Case Report:

Physiotherapy intervention: recurrent case of gullian-barre syndrome of female adult patient

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Abstract:
Gullian-barre syndrome is acute or subacute symmetrical predominantly motor neuropathy involving more than one peripheral nerve, immunologic disorder characterized by rapidly progressive flaccid paralysis, areflexia, albuminological dissociation of CSF. It has monophasic course usually ends with recovery. Common cause of GBS is somewhat idiopathic, but most commonly occur due to Epsteinbarre virus, Cytomegalovirus, Compylobactorjejuni or enteritis virus causes respiratory or GIT tract infection or associated with bacterial infection.

Herewith we reported a case of 35 year female by occupation she is Farmer as well as Housewife. This case report highlights the plan of care provide to 35 year female, had recurrent GBS following immediate care, physical therapy intervention return to her normal day to day active lifestyle as well as her occupation.

Keywords: Guillan barre syndrome

Introduction

Gullian-barre syndrome is acute or subacute symmetrical predominantly motor neuropathy involving more than one peripheral nerve, immunologic disorder characterized by rapidly progressive flaccid paralysis, areflexia, albuminological dissociation of CSF. It has monophasic course usually ends with recovery. Common cause of GBS is somewhat idiopathic, but most commonly occur due to Epsteinbarre virus, Cytomegalovirus, Compylobactorjejuni or enteritis virus causes respiratory or GIT tract infection or associated with bacterial infection.

GBS is acute demyelinating disease it leads to motor neuropathy involvement of one or more peripheral nerves involvement of symmetrical or asymmetrical proximal muscle weakness of LMN type associated with areflexia, sensory & motor weakness, autonomic disturbances with dysautonomia or sometime purely sensory or purely motor involvement. It is multifactorial involving humoral and cellular immunity. It occur with microphage invasion & demyelination. T-cell activated by preceding infection & stimulated by antigen presenting cells cause disruption of blood nerve barrier by the release of inflammatory cytokines, interleukin& other mediators. In GBS is a critical disease require emergency care & with the physiotherapy treatment it get complete recovery.

The care of patient is more challenging for the healthcare team. In this patient require, months or even years of physical rehabilitation, the patient should be prepared for extended period of time. It is only by collaboration of entire healthcare team that such tasks as diagnosis, treatment, therapy &
pharmaceutical intervention performed in such a way to help the patient regain previous autonomy level.

Gbs is commonly occur in children, but it is recurrently occur in adult female of 35 year old. A review of literature related to treatment of patients with GBS of immediate intervention and the need of frequent follow-up examination described. The purpose of this case report to describe the RECURRENT GBS not yet commonly occur, it describe the plan of care of physiotherapy rehabilitation aspect.

**Case history**

Herewith we reported a case of 35 year female by occupation she is Farmer as well as Housewife. She had sudden weakness on Rtlowerlimb in morning then it progress to Lt lower limb & to the pelvis & trunk. They went to shirdisaibabahospital, their neurosurgeon referred her for investigation. That time, patient had numbness & weakness 5 days she was in intensive care unit & their diagnosed her Acute Motor Axonal Neuropathy. For further treatment they referred her college of physiotherapy, PMT, Loni. So, she came here for physiotherapy treatment on OPD basis.

Emergency department examination/intervention

Patient arrived at the emergency department with weakness of lower limb which gradually progresses with trunk & pelvis. On investigation of EMG (Electromyography) there is evidence of LMN type denervation in muscles examined in left lower limb & left upper limb.

In nerve conduction studies, they showed sensory nerve findings of both median, ulnar, radial as well as sural & peroneal are within normal limits. In motor nerve conduction studies both tibial & peroneal nerve conduction is absent. H Reflex (Hoffman’s Reflex) are absent in patient. It suggests Acute Motor Axonal Neuropathy in both lower limb than upper limb.

CSF level of protein Anosine Diaminase are elevated. After history taking, she given history of GBS 22 years back, when she was 13 years old i.e. in 8th standard. That time, plasma exchange was done (. 3 months take for her recovery).

After investigation, patient had undergone medical management of immunoglobulin injection 25 gm of 5 days in intensive care unit in supportive care & with all pharmaceutical drugs, patient had given history of that time no fever or any respiratory infection. The patient was discharge from there after 15 days with instruction of physiotherapy daily treatment and follow-up.

Presenting complaint

At the time of initial examination, 3rd week after GBS arrived in the wheel-chair. Her chief complaints were difficulty in sit to stand & walking. And inability in stair climbing. Attitude of patient when taken on bed in supine, neck, trunk & pelvis is in neutral position. Built is thin average with absence of swelling, tenderness or any muscle wasting or atrophy with not any external appliances. Stiffness present slightly over left knee joint.

Systems reviews

The patient appeared to be a thin built 35 year old female. She was 5 ft 3 inches tall, weighed about 49 kg. Heart rate, blood pressure, and respiration were well within normal limits. Other than no history of bowel & bladder disturbances, no sleep disturbances, no history of any addictions, appetite normal. On Neurological Examination higher functions that is patient was well oriented to time, place & person. Short term as well as long term memory, speech all are normal. All cranial nerve examination were intact. On sensory examination Superficial sensation...
that was pain, touch, pressure, temperature intact all over dermatomes. Deep sensation joint proprioception, kinesesthesia, vibration intact over all dermatomes as well as Graphesthesias, combined cortical, two-point discrimination, bargainosis, double simultaneous stimulation all are intact over all dermatomes.

Range of motion
Examination indicated all passive as well as active range of motion was normal in all joints.

Muscle strength
Muscle strength was assessed manually using standardized method and test position described by to improve reliability, grading definitions modified from Daniels and Worthinghams, Kendall et al. & Hines are presented with specific criteria, although grades Zero through Fair based on objective criteria, grade Fair+ through Normal depend on examiner’s subjective opinion of what is minimal, moderate & maximal strength. The application of resistance throughout the arc of motion in addition throughout the judging a muscle’s strength. A Normal grade is full available range of motion, against gravity, strong manual resistance. The patient had better grade with mild weakness in her right upper extremity grade (4/5) & in her left upper extremity grade(3+/5) while in lower extremity more weakness present. In her right lower extremity grade (3/5) present that is full ROM against gravity, no resistance & in her left lower extremity grade(3-/5) is present i.e. at least 50% ROM against gravity, no resistance. &Her abdominal strength grade (3/5).

Assessment
On examination superficial as well as deep reflexes were normal, except hamstring (L5,S1,S2) & ankle (S1,S2) were diminished i.e. grade 1+ hyporeflexia present. On evaluation of posture in standing; Anterior view: forward neck, cervical lordosis increased, shoulder 5-10 degree abducted, hands in mid prone position, wrist & fingers slightly flexed, straightening of lumbar spine, trunk & pelvis is in neutral position, hips was in coxavara position, knee slightly flexed position ankle is in neutral position.

While, on gait examination stepping gait is present, there was heel strike & toe off was absent, swing phase was all stances present.

In co-ordination ,Equilibrium: standing
Standing together
Standing on one foot
Tandem walking
Displace balance unexpectedly
Stair climbing = all phases absent.
Non-equilibrium: finger to nose
Nose to finger Dysdiadokinesia
Drawing circle = are present
Heel to shin Heel to knee
= absent.
On evaluation of balance was static was intact.

Dynamic was present but with support.
Berg balance score was 30/56.
Physiotherapy & rehabilitation
On 4TH Week physiotherapy intervention & examination:
Patient education: Prior to initiating treatment tell the patient about her condition & what are the treatment given to her.
Passive range of motion given 2-3 times/ day.
So, that multiple joint muscles placed on full stretching position. Slow gradual stretching to biarticular muscles to prevent muscle tightness. Further focused on prevention of secondary complication like joint deformity, prevention of bed sores & functional re-education. Improvement of muscle strength into various activities of daily living.

On 5th week physiotherapy intervention & examination:

# Maintainance of airway by breathing exercises.
# Maintain & improve joint ROM, peripheral joint require splintage & Passive range of motion to Active assisted range of motion required & it is progressed to active range of motion.
# Strengthen & re-educate normal muscle function with active assisted range of motion techniques & PNF techniques.
PNF techniques assisted facilitation of weak group of muscles & resisted who is strong muscles with reciprocal inhibition pattern.

# Mat activities: various techniques like Bridging

Prone on elbow
Quadarapod position
Kneeling
Standing
with support, these exercises given in sequence to progress.

Trunk control: for trunk control various exercises given.

On medicine ball various medicine ball exercises.

For abdominal strengthening abdominal exercises, bridging, static curl-ups can be given.

On 5th week of physiotherapy intervention:
Re-education of posture:
With chin tucking, pectoral stretching, William’s flexion exercises, static back exercises as well as mirror therapy were given.

On 6th week of physiotherapy intervention:
We focused on gait training.
For gait training: sit to stand, pre-ambulation training were given. Then in front of mirror on parallel bars gait training given. After that, walk with support & independent walking given.

On parallel bars hip hiking, leg swinging, one leg stand various exercises given for strengthen hip flexor, extensor, lateral rotator.
For strengthen upper extremity muscles we progress with manual resistance initially, then with weight cuff, then dumbell after that with therabands.
Parallel bar walking with support
On 7th week physiotherapy intervention: Restoration of normal muscle function; to be restore her normal walking pattern & restoration of maximal independence. Environment should reconstructed to accommodate her ability & her needs. Psychological support & motivation was given to her.

Discussion
Patients & their relatives & friends will have been given good idea of what do expect in the recovery phase of illness. In most cases, these expectation are borne out & steady improvement will be notice. But sometimes improvement is too slow and it becomes obvious that recovery will not happen within few month or sometimes will be left with significant disability. If the phrase “axonal damage” is mentioned, then it would be certainly worthy asking for an interview with consultant neurologist to discuss possible implications.

The prognosis varies enormously. GBS can prove fatal although this is because of breathing or heart complication or another coexisting condition. Attention need to be paid on many details cannot be summarized briefly. Prolonged immobilization causes many secondary complications, sometimes leads to reduction in blood volume & increased episodes of postural hypotension or leads to secondary complications.

But physiotherapy rehabilitation focused on self care & independent in activities of daily living & it is focused on posture, gait, orthotics, proper limb positioning & nutrition.

GBS is common but recurrent GBS is rarely occur, a female has suddenly weakness aft 21 year & it is progressed. To date, no other publication provided a detailed plan care for recurrent GBS. The 7th week utilization described physiotherapy helps to patient and focused on independent for activities of daily living. Roland J Pereaultt, MA, PT, ATC described as GBS is very challenging & complex syndrome. It is demonstrated to higher condition & improve patient condition after physiotherapy care.

Conclusion
Disabled patients should be treated by an interdisciplinary health team and should specific assistance plan. The prognosis from GBS is good, but recovery is prolonged. The rehabilitation team will assist the patient by minimizing disability, improving functional outcomes & her quality of life. This case report highlights the plan of care provide to 35 year female, had recurrent GBS following immediate care, physcal therapy intervention return to her normal day to day active lifestyle as well as her occupation.

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