

AYURVEDIC UNDERSTANDING AND MANAGEMENT OF GUILLAIN BARRE SYNDROME - A CASE REPORT

Kannan Sagar¹, Shailaja.U², Anoop AS³, Reshma K Raj⁴, Nayan Kumar S⁵

¹Assistant Professor, ²Professor & H.O.D, ⁵Associate Professor, ⁴Post Graduate Scholar, Department of Kaumarabhritya, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka, India

³Assistant Professor, Department of Kaumarabhritya, Sri Jayendra Saraswathi Ayurveda College, Nazarathpettai, Chennai, Tamil Nadu, India

Email: kannansagar@gmail.com

ABSTRACT

Guillain Barre Syndrome or Acute inflammatory demyelinating polyradiculopathy is a post infectious autoimmune peripheral neuropathy which can occur by about ten days after a respiratory or gastrointestinal infection. This disease can occur in people of all age groups and it is considered as the most common cause of acute flaccid paralysis in children. Majority of the cases are seen in the age group of 5-12 years. The main symptoms include weakness that usually starts in the lower limbs and then progressively involves the trunk, upper limbs and lastly the bulbar muscles. This type of progression is known as Ascending Paralysis. Onset is usually gradual and it will progress over days or even weeks. Tenderness and pain in the muscles are quite common. Child may be irritable and may be having inability to walk or may even refuses to walk. A six and half year old male patient was admitted to S.D.M College of Ayurveda and Hospital, Hassan, Karnataka with the confirmed diagnosis of Guillain Barre Syndrome. The main complaints were difficulty in walking, pain in the lower limbs associated with weakness in muscles of legs. He was little irritable, not allowing anyone to touch his lower limbs because of pain and even cannot stand for long. He required assistance for all activities of daily living. GB Syndrome can be understood in Ayurveda by different ways depending on the *Nidana* and *Samprapti*. It is basically understood as *Gata-vata* or even *Avarana* in different *Dhatu*s depending on the etiopathogenesis of the particular case. In the present case, it has been diagnosed as *Amavisha* leading to *Tridoshaprakopa* which includes *Gatavata* mainly on *Rasa Rakta Mamsa Medas Sira* and *Majja dhatu*s.

Keywords: Guillain Barre Syndrome, *Gatavata*, *Brimhana*, *Rasayana*.

INTRODUCTION

Guillain-Barre Syndrome is applicable to any nonspecific viral infection/inflammatory disorder of peripheral nerves and nerve roots characterized by symmetrical muscle weakness, sluggish or absent tendon reflexes, paresthesia or other sensory disturbances and

autonomic dysfunction. Majority of the cases are seen in the age group of 5-12 years¹. In 1859, Landry described this illness as an acute inflammatory demyelinating polyneuropathy (AIDP). In 1916, Guillain-Barre and Strohl reported the characteristic CSF find-

ings of Albumin-cytological dissociation². GBS is characterized by symmetrical ascending paralysis with some sensory loss in majority of the instances. When there is involvement of respiratory muscles, then it is considered as fatal. As an important feature, typical cytoalbuminous dissociation in the cerebrospinal fluid can be seen³.

It is a post infectious polyneuropathy that causes demyelination in mainly motor but sometimes even in sensory nerves. It is not a hereditary disease. It affects people of all age groups⁴. It is one of the common cause of acute flaccid paralysis (AFP) in children. About two-thirds patients have an antecedent upper respiratory or gastrointestinal infection about one to six weeks prior to the onset of symptoms⁵. Hence, it is an acute onset flaccid paralysis, the disease characterized by the classical triad of progressive lower motor neuron weakness, areflexia and elevated CSF protein without pleocytosis⁶.

The main symptoms include weakness that usually starts in the lower limbs and then progressively involves the trunk, upper limbs and lastly the bulbar muscles. This type of progression is also known by the name Ascending Paralysis. Usually the onset is gradual and which will progress over days or even weeks. Presence of tenderness and pain in the muscles are quite common. Child may be irritable and may be unable to walk and may even refuses to walk. Papilledema is seen in few cases. In some cases, there will be even respiratory insufficiency. There is even urinary incontinence or retention of urine found in some cases⁷. Main signs includes lost tendon reflexes, usually early in the course with an evident LMN paralysis. Cardiac rate may be fluctuating in them. Involvement of Autonomic Nervous System is also evident. Usually the clinical course is benign and a spontaneous recover starts within a period of two to three weeks. Most of them regain full muscle power and a few may have a residual weakness⁸.

Those children who are in the early stages of this disease should be admitted to the hospital. While those with moderate, severe or rapidly progressive weakness has to be cared for in an Intensive care unit. Pulmonary and cardiac functions also have to be regularly

monitored. This illness usually resolves spontaneously, albeit slowly; 80% of them recover normal function within 1 to 12 months, while 20% of the patients are left with mild to moderate residual weakness⁹.

Vayu gets aggravated in two ways. One is by *Dhathukshaya* (diminution of tissue elements) and second by *Margavarodha* (occlusion of its channels of circulation)¹⁰. In *Rakthagatavata*, when there is an aggravation of *Vayu* in the blood, give rise to *Theevraruja* (Acute Pain), *Sasanthapa* (Burning sensation), *Vaivarnya* (Discolouration), *Krishatha* (Emaciation), *Aruchi* (anorexia), *Gatre cha arumshi* (appearance of rashes on the body) and *Bhukthasyasthambha* (Stiffness of the body after taking food)¹¹. In *Asthi* and *Majjagatavata*, when there is aggravation of *Vayu* in bones and bone marrow, give rise to *Bhedoasthiparvanam* (Cracking of bones and joints), *Sandhishula* (Piercing pain in joints), *Mamsabalakshaya* (Diminution of muscle tissue and strength), *Aswapna* (Insomnia) and *Santhatharuk* (Constant Pain)¹². In *Mamsa* and *Medogatavata*, when there is aggravation of *Vayu* in the muscles and fat tissues, it gives rise to *Guruanga* (heaviness of the body), *Tudhyateathartham* (excessive pain in the body), *Dandamushtihathamtatha* (as if the person had been beaten with a staff or with fist-cuffs) and *Sarukshramithamatyartha* (excessive fatigue along with pain)¹³. In *Snayugatavata*, when there is aggravation of *Vayu* in the *Snayu* (nerves and ligaments), gives rise to *Bahyabhyantharamayamam* (Ophisthotonus and Emprosthotonus), *Khalli* (neuralgic pain in feet, shoulders etc), *Kubjathvameva* (Hunch back) and *Sarvangaekangarogamscha* (*Vatika* diseases pertaining to the entire body or a part)¹⁴.

CASE HISTORY:

1. This child was apparently well before 10 days. Then, he was given with an Injection as a part of vaccination and after which, he developed slight fever and weakness of lower limbs and difficulty in walking. Started with slight pain in the lower limbs and daily pain started aggravating.

2. Later, 3 days after the incident this child was taken to a hospital in Bengaluru and consulted a Pediatric Neurologist, detailed evaluation was done there and diagnosed as Guillain Barre Syndrome. There they have started with medications and advised for physiotherapy.

3. They have followed the advices and pain has reduced little bit and fever and cold has reduced. Also, child was able to sit in a place with the support of parents, but pain was still persisting. Child started becoming more irritable and not allowing anyone to touch his lower limbs and presented with a difficulty in walking and hesitant to try for standing and walking.

4. So, the Parents have consulted the hospital in Bengaluru once again and the doctors have suggested them to get better treatment done and they have decided to consult in SDM College of Ayurveda and Hospital, Hassan.

5. The child was brought with complaints of difficulty in walking, pain in the lower limbs associated with weakness in muscles of legs. He was little irritable, not allowing anyone to touch his lower limbs because of pain and even cannot stand for long. He required assistance for all activities of daily living. After a detailed interrogation with parents and a thorough examination and proper evaluation, the child was admitted in SDM Ayurveda Hospital.

ON EXAMINATION:

Table 1: Muscle Power before treatment:

Side	Lower Limb
Left	1/5
Right	1/5

Table 2: Muscle reflex before treatment:

Reflex	Left	Right
Knee Jerk	0	0
Ankle Jerk	0	0

On Examination (Bilateral Lower limbs):

Deep tendon reflex -absent

Babinski-plantar

Muscle tone- Grade 0

Muscle Power- 1/5

Clonus ++

Movements: Active- not possible, Passive-decreased resistance (hypotonia)

Pain was present during the flexion and extension of bilateral lower limbs.

Muscle bulk-no any wasting

Table 3: Muscle bulk before treatment:

Muscle bulk	Left	Right
Thigh	33cm	33cm
Calf	25cm	25cm

TREATMENTS GIVEN:

External treatments:

1. Sarvanga Parisheka with Dashamoola Eranda Kwatha- from first day to 18th day.
2. Lepana with MarmaniVati + DashangaLepa (BD)- from 1st day to 18th day.
3. Sarvanga Abhyanga with Mahamasha thaila from 8th day to 18th day.
4. Yoga Basthi (8)-(3N & 5A): From 5th day to 13th day.
5. Niruha Basthi with Manjishtadi Kashaya Basthi (180ml)
6. Anuvasana Basthi with Sahacharadi thaila (25ml) + PanchathikthaGuggulughrita(20ml): Total-45ml
7. Matra Basthi with Sahacharadi Thaila(15ml) + PanchathikthakaGuggulughrita(15ml): Total - 30ml from 14th to 18th day.

Internal Medications:

1. Ksheerapaka with a powder combination of Aswagandha+Yashtimadhu+Kapikachu 30ml BD
2. Aswagandha Leha 1tsp BD B/F
3. Tab.Kaishora Guggulu (1BD) A/F
4. Tab.Kamaduga Mukta (1BD) A/F
5. Mahamanjishtadi Kashaya + Sahacharadi Kashaya (7.5ml BD with 20ml luke warm water) B/F
6. Nimbamritadi Eranda (1tsp HS) with luke warm water.

ADVISE AT THE TIME OF DISCHARGE:

1. Abhyanga with Mahamasha thaila
2. Cap.Balamoola (1BD) B/F
3. Tab.Kaishora Guggulu (1BD)A/F

4. Tab. Kumarabharana Rasa (1 BD) with honey B/F
5. Mahamanjishtadi Kashaya + Sahacharadi Kashaya (7.5ml BD with 20ml luke warm water) B/F
6. Aswagandha Leha 1tsp BD B/F with luke warm milk

OUTCOME OF THE TREATMENTS:

Patient and Care taker's Feedback:

1. Generalized weakness of lower limbs has reduced.
2. Initially, pain in the lower limbs has reduced comparatively well than what was there before treatment.
3. Pain has totally reduced after the completion of 10 days of treatment.
4. Weakness of muscles of lower limbs has reduced.
5. Was able to stand for long after the completion of 4 days of treatment.
6. Was able to walk few steps with the support of parents from 6th day of initiation of treatment.
7. Was able to walk more distance with parent's support from 10th day of treatment.
8. Was walking well without any difficulty or pain for a greater distance by the completion of 18th day.
9. Crying, Irritability and not allowing anyone to touch his lower limbs due to severe pain during the time of admission has very well reduced by 5th day.
10. He was very cooperative, friendly and started liking for playing with sibling and other friends by 1 week of treatment.
11. The lower limbs which were kept still due to pain were easily moved by himself while sitting in bed and in his chair during playing and taking food etc.
12. Appetite has improved.
13. Overall health status has improved.

Clinician assessed outcomes:

1. Muscle tone of lower limbs has improved to Grade 1+
2. Muscle power of B/L lower limbs has improved to 2/5.

3. There were no any significant changes noted in the superficial reflexes.
4. Easy movements of B/L lower limbs were possible. This child used to keep both his legs close and together without trying for any movements, slowly started with moving limbs while sitting in bed and chair, to fast movements during sitting postures for play activities etc.
5. Muscle bulk remained the same.
6. Pain present during flexion and extension of B/L lower limbs has totally reduced.
7. Deep tendon reflexes has improved to +.
8. Generalized weakness of the lower limbs present initially has reduced considerably well.
9. Child was irritable; crying continuously during examination at the outset, due to pain has improved a lot by the total reduction in pain.
10. Child has started standing with support, duration of standing increased, started walking few steps with parent's support; distance increased gradually and at discharge was easily walking still a long distance when compared to previous.
11. Initially the child was not interacting with his sibling also, and not at all interested in playing etc has changed a lot and started talking well to everyone, playing with friends and sibling, smiles and enjoys fun.
12. Overall general health status has improved and appetite has improved.

DISCUSSION

In the present case, there was a history of vaccination followed by fever and weakness of both the lower extremities. Here, vaccination triggers the immunological response on peripheral nerves in the lower limbs which resulted in the manifestation of signs and symptoms. Vaccination which contains the antigens in the milder form can be understood as *Amavisha* in this context as it provoked the immunological response. The *Amavisha* results in the *Tridoshaprakopa* in different *Dhatus*. Initially it vitiated the *Rasa* and *Rakta dhatu*. In the *Rasa dhatu Vataprakopa* mainly resulted in *Angamarda* (lower-limbs), *Pitta prakopa* leads to *Jwara* and *Kaphaprakopa* resulted in *Gaurava*. In the

Rakta dhatu, there is mainly *Vata pitta prakopa* which affected the *Sira* and *Kandara*. *Rukshagunavriddhi* of *Vata* along with *Teekshna*, *Ushnagunavriddhi* of *Pitta* in *Sira* resulted in the demyelination of peripheral motor nerves and *Rukshagunavriddhi* of *Vata* in *Kandara* resulted in areflexia of the deep tendons and *Vataprakopain Rakta dhatu* as such resulted in *Raktagatavatalakshana* i.e. *Teevraruja* (tenderness of lower limbs). In the *Mamsa dhatu*, there is *Kaphavataprakopa* which resulted in *Mamsagatavatalakshanas* like *Guruta*, *Toda* and *Guru mandagunavriddhi* of *Kapha* caused flaccid paralysis of lower extremities. In the *Medo dhatu* there is *Vataprakopa* in its *Upadhatu* i.e. *Snayu* which resulted in *Snayugatavatalakshana* i.e. *Pangu*. In *Majja dhatu* there is *Vyanavataprakopa* which resulted in *Majjagatavatalakshana* i.e. *Teevralakshaya* in *Adhoshaaka*. Hence, this case can be understood in two phases i.e. formation of *Amavisha* further leading to *Tridoshaprakopa* in *Rasa rakta dhatu*s and *Gatavata* pathogenesis in *Rakta*, *Mamsa*, *Meda*, *Snayu* and *Majja dhatu*. The treatment was planned in two phases. The initial phase the treatment was focussed on *Amapachana* and *Agni deepana* at *Koshta*, *Rasa* and *Rakta dhatu* level. For correcting the *Amavisha* in *Koshta*, *Rasa* and *Rakta* level, *Kamaduga* with *Mukta* was administered internally which is basically *Amapacha* and *Pittashamanain* nature. *Kaishoraguggulu* was administered with the purpose of *Amapachana* and *Raktaprasadana*. *Nimbamrutadierandataila* was administered to pacify *Vata* and *Pitta prakopa* in *Rasa* and *Rakta dhatu*s and also to provide *Raktaprasadana* and *Apana vata anulomana* as there was *Adha kaya balakshaya*. Moreover, *Nimbamrutadierandataila* does *Virechana* which is the *Chikitsa* for *Raktagatavata*. *Sahachardikashaya* along with *Mahamanjishtadi kashaya* was given internally to with the purpose of *Raktaprasadana* and *Vata anulomana*. Externally *Kashaya dhara* was administered as *Swedana* as there was *Pitta samsrushtavata* in *Rasa* and *Rakta dhatu*s. As there was *Vatakaphaprakopa* in *Mamsa dhatu*, *Dashangalepa* with *Marmanivati* was applied as *Lepa*. It also did *Amapachana* in the *Mamsa dhatu*. *Bahyabrimhanachikitsa* in the form of *Abhyanga* was administered with *Mahamashataila* to

treat the *Majjagatavata dosha* and it helped in increasing the power of the lower extremities and fastened the formation of myelin sheaths in the peripheral nerves of lower extremities. Internally *Brimhana* was done with *Aswagandhaleha* and *Ksheerapaka*. For treating the *Vataprakopa* in *Majja dhatu*. *Yoga basthi* was planned. *Niruhabasthi* was given with *Mahamanjishtadi kashaya* with the aim of providing *Bala* to the *Sira* and *Anuvasanabasthi* was done with *Sahacharditaila* and *Panchatiktakaguggulughrita* to normalize the *Majjagatavata dosha*. *Brimhanaoushadhis* such as *Bala moola capsule*, *Kumarabharana rasa* and *Aswagandha leha* were advised at the time of discharge to pacify the *Kevalavatadosha*.

CONCLUSION

Guillain Barre Syndrome can be understood in Ayurveda in different ways depending on the *Nidana*, *Samprapti* and *Lakshana*. In the present case, the disease progresses in two stages – initially *Amavisha* further leading to *Tridoshaprakopa* in *Rasa*, *Rakta*, *Mamsa*, *Medas*, *Sira* and *Majja dhatu* at different phases. Treatment was planned in two stages –initially *Amavishachikitsa* in the form of *Amapachana* and *Kapha pitta shaman* a followed by *Kevalavatika-chikitsa*. Significant changes were observed on both subjective and objective parameters after the course of treatment. Hence, Guillain Barre Syndrome can be effectively managed in Ayurveda with the proper understanding of *Nidana*, *Samprapti* and *Dhatu dushtilakshanas*.

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