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AYURVEDIC UNDERSTANDING AND MANAGEMENT OF ISOLATED SIXTH CRANIAL NERVE PALSY DUE TO GIANT ANEURYSM:A CASE REPORT

Ayurveda

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ABSTRACT

Isolated sixth cranial nerve palsy occurs due to the dysfunction of the nerve at any point from its transit in the pons to the lateral rectus muscle. The major causes of abducens nerve palsy are increased intracranial pressure, infections, uncontrolled diabetes, aneurysm etc.The etiology in this case is a giant aneurysm in the left cavernus ICA leading to compression of left abducens nerve resulting in binocular horizontal diplopia and restriction in the abduction of left eyeball. The case was diagnosed in Ayurveda considering the cause and the effect as Siragata Vata leading to Timira.The management was mainly focused on addressing the cause.Virechana followed by Yoga basthi along with murdhni taila was adopted in this case. There was significant improvement in the movement of left eye ball towards the left lateral side and diplopia was completely absent at the time of discharge.

KEYWORDS

Abducens nerve palsy, Aneurysm, Diplopia, Siragata Vata

INTRODUCTION

The sixth cranial nerve, the abducens nerve is responsible for the ipsilateral abduction of the eyeball. It innervates the lateral rectus muscle of the eyeball.Abducens nerve palsy can occur to due the dysfunction of the nerve at any point form its transit i.e pons to the lateral rectus muscle.It starts from the pons and then traverses into the subarachnoid space and moves along the skull at the clivus.From there it reaches the base of the skull at the petrous apex of temporal bone and then into the cavernous sinus medially to the internal carotid artery.It enters the orbit via the superior orbital fissure and innervates the lateral rectus muscle.The various etiologies of abducens nerve palsy includes ischemic stroke,Wernnicke disease, increased intracranial pressure due to CSF accumulation, demyelinating lesions of the nerve, aneurysm, infections etc.

Uncontrolled Diabetes mellitus is a major risk factor of abducen nerve palsy.The patient presents with binocular horizontal diplopia, difficulty in abduction of the affected eye, headache and nausea in case of raised ICP. According to modern science the treatment for abducens nerve palsy depends on the cause. In case of infection and inflammation, corticosteroids will be administered. In case of raised intracranial pressure due to CSF accumulation, lumbar puncture will be done and methods to reduce the raised pressure will be adopted.[1] In Ayurveda diplopia is a symptom observed in dwitheeya patalagata timira by Aacharya Vagbhata and Triteeya Patagata timira by Acharya Susruta.[2]

In this case the patient was diagnosed with isolated left sixth cranial nerve palsy due to a giant aneurysm in the cerebral cortex. So by considering both the cause and the effect the case was diagnosed as siragata vata(Gaint Aneurysm) leading to Timira (Binocular Horizontal Diplopia).The management in the case was mainly focused on the cause i.e aneurysm, thereby reversing the pathology.

Case Report:

A 70 year old female patient with OPD Reg No 6488/22 and IP Reg No 420/23 who is a k/c/o Essential Hypertension approached the OPD department of Sri Jayendra Saraswathi Ayurveda College and Hospital on 09.03.23 with the complaints of difficulty in abduction of the left eyeball and binocular horizontal diplopia since 9 months.The patient who was well before 9 months suddenly developed severe headache and double vision with diifculty in abduction of the left eyeball.

She was immediately taken to a nearby super speciaility hospital and upon examination it was diagnosed as isolated idiopathic left sixth cranial nerve palsy. Her BP during the time of hospital admission was 180/110 mm Hg.MRI brain was advised and it revealed the presence of a Giant aneurysm originating from left cavernous ICA measuring 1.7 *13 cm, increase in AP diameter of both globes, right AP diameter 2.8cm and left AP diameter 2.7 cm, thinning of both optic nerve, medial deviation of left globe, thinning of LR muscle due to denervation atrophy.

She was advised for elective surgery and antihypertensives were given to prevent further complication.But the patient was unwilling to go for surgery fearing the complications and was continuing the antihypertensives. With the administration of antihypertensives headache was completely relieved and mild improvement was there in diplopia. But there was significant restriction in abducting the left eyeball. So the patient was brought to our OPD on 09.03.23 with the c/o binocular horizontal diplopia (left eye) in left lateral gaze and restriction of the abduction of left eyeball for further management.

EXAMINATION:

General examination:

BP :140/90 mm Hg
Pulse :84/min
Respiratory rate:16/min
Temperature:98.6 degree F
Appetite: Normal
Bowel: Regular
Micturition: Regular
Sleep:Sound.

CNS Examination

HMF intact
Abducens nerve (left) – restriction of lateral movement (abduction)
No sensory and motor deficits
Pupils: Round, Regular, Reacting to light, No afferent pupillary defect
Horizontal diplopia which increases in left lateral gaze
H/O HTN under regular medication -Amlong 2.5 mg BD after food
Not a K/C/O Diabetes Mellitus

Investigations:

- MRI BRAIN

Giant aneurysm originating from left cavernous ICA measuring 1.7 *13 cm, increase in AP diameter of both globes, right AP diameter 2.8cm and left AP diameter 2.7 cm, thinning of both optic nerve, medial deviation of left globe, thinning of LR muscle due to denervation atrophy.

- FBS : 150 mg/dl
- PPBS: 256 mg/dl
- HbA1C – 6.6 %
- ESR :10 mm/hr
- Hb:12%

Diagnosis:

Radiological, Laboratory and clinical – Siragata Vata resulting in Timira. (Isolated left sixth cranial nerve palsy due to Giant Aneurysm) with Madhumeha (Type 2 Diabetes Mellitus)

Management:

Table 1 (IP treatment details)

Sr No	Date	Treatments	Observations
1	10.03.23	• Sadyovirechana with Nimbamrutadi Eranda tailam 40 ml with 60 ml ksheera in empty stomach	• 9 vegas • Patient was stable with no new complaints

2	11.03.23 – 20.03.23	• Shiro dhara with Ksheerabala tailam	• Reduction in Blood pressure – 130/90 mm Hg from 6th day onwards. • Pt was able to move the left eye ball to lateral side from 5th day onwards. • At the end of treatment range of left eye abduction improved significantly(almost 90%) • Diplopia was completely subsided.
3	11.03.23 – 20.03.23	• Shiro talam with Ksheeraba tailam and Kachuradi Churnam	• No diplopia at the end of the treatment. • Sleep quality improved. • Reduction in blood pressure at the end of treatment (130/80 mm Hg)
4	11.03.23 - 18.03.23	• Yoga basthi schedule • Niruha basthi – Ksheera Basthi (modified) • Balamoola ksheerapaka -200 ml • Kalkam – Manjishta – 30 gms • Honey -50 ml • Maha Narayana Tailam – 100 ml • Triphala Ghritam – 100 ml • Anuvasana basthi – Maha Narayana Tailam -30ml +Triphala Ghritam 30 ml	• Significant improvement in left eyeball movement. • Diplopia was completely relieved. • Significant reduction in Blood pressure - 130/80 mm hg

Oral medications: (11.03.23 - 20.03.23)

Oral medications were started from second day of admission after Sadyo Virechana.

- Balaguluchyadi Kashayam – 20ml -0-20 ml with 60 ml boiled and cooled water before food
- Kaishora guggulu – 2-0-2 with kashayam
- Punarnavasavam +Balarishtam – 10 ml each morning and night after food
- Chandraprabha Vati – 1-1-1 A/F
- Ksheerabala Capsule – 1-0-1 A/F
- Triphala churnam – 1 tsp at bedtime with ½ glass warm water

Discharge Medications: (for 1 month)

- Jeevanthyadi ghritam – 10ml -0- 0 after breakfast
- Cap Palsineuron – 1-0-1 A/F
- Shadbindhu tailam – 2 drops in each nostril for Pratimarsha Nasyam in the evening
- Chandraprabha Vati – 1-1-1 A/F
- Triphala churnam – 1 tsp at bedtime with ½ glass warm water
- Shiro talam with Ksheerabala tailam + Kachuradi Churnam in the evening.
- Nadi Shuddhi Pranayama and Meditation were also advised along with discharge medicines to maintain the blood pressure in normal level.

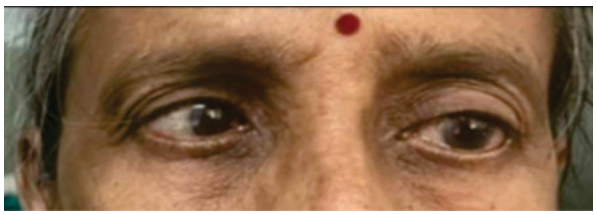
Outcome of the treatment:

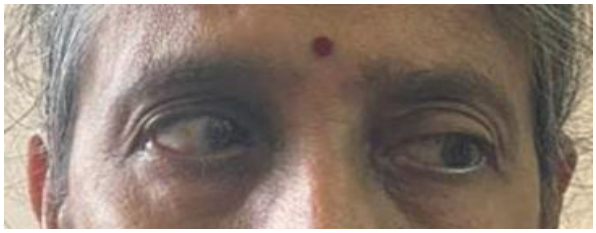
- Absence of diplopia
- Significant reduction in hypertension (Grade 2 to Grade 1)
- Restriction in the abduction of left eyeball was reduced by almost 90%

DISCUSSION:

The present case of left sixth cranial nerve palsy was diagnosed in ayurveda based on the clinical,laboratory and radiological findings of the patient.The cause in this case is gaint Aneurysm of ICA. Anerusym is the abnormal dilatation of arteries.In ayurveda it can be diagnosed under the spectrum of *Sira gata vata* due to the lakshana i.e *sira adhmanam*.[3]Here the aneurysm of ICA has resulted in the compression of sixth cranial nerve leading to paralysis of lateral rectus muscle.The Lateral rectus paralysis resulted in binocular horizontal diplopia of left eye.Diplopia as a symptom is mentioned under the *dwitheeya patala gata dosha dushti (timira)* as per *Vagbhata* and *Triteeya patalagata dosha dushti (timira)* as per Susruta.The cause of aneurysm is hypertension in this case.The *dosha avastha* in this case is *vyana vata prakopa* in *rakta vaha srotas* at *mastulunga majja*.The nature of *vata prakopa* is *"vyasa"* i.e abnormal dialatation.[4]The *nidanas* in the patient include excess and frequent intake of *vatakara aaharas* and *atisevana* and *nityasevana* of *katu amla lavana rasas*.From the history it was understood that *Manasika bhavas* like *krodha shoka* and *bhaya* were also found to be increased in the patient.The *aharaja* and *manasika nidanas* cause *vayana vata dushti* in *rakta vaha srotas* leading to hypertension and formation of aneurysm.*Kha vaigunyata* was present in the *raktavaha srotas* (ICA) and on frequent exposure of the *aharaja* and *manasika nidanas* resulted in *sroto dushti i.e sira dourbalya* in ICA at cerebral cortex.There was also considerable amount of *mamsa dhatu kshaya* (denervation atrophy).The treatment protocol was mainly planned to address the cause i.e Aneurysm.

Hence considering the vata *dushti* in rakta vaha *srotas* with mild *pittanubandha brumhana chikitsa(sheetabrumhanam*) was planned.Before starting *murdhini chikitsa, kaya shodhanam* was done through *sadyo virechanam* with *Nimbamrutadi eranda taila* and *ksheeram*.*Snigdha virechanam* was advised considering the major role of *vata* as the *anubandhi dosha* and *pitta* as the *anubandha dosha* in the *sampraptht*.*Ksheera* was selected as *anupanam c*onsidering the *pitta sthana i.e raktavaha srotas*.*Shiro dhara* and *shiro talam* with *ksheerabala tailam* were administered. *Ksheerabala* mentioned in the context of *vata rakta* is having *sheeta brumhana swabhava* which helps in pacifying the *vata* with *pittanubandha.*Moreover it is *jeevanam,brumhanam* and *balyam*.[5]Here in this case there is *sira dourbalyam* at artery level and cranial nerve level.Hence *ksheerabala* was rationally selected for the purpose of *shirodhara* and *shiro talam*.Both *shiro dhara* and *shiro talam* helped in reducing the hypertension also.Due to the involvement of *rakta* and *mamsa dhatus* in the *sampapthi, yoga basthi* was scheduled.*Ksheera basthi* was administered for the purpose of *brumhana* and it is *balakrut* in nature.Here in this case *balamoola ksheerapaka* was used due to its *vatapittahara* and *balya swabhava*.*Manjishta* was used as *kalka* by considering the *anubandha dohsa pitta* and the *sthana i.e raktavha srotas*.*Mahanarayana tailam* and *Triphala ghrita* were used as *Sneha dravys*.*Triphala ghrita* was judiciously preferred for *vyadhi pratyaneeka chikitsa* due to the *vyakta sthana* in the *vyadhi i.e Netra.*





CONCLUSION:

Giant Aneurysm in left cavernous ICA is the cause of isolated sixth cranial nerve palsy in this case.Aneurysm can be understood under the spectrum of *Siragata vata* in *Ayurveda* with *vyasa* type of *prakopa*.Aneurysm has resulted in binocular horizontal diplopia. Diplopia is mentioned as a *lakshanam* in *dwitheeya /triteeya patal gata dosha dushti i.e timira*.The final diagnosis was *siragata vata* with *timira*.*Aavastha* was understood as *Vyanavata prakopa* at *raktvaha srotas* leading to *sira dourbalya* and also at the level of Netra leading to restricted abduction of left eye.The management was mainly focused

on addressing the cause.*Brumhana chikitsa* was adopted in this case by considering *pitta* as the *anubandha dosha.Virechana* followed by *basthi* along with *murdhni taila* were administered.Signifcant improvement were observed in the movement of left eye ball, reduction in blood pressure and diplopia was completely relieved at the end of the treatment.

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