



CASE REPORT

A CASE REPORT ON AYURVEDIC MANAGEMENT OF SATURDAY NIGHT PALSY

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Abstract

Saturday night palsy is a compressive neuropathy of the radial nerve that occurs from prolonged, direct pressure caused by an object or surface in the upper medial arm or axilla. The radial nerve comprises of C5 to T1 nerve roots, which originates from the posterior part of the brachial nerve plexus. As the name implies, Saturday night palsy arises from the connection between Saturday night partying and the ensuing stupor. Typically, this involves an individual falling asleep with the arm hanging over a chair or other hard surface which can result in protracted period of immobilization during which nerve compression can take place. The result of this compression is a nerve palsy that impairs motor and sensory function. In the present case, a 52-year-old male patient came to our OPD with reduced strength in the right hand associated with dull pain and numbness. On physical examination, the patient presents with a characteristic wrist drop and an inability to extend the wrist and fingers. Based on the symptoms, the condition can be correlated as *Ekanga vata* and treated accordingly. Modern medicine mostly focuses on physical rehabilitation, systemic corticosteroids, nonsteroidal anti-inflammatory medicines (NSAIDs), and steroid injections. In the case of severe radial nerve damage, surgical intervention is employed. Recovery is universal by about 6 months. But here, with Ayurvedic treatment modalities only, complete recovery was obtained within 12 days of treatment which was found to be a speedy recovery.

Introduction

Saturday night palsy is a compressive neuropathy of the radial nerve that can be caused by prolonged, direct pressure from an object or surface on the upper medial arm or axilla. The posterior segment of the brachial nerve plexus gives rise to the C5 to T1 nerve roots, which comprise the radial nerve. The radial nerve initially runs deep to the axillary artery, and in the spiral groove, it winds around the proximal humerus, proceeds down the lateral arm, and enters the forearm dividing into superficial nerve and posterior interosseus nerve.¹

Complete proximal radial nerve lesion causes paralysis of the

brachioradialis muscle resulting into the paralysis of extension and flexion of the elbow with the forearm midway between pronation and supination, extension of the wrist and fingers, and extension and abduction of the thumb in the plane of the palm. If the lesion is confined to the posterior interosseous nerve, extensors of the wrist and fingers are only affected. Sensation can be impaired in the posterior aspect of the forearm and a small area on the radial aspect of dorsum of hand. The radial nerve, often compressed in the axilla ("crutch" palsy), also can be injured at a lower point around the humerus, due to pressure palsies and humerus fractures.²

As the name implies, Saturday night palsy arises from the connection between Saturday night partying and the ensuing stupor. Typically, this involves an individual falling asleep with the arm hanging over a chair or other hard surface which can result in protracted period of immobilization during which nerve compression can take place. Drunk people might not be able to adjust their position reflexively when they're asleep. This compression causes a nerve palsy that affects motor and sensory function. Reports indicate that the prevalence of Saturday night palsy is extremely high, affecting 2.97 per 100,000 males and 1.42 per 100,000 women. In the US, it ranks as the fourth most common mononeuropathy, and it is also rather widespread elsewhere.³ This is not age-specific, because of the mechanism of injury.

Numbness, weakness, tingling, pain, or any combination of these are the signs and symptoms. On physical examination, a typical wrist drop is observed, which is attributed to the loss of extensor muscle function mediated by the radial nerve branches and the retention of flexor muscle activity mediated by other nerves in the arm and hand. As a result, the wrist and fingers are unable to extend at the metacarpophalangeal joints. It is difficult to open the hand and grab objects when the thumb cannot be extended. As proximal and distal interphalangeal joints are controlled by the ulnar nerve, patients are however able to extend their fingers at these levels. Additionally, patients may have loss of the triceps reflex, which is controlled by innervation of the radial nerve.⁴ The first and second metacarpals of the thumb, the index and middle fingers, as well as a small area on the posterior radial surface of the hand are the most common sites of mild sensory loss associated with radial nerve injuries.⁵

Many individuals who have a clear history and physical examination may not need additional diagnostic testing since Saturday night palsy is primarily diagnosed clinically. Further diagnostic methods may be beneficial for assessing potential causes and problems, determining complications, and prognosis. Electromyography and nerve

conduction examinations can be used to localize lesions anatomically and to differentiate between brachial plexopathies, cervical radiculopathies, and peripheral neuropathies. A low-risk, low-cost technique that can help visualize the nerve and identify areas of disruption or injury is ultrasound. In circumstances when there is a clear disruption of the nerve, this can be very helpful in identifying the condition early and expediting treatment.

Differential diagnosis is broad and encompasses many different processes that might cause compression of the radial nerve. This includes iatrogenic reasons, internal compression from developing cysts, masses, tumors, muscular hypertrophy, and fibrinous tissue can induce nerve palsy. Traumatic causes include severe physical trauma, crush injuries, puncture wounds, stab wounds, and anterior glenohumeral shoulder dislocation. Rarely, isolated nerve palsy can be caused by neurologic diseases and repetitive overuse.⁶

The severity and duration of compression determine the severity of the injury, which in turn determines the prognosis for Saturday night palsy. Neuropraxia is the result of mild damage, while full recovery is the outcome of a temporary conduction block without nerve degeneration. Axonotmesis, which is characterized by Wallerian degeneration and axonal damage with a possible incomplete or delayed recovery, is the outcome of moderate injury. Neurotmesis, severe damage results in complete axon degradation and Schwann cell death with a low chance of full recovery. Severe injury causes neurotmesis, which is characterized by total axon degeneration and Schwann cell death with a poor prognosis. Surgery is required for an injury of this severity. Recovery is not quick; even mild cases might take as long as two to four months to resolve, and often much longer.⁷

In the present case, a 52-year-old male patient came to our OPD with chief complaints of weakness in the right hand with an inability to extend the wrist and fingers and was diagnosed as Saturday night palsy after a detailed physical and clinical examination. With Ayurvedic treatment modalities only, complete recovery was obtained within 12 days of treatment which was found to be a speedy recovery.

CASE REPORT

A 52-year-old moderately built male patient with, a known case of hypertension and diabetes mellitus, working as a painter for 14 years came to our OPD with chief complaints of weakness of the right hand with inability to extend the wrist and fingers at the level of metacarpophalangeal joints associated with numbness and heaviness. Patient also

complained of a sensory deficit in the dorsum of the hand. He had too many drinks on the last night and felt asleep on a chair in an uncomfortable position with his arm draped over the edge of the chair. When he woke up, he felt weakness of his right hand and was not able to open the door as well as the valve of the tap. The patient tried to do some exercises to reduce the symptoms but his arm remained quite flaccid to extension even after 4 hours. Thus, he came to our hospital for further management.

ON EXAMINATION:

1. Wrist joint examination

Inspection -

- No muscle wasting.
- No swelling and discolouration.

Palpation -

- No tenderness in wrist joint.

Range of movement

- Wrist drop; Patient was unable to extend the wrist and fingers at the level of metacarpophalangeal joints.
- Patient was able to do flexion.

2. Motor system examination-

Gait, speech, and cranial nerve examination were normal.

Motor examination of the left hand is normal.

Motor examination of right arm:

Power testing of the right hand is done using Medical Research Council (MRC) Grading.⁸

Table 1 – Examination findings of muscle power on first visit

MUSCLE (RIGHT ARM)	POWER GRADE
Deltoid	5
Biceps	5
Triceps	5
Brachioradialis	5
Wrist extension	1
Wrist flexion	2
Thumb extension	1
Thumb flexion	2
Finger extension	1
Finger flexion	2
Supinator	3
Pronator teres	5

Hand grip – 1

Reflexes were normal.

3. Sensory system examination –

	RIGHT ARM	LEFT ARM
Light touch	Reduced on posterior aspect	Normal
Pin prick sensation	Reduced in radial three digits and dorsal aspect	Normal
Temperature	Difficulty in differentiating hot and cold in posterior forearm	Normal
Vibration	Decreased vibration sense at radial styloid process.	Normal
Proprioception	Intact	Intact

DIFFERENTIAL DIAGNOSIS:

Sl. No.	Disease	Clinical symptoms	Reason for inclusion/ exclusion
1	Carpel tunnel syndrome	Numbness, tingling and pain in thumb and second, third and radial portions of four digits. Symptoms worsen at night	Numbness is not only localised to these areas. Wrist drop was found. Phalen’s test and tinell’s sign was negative
3	Ulnar nerve palsy	Numbness and paraesthesia radiating distally to ulnar aspect of hand, fifth digit and ulnar aspect of fourth digit.	Numbness and paraesthesia was not only restricted to ulnar region
4	Cervical radiculopathy	Pain radiates down the upper limb of the ipsilateral side Muscle weakness	Spurling test was negative
5	Cervical myelopathy	Clumsiness of hand Limited ability to perform fine motor tasks Spastic gait and weakness	Clumsiness of hand and gait abnormalities was not found. Lhermitte ‘s sign was absent
6	Saturday night palsy	Wrist drop Difficulty with opening hand and grasping objects due to inability to extend thumb. Patient is able to do flexion Numbness and weakness of affected hand Sensory deficit in dorsal aspect of radial three and half digits.	Wrist drop was found Extension was affected but flexion was possible Numbness and weakness of hand present Sensory deficit was present in radial three digits and dorsal aspect. So, based on these clinical symptoms and history, diagnosed as Saturday night palsy.



Picture 1- Patient presenting with wrist drop on first visit

DIAGNOSIS-

Based on the Clinical history and Physical examination, the condition was diagnosed as Saturday night Palsy.

TREATMENT GIVEN:

Table 2- Treatment given on first visit

SI. No.	MEDICINES GIVEN	DOSAGE
1	<i>Punarnavadi Kashaya</i> + <i>Danadanayanadi Kashaya</i>	90ml-0-90ml before food
2	Tab. <i>Vettumaran</i>	1-0-1 with <i>kashayam</i>
3	After 3 days: <i>Maharajaprasarini thailam</i>	10 drops at night after food

Follow up after 7 days:

Patient was able to hold hand in horizontal plane.
Patient was able to do his daily activities.
Numbness over lateral aspect of the thumb persists.

Table 3- Muscle power examination on first and second visit

MUSCLES	POWER GRADE	
	FIRST VISIT	SECOND VISIT
Wrist extension	1	2
Wrist flexion	2	4
Thumb extension	1	2
Thumb flexion	2	3
Finger extension	1	2
Finger flexion	2	4
Supinator	3	4

Hand grip – 4



Picture 2- Patient able to hold hand in horizontal plane

MEDICINES GIVEN ON 7th DAY

Table 4-Treatment given on second visit

SI. No.	Medicines given	Dose
1	<i>Ashtavargam kashayam</i>	90 m bd bf
2	<i>Maharajaprasarini thailam</i>	10 drops at night Af
3	<i>Sathahwadi thailam</i>	External application

FOLLOW UP ON 12th DAY

Numbness relieved
Muscle strength regained
Patient was able to do all activities with his right hand.

Table 5- Shows muscle power of patient from first to third visit

MUSCLES	POWER GRADE		
	FIRST VISIT	SECOND VISIT	THIRD VISIT (12 th day)
Wrist extension	1	2	4
Wrist flexion	2	4	4
Thumb extension	1	2	4
Thumb flexion	2	3	4
Finger extension	1	2	4
Finger flexion	2	4	4
Supinator	3	4	4



Picture 3 – Patient was able to do complete extension

FOLLOW UP AFTER ONE MONTH

Patient was able to do all fine motor and gross motor movements with his right hand.

He was also able to continue his profession as a painter.



Picture 4 – Condition of the patient after one month

Discussion

Physical rehabilitation is the main emphasis of conventional medicine for Saturday night palsy. During physical therapy, the wrist is held in an extended position using a soft wrist splint. Nonsteroidal anti-inflammatory medicines (NSAIDs), systemic corticosteroids, steroid injections, the use of ultrasound to provide localized injections to expedite recovery, and surgical care in cases of severe radial nerve injury are among the many symptomatic therapies that are available. Neural grafting, nerve transfers, and tendon or muscle transfers are surgical alternatives. However, a variety of extra risks linked to intraoperative problems and post-surgical infections can arise with the majority of surgical operations. Long-term use of anti-inflammatory, analgesics and steroid injections can also cause adverse effects.⁹

On the basis of the symptoms, Saturday night palsy can be correlated as *Ekanga Vata*. *Ekanga vata* is mentioned in the context of *Pakshaghata*. The condition known as *pakshaghata* occurs when the exacerbated *vāyu* causes constriction of the vessels and ligaments, which results in the paralysis of one side of the body (either the left or the right). If, the above mentioned morbidity pervades the entire body, then the ailment is called

sarvānga-roga (paralysis of the entire body). When aggravated *vāyu* affect, either of one leg or one hand along with weakness, then the ailment is called *ekānga-roga* (monoplegia).¹⁰

Dhathukshaya and *avarana* are the causes of aggravation of *vata dosha* that further vitiates *srotas* and affects the physiological movements of biological elements.¹¹ This patient is presented with symptoms like weakness, numbness and heaviness of the affected hand. These symptoms can be seen in the *lakshana's* of *kaphavrutha vata*, *kaphavrutha udana* and *kaphavrutha vyana*.¹² Considering all these facts, *Kaphavataghna*, followed by *kevala vata* treatment was adopted in this condition.

In the initial stage, considering the *Avarana* of *kapha* over *vata* in the particular site as well as the associated *sopha*, *kaphahara* and *sophahara chikitsa* was adopted. The pathophysiology of Saturday night palsy elucidates how elevated pressure can compress blood vessels that supply the nerve, hence resulting in epidural ischemia. Reduced venous return at lower pressures can cause venous stasis, which can then cause extraneural edema.¹³ Therefore, initially, *Punarnavadi kashayam*¹⁴ having *Sophahara* action was given with *Danadanayanadi kashayam*¹⁵ which is indicated in neurological conditions like *Arditha* and *Akshepavata*. Most of the drugs of *Danadanayanadi kashayam* are *Tikshna*, *ushna* in nature and is *Kaphavata hara*. So, it can be a best choice for *kaphavritha vata rogas*. These *kashaya's* were given along with *Vettumaran gulika*¹⁶. *Vettumaran Gulika* is a herbo-mineral formulation described in *Sahasrayogam*, indicated in *Jwara* and is beneficial in relieving the inflammation and swelling.

In the second visit, *kevala vata* chikitsa was adopted. *Ashtavargam kashaya*¹⁷ was given as *vatasamana*, *Maharajaprasarini thailam*¹⁸ which is also indicated in *vata* disorders including neurological conditions like neuralgia and neuritis was given internally, and *Sathahwadi thailam*¹⁹ for external application due to their *Vatasamana* action.

Usually in Saturday night palsy, recovery can happen within a period of 4-6 months.²⁰ But this will affect the quality of life of people with daily earnings. The patient here being a painter was not able to continue his work since his right hand was affected. But through ayurvedic medications only, power of the right hand was completely regained within 12 days of treatment. Thus recovery was obtained within a short duration. This also helped to improve the quality of life of patient.

Conclusion

There are no articles or case reports available in Ayurvedic publications about Saturday night palsy to date. This case report can be a significant one since complete relief was obtained in the signs and symptoms as well as the Quality of life of the patient within 12 days of Ayurvedic internal medications only.

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