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Herpes Zoster Ophthalmicus with Oculomotor Nerve Palsy; A Case Report with literature review

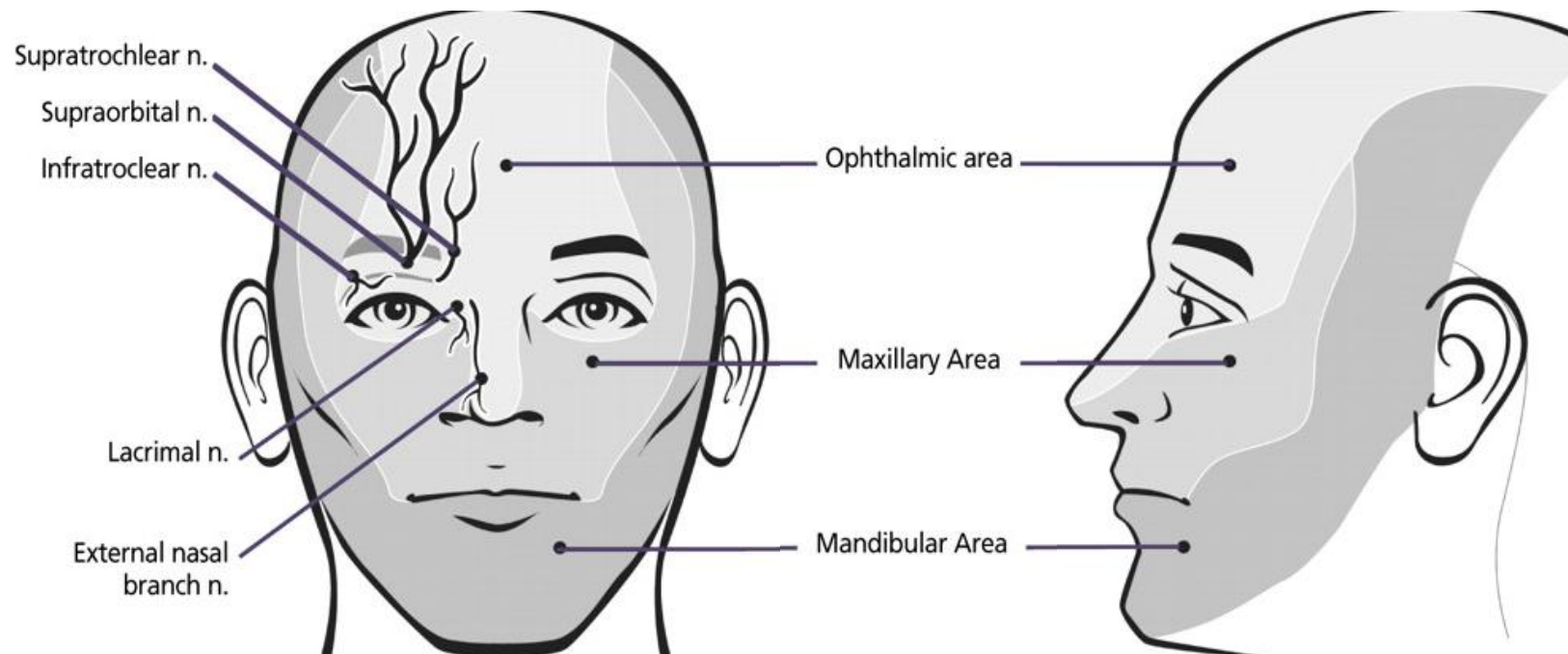
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Introduction

◇ Herpes Zoster Ophthalmicus (HZO)

- Reactivation of latent varicella–zoster virus
- Ophthalmic division of the trigeminal nerve is involved.
- MRI is useful for evaluating ocular involvement and complications. [1] [2]



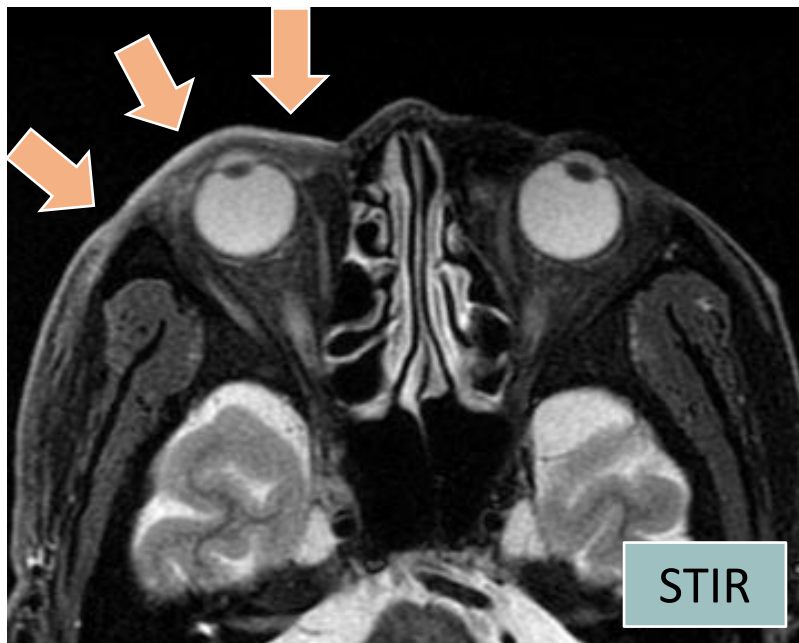
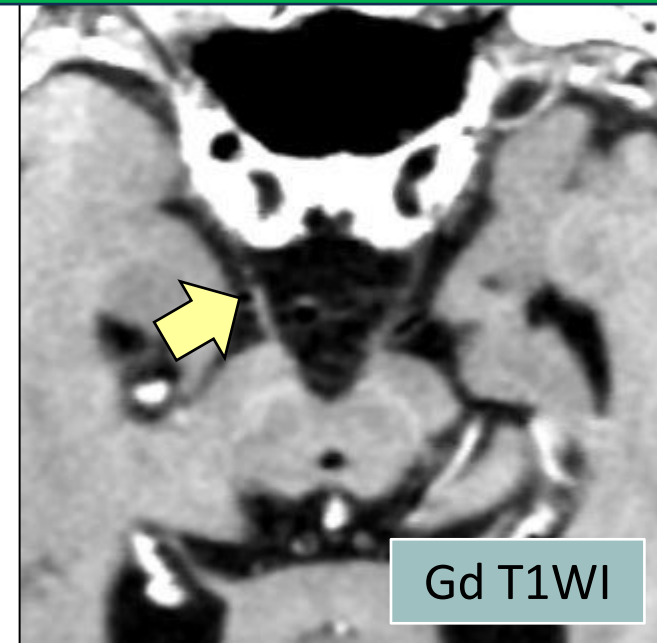
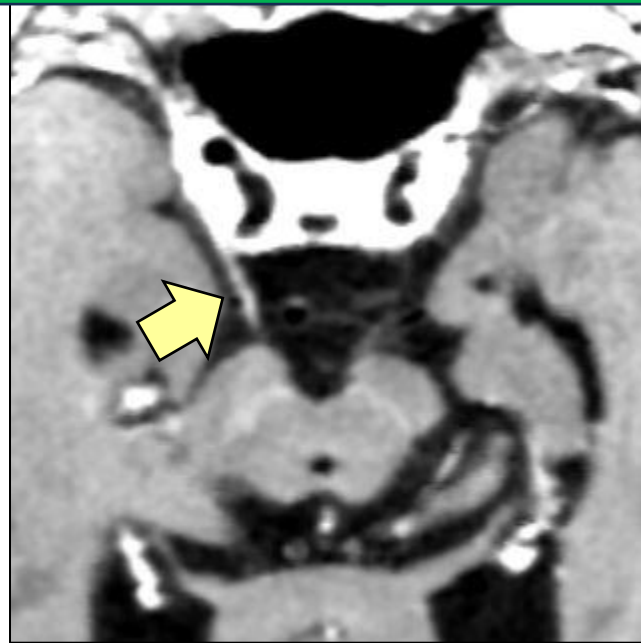
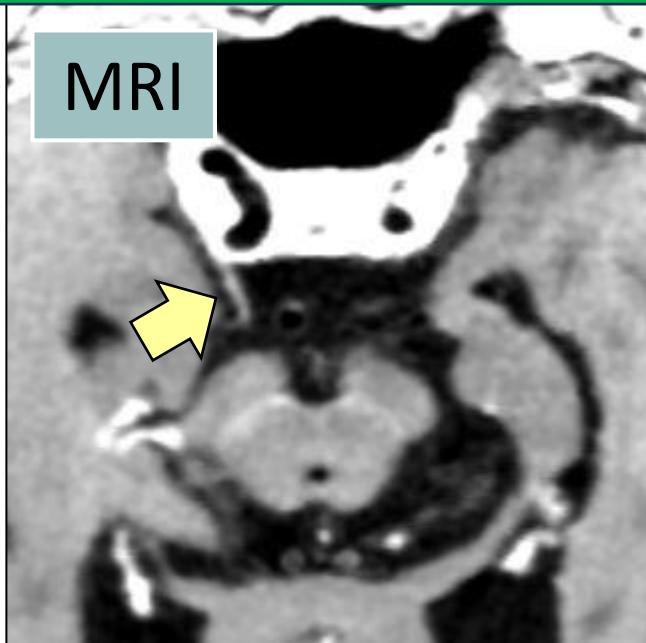
Case presentation (83 y.o., male)

History of Present Illness

- Follow-up after left lower eyelid basal cell carcinoma postoperative status
- Several-day history of right-sided headache, lacrimation, and ocular swelling
- Erythema and vesicles in the right V1 area
→ Diagnosed with HZO and admitted

After Admission

- Treated with intravenous acyclovir and steroids
- Pain improved: vesicles crusted
- Around 1 week after onset: ptosis, mydriasis, and diplopia became apparent
→ Suspected oculomotor nerve palsy



Enhancement of oculomotor nerve (⇒)

Periocular subcutaneous swelling
on STIR (⇒)

Examinations & Diagnosis

◇ Serological tests

VZV IgG 128.0 (+), VZV IgM (–)

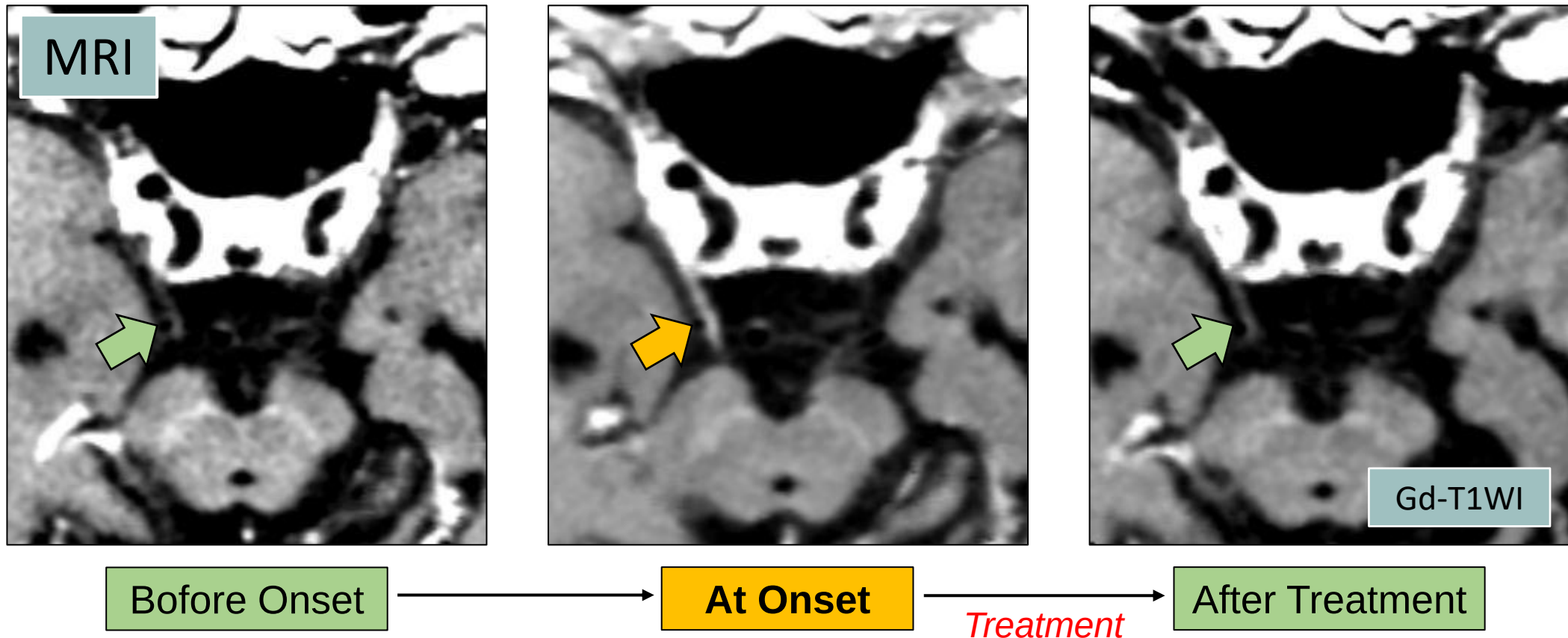
◇ Cerebrospinal Fluid Findings

Cell count 11/μL (100% mononuclear cells), Protein 57 mg/dL,
Glucose 63 mg/dL (serum glucose 109 mg/dL), VZV PCR (–)

Diagnosis : HZO-associated Oculomotor Neuritis and Palsy

Clinical Course

ACV was resumed, and steroid pulse therapy was performed.
Ptosis and ocular motor dysfunction was improved, and he was discharged.



Herpes Zoster Ophthalmicus (HZO)

- HZO accounts for 10–20% of herpes zoster cases ^[3]
- Ocular motor palsy occurs in 5–31% of HZO patients ^[3]
- Involvement frequency : oculomotor > abducens > trochlear ^[4]
- Mean interval from rash onset to nerve palsy : 8.6 days ^[5]

Literature review

Search procedure

- ◇ Database : PubMed
- ◇ Search terms : “Herpes zoster” and “oculomotor nerve”
- ◇ Year of Publication : 2000-2025

Abstracts were screened, and case reports of HZO with oculomotor nerve palsy were selected.

Exclusion criteria

- Non-case report articles (e.g., case series, review article and so on)
- Images unavailable
- Conference proceedings

Case Number	Age	Sex	Oculomotor Symptoms				Interval from Rash Onset	Imaging findings	
			Ptosis	Impaired eye movements	Mydriasis	Absent pupillary light reflex		Modality	Ocular Motility–Related Imaging Findings
1)	34	M		●			nerve palsy preceded	MRI	midbrain–to–hypothalamus T2WI hyperintensity
2)	44	M	●	●			Around 4 week	MRI	Enhancement of oculomotor nerve
3)	45	M	●	●	●	●	nerve palsy preceded	MRI	-
4)	51	M	●	●	●		Around 3 week	MRI	Enhancement of oculomotor nerve
5)	56	F	●	●			Around 3 week	MRI	-
6)	67	F	●	●	●	●	30 days	MRI	Extraocular muscle enlargement and enhancement
7)	67	F	●	●			Around 4 week	MRI	Oculomotor nerve enlargement
8)	67	M	●	●			5 days	CT,MRI	-
9)	79	F	●	●			11 days	MRI	-
10)	83	M	●	●			Around 1 week	MRI	-
11)	80	F	●	●			38 days	MRI	-
12)	55	F	●	●	●		Around 4 week	MRI	cavernous sinus and cranial nerve (II, III, VI) enhancement
13)	65	F	●	●	●		Almost simultaneous	CT	-
Our case	83	M	●	●	●		Around 1 week	MRI	Enhancement of oculomotor nerve

Discussion

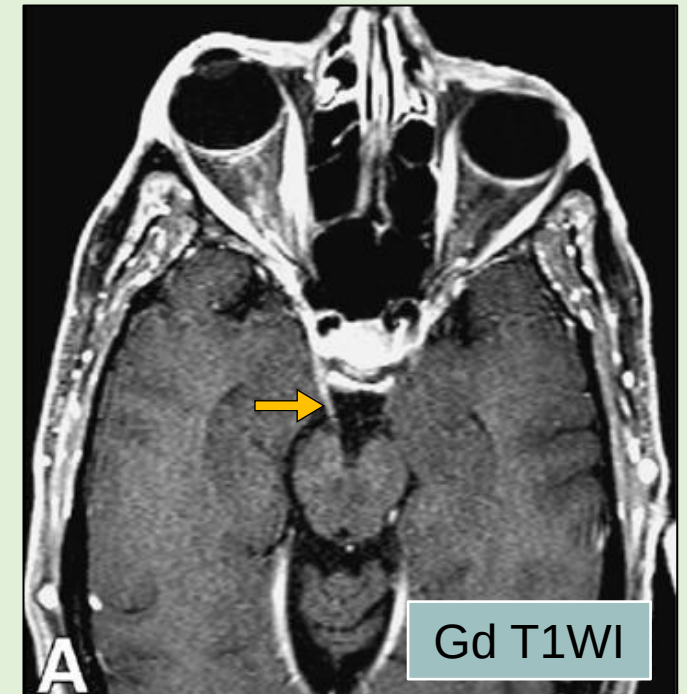
- Oculomotor nerve enhancement has been reported on contrast MRI.
- In our case, enhancement appeared at onset and disappeared after treatment.
→ Contrast-enhanced MRI is likely to reflect disease activity.

◇ A similar case (44 y.o., male)

He developed oculomotor and trochlear nerve palsy three weeks after HZO onset.

Enhancement of oculomotor nerve

2) J Neuro-Ophthalmol 2006;26:47–48



Conclusion

- ✓ We report a case of HZO complicated by oculomotor nerve palsy with literature review.
- ✓ We observed the clinical course in correlation with serial MRI findings.
- ✓ Careful MRI evaluation of the oculomotor nerve is important in this disease.

References

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- [2] Nat Rev Microbiol. 2014 Mar;12(3):197-210.
- [3] Cureus. 2022 Oct 27;14(10):e30755
- [4] J Ophthalmic Inflamm Infect. 2014;4:25
- [5] Neuro-Ophthalmol 2014;34:20-22
- 1) Haematologica. 2005 Dec;90(12 Suppl):EIM04.
- 2) J Neuroophthalmol. 2006;26: 47–48
- 3) J Am Osteopath Assoc. 2008 Oct;108(10):615-21.
- 4) Neurology. 2010 Apr 13;74(15):e65.
- 5) Ocul Immunol Inflamm. 2012 Oct;20(5):365-7
- 6) BMJ Case Rep. 2012 Oct 29;2012:bcr2012007063
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- 8) Am J Med. 2022 Feb;135(2):e47-e48
- 9) J Infect Chemother. 2023 May;29(5):519-522.
- 10) Cureus. 2023 Dec 15;15(12):e50553
- 11) Intern Med. 2024 Oct 1;63(19):2673-2677
- 12) Ocul Immunol Inflamm. 2025 Sep;33(7):1451-1454.
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Thank you for your attention !



*We are looking forward to seeing you again
in Yamagata, 2028.*