

**APANGA MARMA ABHIGHATA PRESENTING AS TRAUMATIC
OPTIC NEUROPATHY: A CASE REPORT BRIDGING AYURVEDIC
MARMA VIJNANA AND CONTEMPORARY CRANIOFACIAL
TRAUMA**

Dr Arathi Devi A.^{1*}, Dr. Swapna Kumary M. S. (Ayu.), Ph. D.²

¹Final Year P. G. Scholar Dept. of Rachana shaira, Alvas Ayurveda Medical College,
Moodubidire – 574227.

²Professor and H. O. D, Dept. of Rachana shaira, Alvas Ayurveda Medical College,
Moodubidire – 574227.

Article Received on 14 Sept. 2026,
Article Revised on 03 Oct. 2026,
Article Published on 16 Oct. 2026,

<https://doi.org/10.5281/zenodo.23386584>

***Corresponding Author**

Dr. Arathi Devi A.

Final Year P. G. Scholar Dept. of
Rachana shaira, Alvas Ayurveda
Medical College, Moodubidire -
574227.



How to cite this Article: Dr Arathi Devi A.^{1*},
Dr. Swapna Kumary M. S. (Ayu.), Ph. D.².
(2026). Apanga Marma Abhighata Presenting as
Traumatic Optic Neuropathy: A Case Report
Bridging Ayurvedic Marma Vijnana and
Contemporary Craniofacial Trauma. World
Journal of Pharmaceutical Research, 15(20),
896-901.

This work is licensed under Creative Commons
Attribution 4.0 International license.

ABSTRACT

Apanga marma, described in the *Sushruta Samhita* as a *Sira marma* located below the lateral end of the eyebrow and lateral to the outer canthus of the eye on both the sides, is classically stated to cause *andhya* (blindness) or *Drishti abhighata* (visual impairment) upon injury.^[1] Modern cadaveric and radiological correlation places this vital point over the region of the lateral orbital rim, superior temporal fossa and zygomatic arch - an area traversed by branches of the ophthalmic and middle meningeal vasculature and in close proximity to the intracanalicular optic nerve.^[2] The case of a 55-year-old woman who sustained blunt trauma to the right periorbital-zygomatic region after being struck by a bus door, resulting in a right zygomaticomaxillary complex (ZMC) fracture with Traumatic Optic Neuropathy (TON) and post-traumatic labyrinthitis vertigo. The case illustrates a clear anatomical and clinical overlap between the classically described *Apanga*

marma abhigata and a well-recognised modern craniofacial trauma entity and underscores the continued relevance of ancient *marma vijnana* as an anatomical early-warning in blunt facial trauma.

KEYWORDS: *Apanga marma*, *andhya*, *vaikalyakara*, zygomaticomaxillary complex fracture, blunt orbital trauma.

INTRODUCTION

Marma vijñana, the ancient Ayurvedic science of vital anatomical points, describes 107 *marmas* as sites where *mamsa* (muscle), *sira* (vessels), *snayu* (ligaments/nerves), *asthi* (bone) and *sandhi* (joints) converge and where *prana* (vital force) is concentrated. Among the *urdhwa jatrugata marmas*, *Apanga marma* is a paired *Sira-pradhana marma* situated half an *angula* below the lateral end of the eyebrow, lateral to the outer canthus of the eye, in the region corresponding to the anterior superficial temporal fossa above the zygomatic arch.^[1]

,
 S.S.6/27

Acharya Sushruta classified *Apanga* as a *Sira marma*, predominantly composed of blood vessels, while *Acharya Vagbhata* classified it as a *Snayu marma*; both agree that injury to this point results in *andhya* (blindness) or *drishti-abhigata* (impaired vision).^[1,3] A cadaveric dissection study confirmed that the middle meningeal and middle cerebral arterial territories, along with extracranial, intracranial and intraorbital neurovascular structures, lie within this *marma*, providing a structural explanation for why trauma here can impair visual function.^[2]

In contemporary trauma literature, the anatomical territory of *Apanga marma* corresponds closely to the zygomaticomaxillary complex (ZMC) and lateral orbital rim—a region frequently fractured in road traffic accidents, assaults and falls. Traumatic optic neuropathy (TON), an uncommon but vision-threatening consequence of such injury, has an incidence of approximately 0.5–2.5% among closed head and maxillofacial trauma cases and up to 6% among surgically treated ZMC fractures.^[4,5] In the present case, a blunt impact centred on the *Apanga marma* region produced a ZMC fracture with loss of vision is discussed with the correlation between classical *marma* description and modern trauma pathophysiology.

CASE REPORT

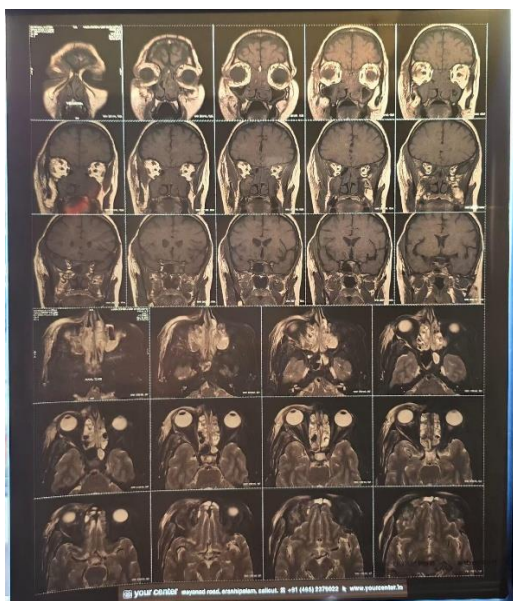
A 55-year-old woman, a known case of type 2 diabetes mellitus, presented after being struck on the right side of the face by the closing door of a moving bus. The impact was centred over the right lateral orbital–zygomatic region, corresponding anatomically to the *Apanga marma*. Patient was brought to the emergency department of a tertiary care hospital within half an hour, conscious and oriented, with no loss of consciousness, seizure, ENT bleed or vomiting, though retrograde amnesia for the event was noted. Patient complained of loss of

vision on the right eye, pain and swelling over the right side of the face, difficulty opening the mouth and pain over the right shoulder.

On examination, vital parameters were stable (heart rate 74/min, respiratory rate 16/min, blood pressure 168/90 mmHg, SpO₂ 96% on room air, capillary glucose 176 mg/dL). Local findings included a depressed right zygomatic arch, decreased mandibular movements, painful mouth opening, and a lacerated wound over the right cheek. The right eye showed periorbital oedema with severe subconjunctival haemorrhage. Occlusion was undisturbed, with no trauma-related dental derangement.

Imaging findings: Non-contrast CT of the head performed on the day of injury showed no significant trauma-related intracranial lesion but confirmed a right zygomaticomaxillary complex fracture. MRI of the orbit performed the following day demonstrated focal intrasubstance signal alteration in the intracanalicular segment of the right optic nerve, suggestive of optic nerve injury, together with marrow oedema in the anterior clinoid process and optic strut on the right side. Fluid was noted in the extraconal space adjacent to the right lateral rectus, with soft-tissue oedema in the preseptal, maxillary and right facial regions. CT orbit was subsequently advised to rule out an associated optic canal fracture.

Management: The patient was managed by with intravenous antibiotics and tetanus prophylaxis.



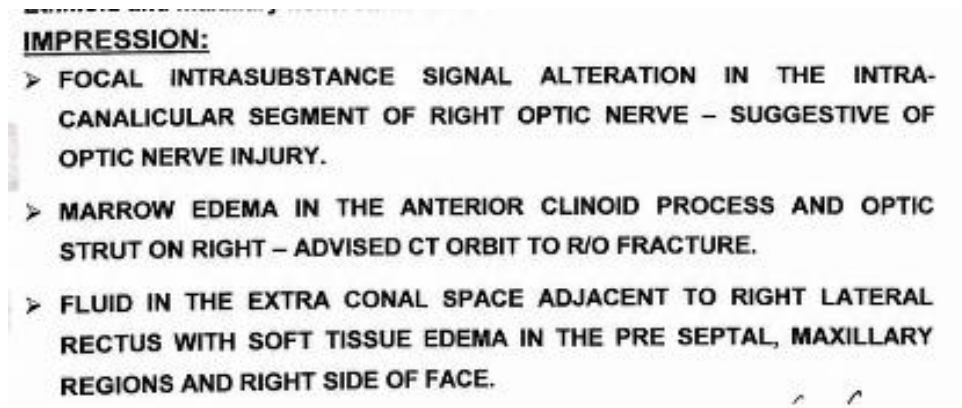


Fig: Mri Scan of Orbit.

DISCUSSION

This case exemplifies a striking correlation between the classical description of *Apanga marma abhigata* and a well-documented modern trauma entity. The point of impact is the region below the lateral end of the eyebrow and lateral to the outer canthus, overlying the zygomatic arch, corresponds precisely to the location of *Apanga marma*. *Sushruta Samhita* states that, injury at this site produces *andhya* and *drishti-abhigata*, is mirrored in this patient's MRI, confirming intracanalicular optic nerve signal alteration and clinical picture of traumatic optic neuropathy.

Anatomically, the probable structures related to *Apanga marma* lying extracranially within the half *angula* are.

Mamsa Orbicularis oculi.

Sira Zygomatic-facial vessels, Zygomatic-temporal vessels, Zygomatico-orbital vessels.

Snayu Epicranial aponeurosis, temporal branch of facial nerve.

Asthi Frontal, zygomatic bones.

Sandhi Fronto-zygomatic suture.

So *Apanga marma*, overlies the lateral orbital rim, zygomaticofrontal and zygomaticotemporal sutures and the anterior aspect of the superficial temporal fossa, structures whose fracture commonly propagate posteromedially toward the optic canal and anterior clinoid process, precisely as demonstrated on this patient's imaging. The optic canal transmits the ophthalmic artery, its branches and the optic nerve, which courses through the posterior orbital apex. Consequently, contusive forces transmitted through the zygomaticomaxillary complex may produce indirect traumatic optic neuropathy, even in the

absence of a radiologically evident optic canal fracture, through mechanisms including axonal shearing, contusion necrosis and microvascular ischemia of the optic nerve.

Andhya and Drishti-abhighata: *Andhya* indicates complete and often irreversible loss of vision (*chakshurindriya-nasha*), whereas *drishti-abhighata* denotes diminution, blurring or distortion of vision (*drishti vikruti*), that may or may not progress to complete blindness. These two outcomes mirror the clinical reality of indirect traumatic optic neuropathy, which likewise ranges from mild, reversible dimming of vision to complete, permanent blindness depending on the degree of axonal disruption, oedema and vascular compromise. *Apanga* is one of the *Vaikalyakara marmas*, injury to it produces a *vaikalya* or functional deformity as seen in this case.

Management of Traumatic optic neuropathy remains debated: Options include observation, high-dose corticosteroid therapy and surgical optic nerve decompression, with inconsistent outcomes and no single modality shown to be clearly superior.^[6] In the present case, the absence of a discrete optic canal fracture and bony impingement favoured conservative management with corticosteroids over decompressive surgery.

Beyond the individual case, this correlation illustrates the enduring clinical value of *marma vijñana* as a pattern-recognition framework: Centuries before cross-sectional imaging, Ayurvedic surgeons had identified this specific facial region as one where blunt injury carries a disproportionate risk of vision loss, a conclusion modern trauma epidemiology continues to support.^[6] Recognition of *Apanga marma* involvement of any impact centred below the eyebrow end and lateral to the canthus, should heighten clinical suspicion for optic nerve injury and prompt early ophthalmological and radiological assessment, even when initial CT of the head is unremarkable, as it was in this patient.

CONCLUSION

Blunt trauma centred over the *Apanga marma*, the lateral orbital–zygomatic region below the eyebrow lateral end, carries a well-founded risk of traumatic optic neuropathy, as illustrated by this case of a right ZMC fracture with intracanalicular optic nerve injury following a bus-door impact. Integrating the classical knowledge of *Apanga marma abhighata* with modern craniofacial trauma protocols may help clinicians anticipate occult optic nerve injury in ZMC fractures.

REFERENCES

1. Sushruta. Sushruta Samhita, Sharirasthana, Chapter 6, Verse 27 [Marma vibhaga sharira].
2. Chaudhary S, Gopal UB. Establishing the precise location of Apanga marma and defining its structural component through cadaveric study. J. Ayurveda Campus. 2023.
3. Vagbhata.
4. Kumaran AM, Sundar G, Chye LT. Traumatic optic neuropathy: a review. Craniomaxillofac Trauma Reconstr., 2015; 8(1): 31–41.
5. Urolagin SB, Kotrashetti SM, Kale TP, Balihallimath LJ. Traumatic optic neuropathy after maxillofacial trauma: a review of 8 cases. J. Oral Maxillofac. Surg., 2012; 70(5): 1123–30.
6. Warner N, Eggenberger E. Traumatic optic neuropathy: a review of the current literature. Curr. Opin. Ophthalmol., 2010; 21(6): 459–62.