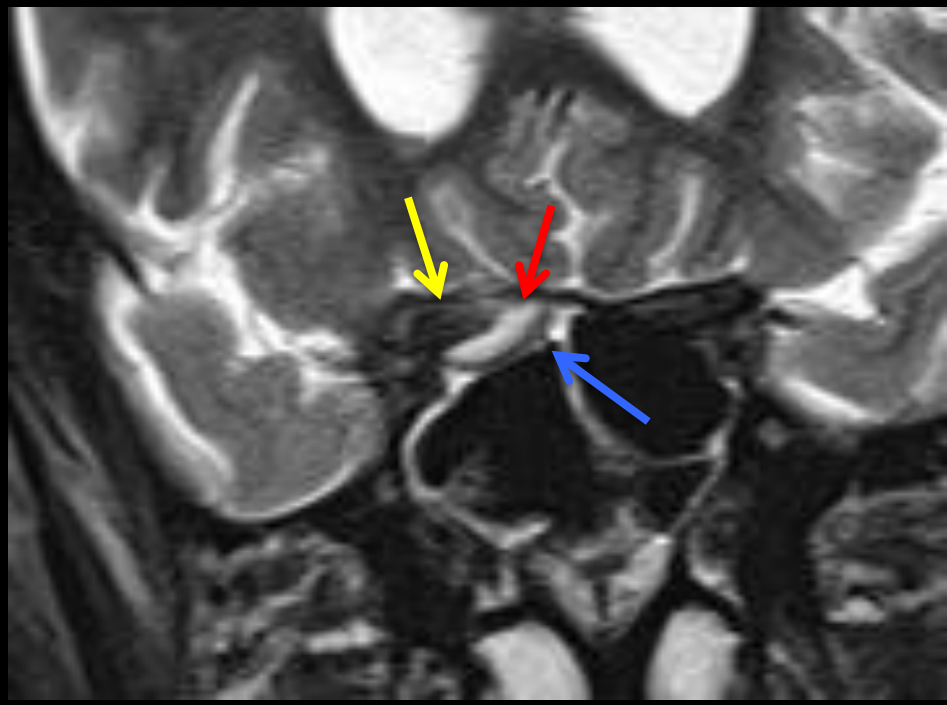
1 month later second MRI and CT

【physical findings】
slight right-sided headache, right visual loss
w/o proptosis nor limitation of eyeball movement

【laboratory findings】
WBC 11400/μl, CRP（-）, HbA1c 9.9%
Anti-AQP4 antibody（-）
CSF: clear,
mono 2/μl, seg 0/μl, TP 38mg/dl, Glu 114mg/dl, TP antibody(-)
VEP: slight response

Images – MRI(STIR)

1 month later



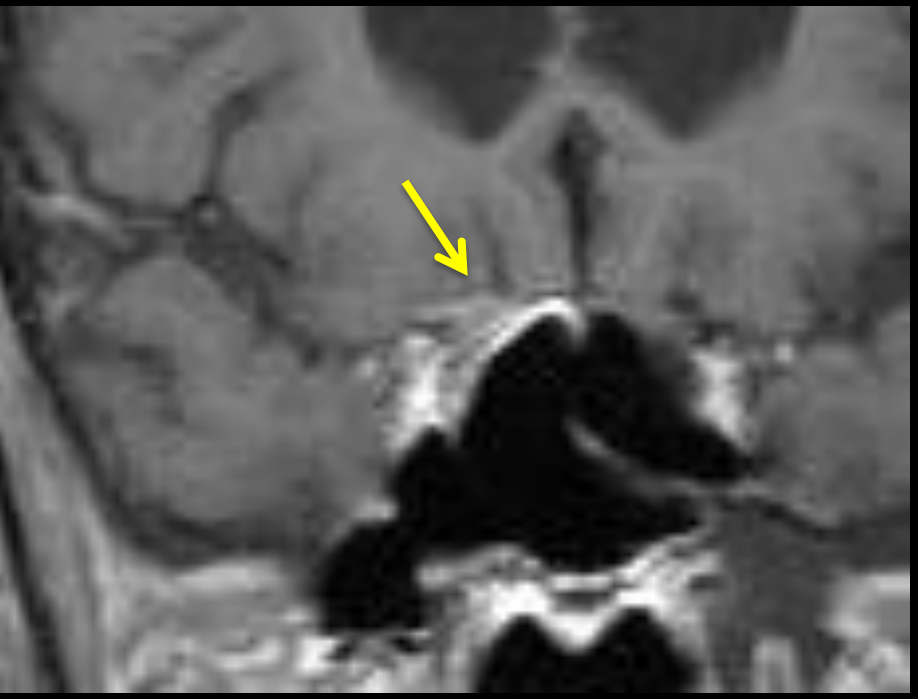
→ Hypo-isointensity in optic nerve

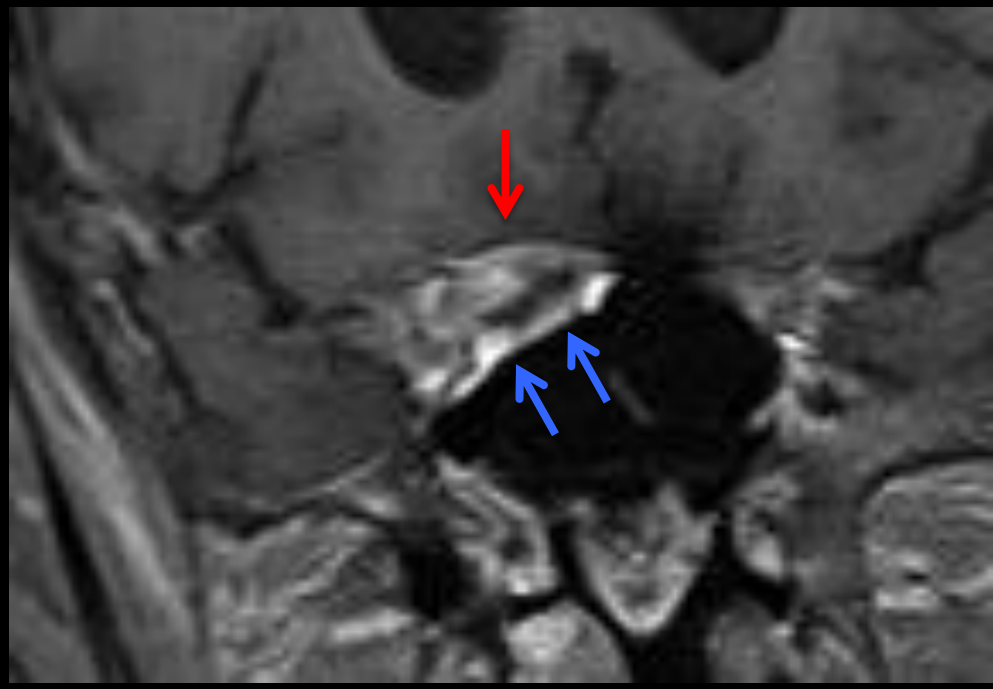
→ fluid collection increase

→ Arc-shaped hypointensity (r/o bone membrane)

Images-MRI(CE-T1WI)

1 month later



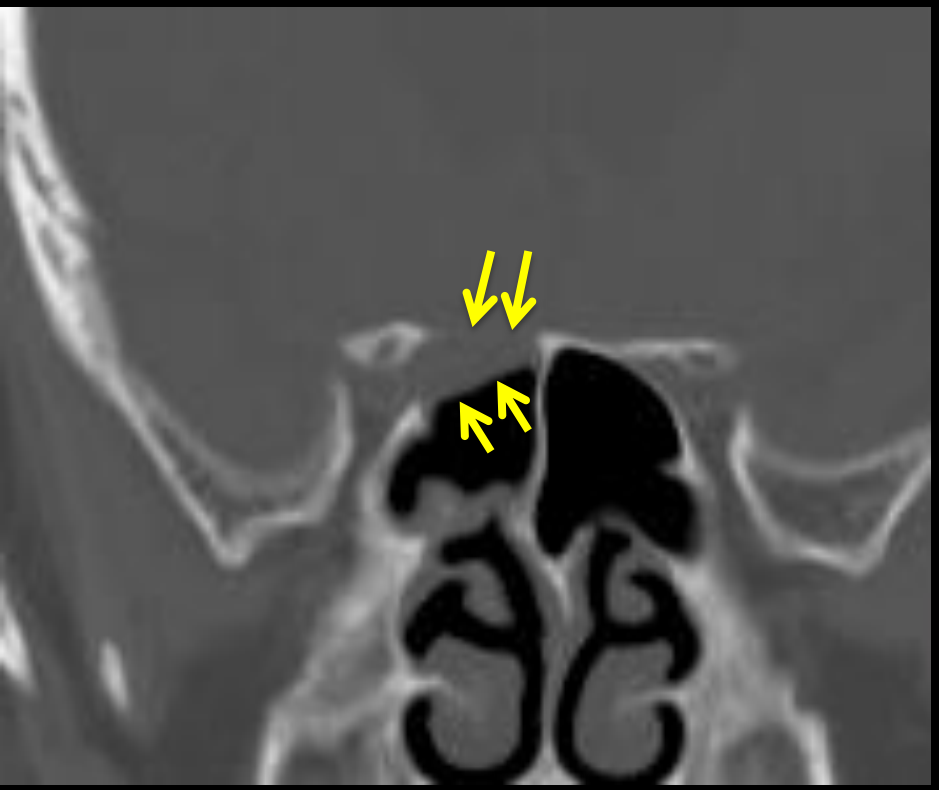


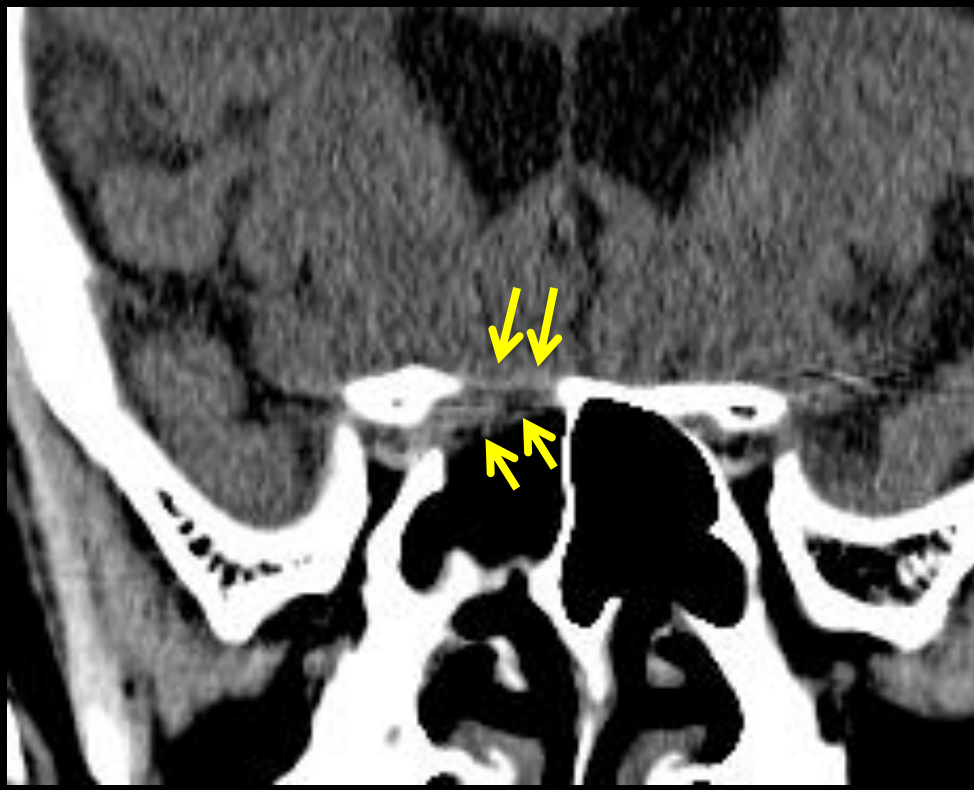
Optic nerve enhancement

Dural enhancement

mucosa enhancement

Images - CT





→ Osteolytic change

Differential diagnosis

optic neuritis

- demyelination
- hereditary
- idiopathic
- infectious
- ischemic
- toxic
- traumatic
- tumor (compressive/metastatic)

sphenoidal mass

- abscess
- granulomatous disease
- metastatic bone tumor
- mucocele
- pituitary adenoma
- primary sphenoidal tumor

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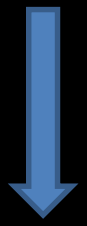
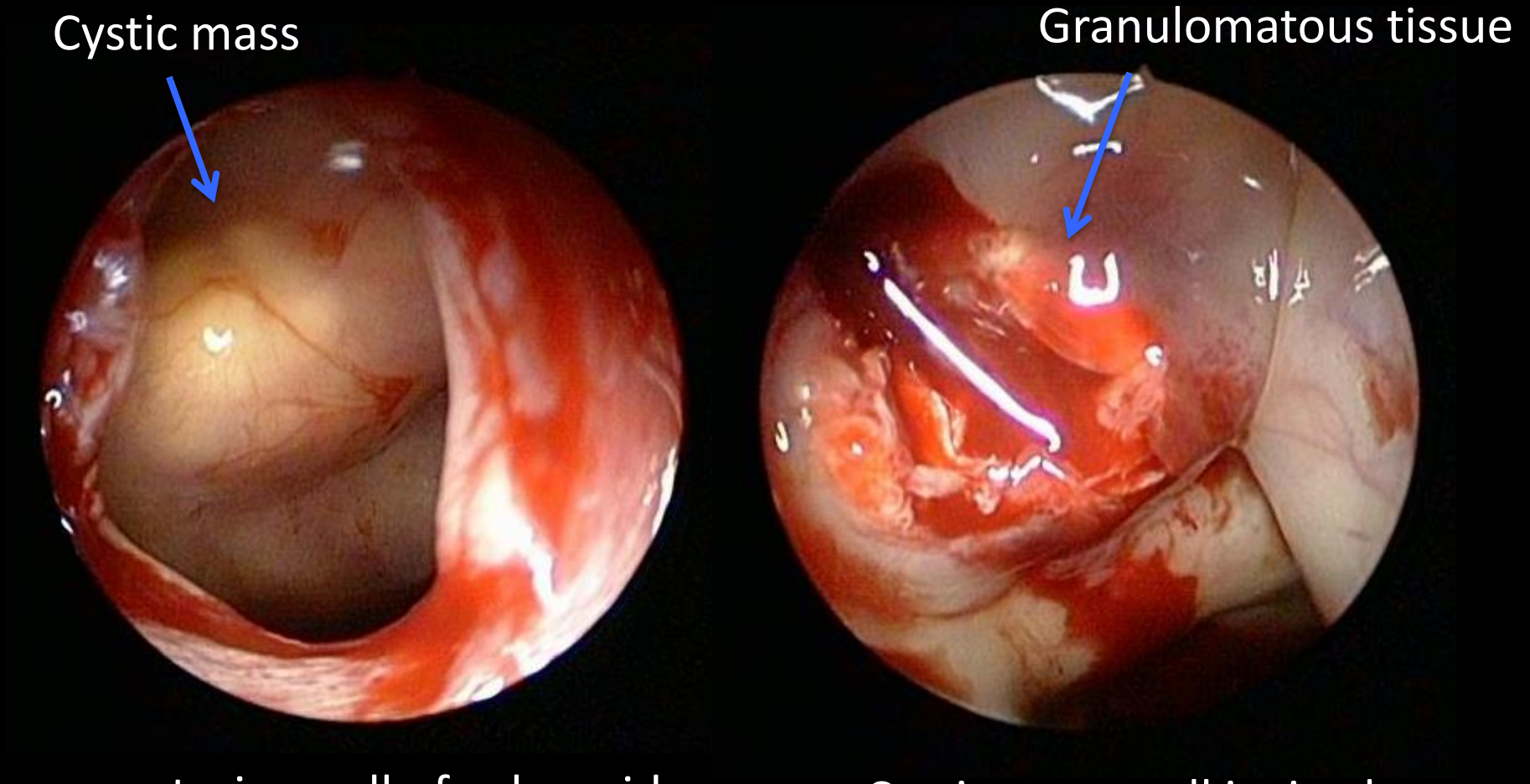
Clinical diagnosis

Cystic tumor or abscess was suspected



Surgical biopsy（Hardy operation）was performed

Surgical biopsy

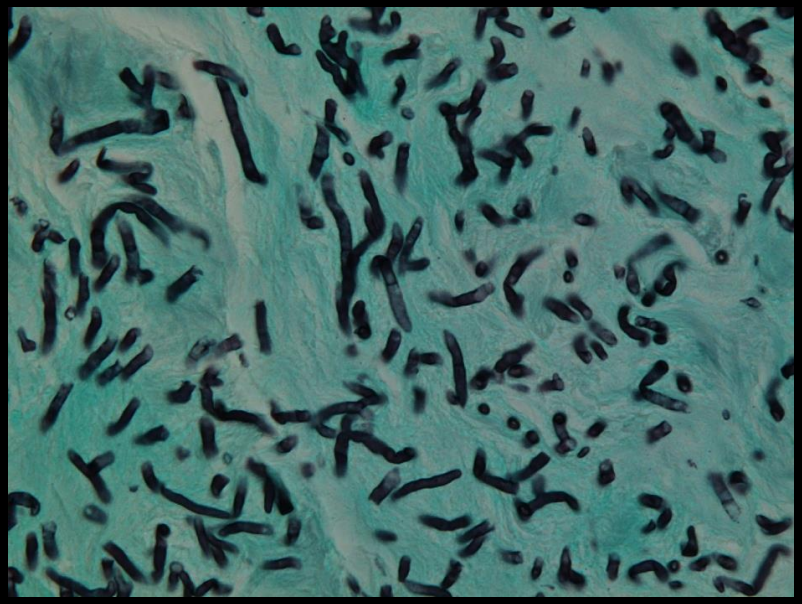


anterior wall of sphenoid sinus (opened)

Cystic mass wall incised

Diagnosis

Aspergillus was detected in granulomatous tissue



Grocott staining

Aspergillus optic neuritis / neuropathy

(subperiosteal abscess: only MSSA was cultured in the pus)

Follow up

He received antifungal drug but developed almost blindness in right eye.

Aspergillosis involving optic nerve

- Aspergillus:
  - Resident flora in the sinonasal cavity
  - Become invasive according to the status of host immunity
  - Increasing due to the use of new antibiotics, steroids and immunosuppresants
  - Sinusitis → Subperiosteal abscess → invasion to the adjacent tissue
- Visual disturbance may occur after invasion to the optic canal, but be rare without soft tissue in the sinus, or without other CN symptoms

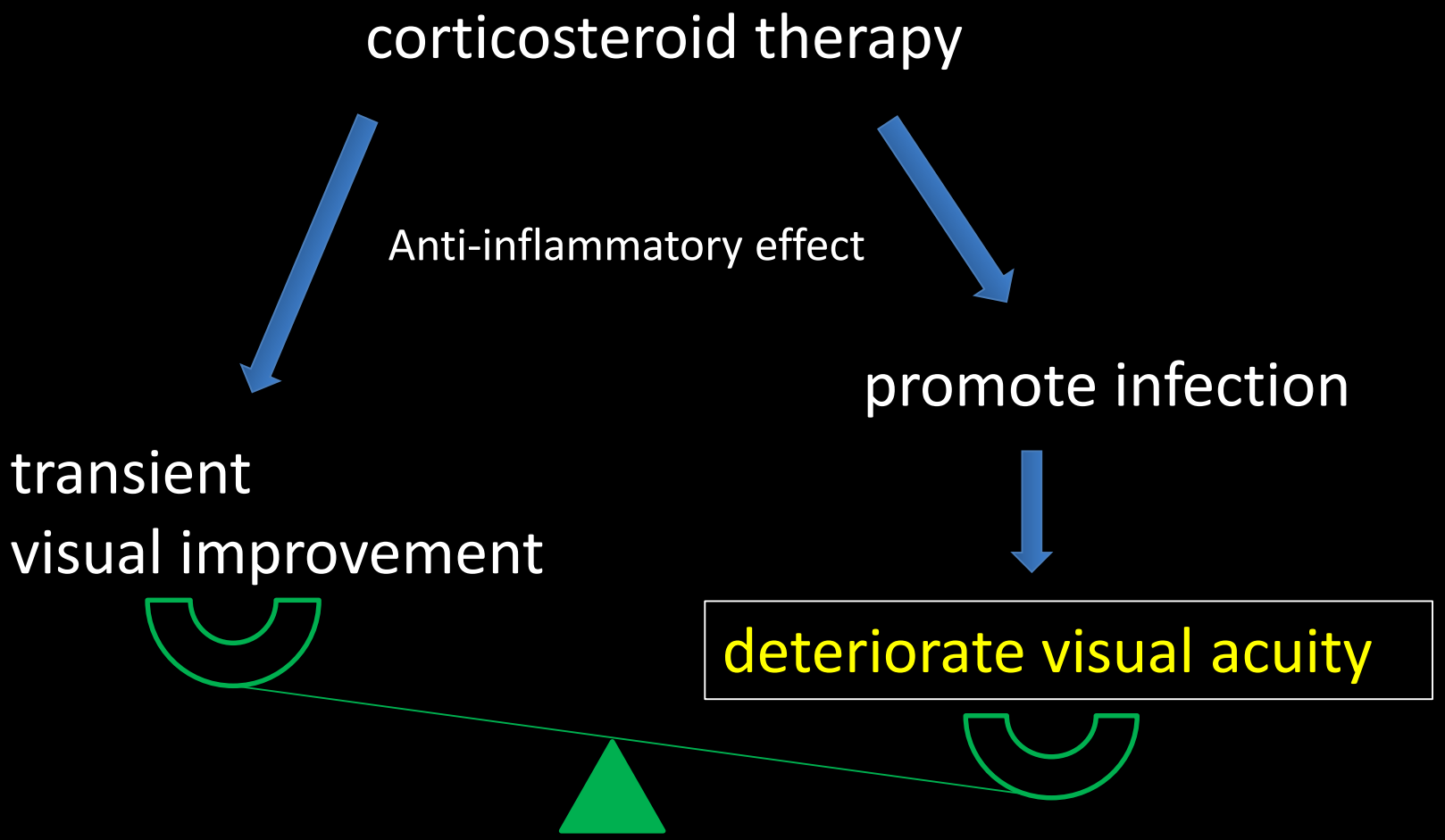
Discussion: optic neuritis imaging

Optic nerve hyperintensity on STIR imaging is usually seen in optic neuritis.
But not seen in this case. ・・・Why?

It is known fungal infection present hypointensity on T2WI by metabolic metal accumulation or free radical.

We suppose that this is the cause of optic nerve hypointensity on STIR although there is no supportive literature.

Discussion: corticosteroid effect



Take home messages

・Fungal infection should be included in the differential diagnosis of a steroid responsive optic neuropathy.

・Hypointensity on STIR maybe the key finding for the fungal optic neuritis.

・Fluid collection may be the final clue for the diagnosis of infectious optic neuritis.

After that…

Initial

6 months later

Take home messages 2

・It is difficult to diagnose pancreatic cancer only by nonenhanced CT.

・Pancreatic cancer grow rapidly.

References

1) Thomas C. et al: Aspergillosis presenting as a corticosteroid-responsive optic neuropathy: J Clin Neuro-ophthalmol, 2: 103-107, 1982.

2) Toshihiko Matsuo et al: Aspergillosis causing bilateral opticNeuritis and later orbital apex syndrome. Jpn J Ophthalmol, 49: 423–433, 2005.

3) H. Sprague Eustis et al: MR imaging and CT of orbital infections and complications in acute rhinosinusitis: Imaging in ophthalmology, 36(6): 1165-1183, 1998.