



MANAGEMENT OF NEUROMUSCULAR DISORDER THROUGH AYURVEDA – LIMB GIRDLE MUSCULAR DYSTROPHY – CASE REPORT

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ABSTRACT

Introduction: Muscular dystrophies (MD) are a genetically and clinically heterogeneous group of rare neuromuscular diseases, that cause progressive weakness and breakdown of skeletal muscles over time. MD are a group of more than 30 genetic disease – of those Limb girdle Muscular dystrophy is a term for a group of disease that cause weakness and wasting of the muscle in the arms and legs. In *Ayurveda*, diagnosis of the condition was considered as *Mamsagata Vata* (neuromuscular diseases), a type of *Vatavyadhi* (neuromusculo skeleton disorders). **Materials and Method:** A 52 year old male patient visited *Panchakarma* OPD with complaints of pain over low back region, loss of strength on hip joint, muscle getting wasted, difficulty in getting up from squatting or sitting position, climbing up stairs, lifting heavy objects. The patient was treated with *Panchakarma* therapy and *Samana aushadhi* for 63 days. Patient's condition was assessed for symptoms of pain, power and reflexes of both upper and lower limb and psedohypertrophy of both calf muscles, mid arm circumference, Serum Creatine Phosphokinase level. **Result:** There was symptomatic improvement in the patient's condition and reduction in S.CPK level. **Discussion:** Panchakarma procedures and *Samana aushadhi* brings hopes of management in this disease in positive way. **Conclusion :** This case suggests that LGMD can be satisfactorily managed with Ayurvedic oral medicines and *Panchakarma* therapy.

Keywords: LGMD, *Mamsagata vata*, *Panchakarma* treatments.

INTRODUCTION

Muscular dystrophies (MD) are a genetically and clinically heterogeneous group of rare neuromuscular diseases, that cause progressive weakness and breakdown of skeletal muscles over time. Duchene muscular dystrophy (DMD), Becker muscular dystrophy (BMD), Congenital muscular dystrophy (CMD), Myotonic muscular dystrophy (MMD), Fascioscapulohumeral muscular dystrophy (FSMD) and Limb girdle muscular dystrophy (LGMD) are the common Muscular dystrophy disorders. Each of these disorders differ interms of age of onset, severity, affecting muscle groups and pattern of inheritance. Limb-girdle muscular dystrophies (LGMD) are a group of rare progressive genetic disorders that are characterized by wasting (atrophy) and weakness of the voluntary muscles of the hip and shoulder areas (limb-girdle area). World wide prevalence rate of LGMDs are 1 in 14,500 – 45,00. There are two major types of LGMD. LGMD1 is the autosomal dominant variant and LGMD2 autosomal recessive. In the beginning stage, waddling gait is noticed due to weakness of the hip and leg. The affected individuals may have difficulty with stair climbing, getting up from chairs and raising from the floor. The patient may struggle in keeping the arms above the head for doing activities like

combing the hair if the shoulder region is affected. Weakness of proximal muscles is the main feature of the disease along with calf muscle hypertrophy, scoliosis, contractures, cardiomyopathies and respiratory problems. Laboratory findings constantly monitored are creatinine phosphokinase which shows massive elevation. In Ayurveda, diagnosis of the condition was considered as *Mamsagata Vata* (neuromuscular diseases), a type of *Vatavyadhi* (neuromusculo skeleton disorders).

Case report

A 52year old male patient with H/O Diabetic mellitus, complaints of pain over low back region. At first he didn't gave much importance to the pain. Later the pain got worsen and then went to medical college and took MRI of LS spine and found changes in the LS spine and took treatment for 3 months and they suggest surgery. Then he started felting loss of strength on hip joint, noted muscle getting wasted. He went to medical college, there he took biopsy of Rt. Quadriceps muscle and was diagnosed as Muscular dystrophy – Limb Girdle type [Rt. Quadriceps muscle]. He took allopathy medication for 4 months. And also underwent Ayurvedic treatment for 3 times. Since 1 year the patient developed difficulty in walking, muscle wasting on both thighs, difficulty in climbing stairs and get into the bus. Since 3-4 months he developed difficulty in raising the both hands. On clinical examination, he had a winging of scapula on both, bilateral calf muscle pseudohypertrophy, muscle wasting on both thighs and upper limb proximal aspect. Gowers's sign was positive.

Personal history:

Appetite – Normal

Sleep – sound sleep

Micturation – Normal

Bowel – Regular

Diet – Mixed, daily fish, chicken occasionally beef

Addiction – nil

Allergy – nil

General examination:

Built: Moderate

Nourishment: Moderate

Pallor: Nil

Ictreus: Nil

Cyanosis: Nil

Clubbing: Nil

Edema: Nil

BP: 130/80mmHg

Pulse rate: 76 bpm

Heart rate: 76 bpm

Respiratory rate: 18/min

Facies: normal

Gait: waddling gait

Weight: 73 kg

Height: 170 cm

Other observation: speech – stampering



Ashta sthana pareeksha

Nadi - 74/min

Mala - Once a day

Moothra - Samyak 3-4 times/ day

Jihva -Aliptha

Shabdha – vaikrutha

Sparsa – Prakrutha

Druk – Prakrutha

Akruthi - madhyama

Physical examination:

Head and neck: NAD

Trunk: posteriorly winging of scapula

muscle wasting on posterior of scapula

Abdomen: NAD

Limbs:

Lower limb: muscle wasting on both thighs

pseudohypertrophy of calf both

difficulty in walking

Upper limb: difficulty in raising both hands, muscle wasting on posterior aspect of shoulder and weakness on both hand

Systemic examination: Musculoskeletal system

Inspection-Musculature: Calf muscle Pseudohypertrophy

Waddling gait seen

No Muscular twitching

Hip joint	Rt	Lt
Inspection	No swelling	No swelling
Palpation	Normal temperature No tenderness	Normal temperature No tenderness
Movements	All movements are restricted	All movements are restricted
Shoulder joint		
Inspection	Winging of scapula Muscle wasting	Winging of scapula Muscle wasting
Palpation	Normal temperature, no tenderness	Normal temperature, no tenderness
Movements	All movements are restricted Can raise hand with support	All movements are restricted Can raise hand with support

Lumbar spine

Inspection – NAD

Palpation – Tenderness grade 2 on L1-L2

Movements - Movements are restricted

CENTRAL NERVOUS SYSTEM

HMF – Intact

Cranial nerves – Intact

Motor system

Wasting of muscles

Gowers sign – Positive

Reflexes – were normal

Sensory system – were normal

Muscle bulk	RT	LT
Mid – arm	32cm	34.5cm
Mid – thigh	49 cm	48cm
Mid - foreleg	41.5cm	42.5cm

Muscle power	RT	LT
Upper limb	4	4
Lower limb	4	4

BLOOD INVESTIGATION:

on 19/4/22

FBS :181mg% PPBS :215 mg%

HbA1c: 9.4 % Hb : 15.1 g%

Total cholesterol: 224 mg %

HDL: 38 mg % LDL: 148mg %

Triglycerides: 188 mg %

LFT – SGOT: 91 IU/ml SGPT: 208 IU/ml

Ca: 10 mg% RA: 4 IU/ml ESR: 5mm/hr

ASO: 40 CRP: 8 mg/L Vit D3 – 22.4

CPK – 3695

MRI Lumbosacral spine 27/8/08

Mild relative lumbar canal stenosis at L3 to L5 levels.

Dehydrated L4-5 inter-vertebral disc with annular tear, moderate diffuse posterior disc bulge

Extensive paraspinal muscle atrophy.

Histopathological Examination [2008]

Rt. Quadriceps muscle shows preserved fascicular architecture with polygonal to round myofibers, mild variation in diameter, internal nuclei, polyfocal regenerating fibres, necrosis and myophagocytosis.

Evidence of splitting in a few hypertrophic fibres.

Spurce perivascular inflammation is evident around one of the vessel in the endomysium.

Endomysial blood vessel appear thickened.

Massons trichrome stain mild endomysial creeping fibrosis.

Quality Of Life – over all QOL – 62.5%

Physical health – 60.68%

Psychological - 79.12%

Social relationship – 91.6%

Environment – 65.62%

TREATMENT PLAN

1	<i>Udwartana</i>	<i>Jeevantyadi choorna with sweta sarshapa</i>	7 days	For <i>rookshana</i> , improve the stability
2	<i>Rooksha vasthi</i>	<i>Gandharvahastadi kashayam – 300ml Honey - 30ml Shaddharana choorna – 30g Induppu – 12g</i>	7 days	To remove <i>srotorodhana</i> improves the <i>agni</i>
3	<i>Snehapana</i> followed with <i>virechana</i> followed with <i>samsarjana krama</i>	<i>Shatphala ghrta snehapana Gandharva eranda tailam for virechana</i>	16 days	To remove vitiated <i>dosha</i>
4	<i>Ksheeradhara Pradeha</i>	<i>Aswagandha choorna Jeevantyadi choorna</i>	7 days	Improves physical strength and vitality
5	<i>Pizhinje thadaval</i>	<i>Vatasini taila Prabhanjanavimardana taila</i>	7 days	It is <i>snigdha sweda</i>
6	<i>Mustadi rajayapana vasti</i>	<i>Madhu – 100g Saindhava – 12g Rasnadasamoola ghrta - 100ml Balaaswagandha tailam – 100ml</i>	7 days	For increasing strength, <i>Jeevana Shakti, Vrishya, rasayana, vata samana, brumhana</i>

		<i>mustadi yapana ksheera kwath -400ml</i> <i>kalka – 30g</i> <i>mamsa rasa - 100ml</i>		
7	<i>Shashtika pinda sweda</i>	<i>Navara ari</i> <i>Godhuma</i> <i>Balamoola kashayam</i> <i>Milk</i> <i>Prabhanjana vimardana</i> <i>taila</i> <i>Bala taila</i>	14 days	It is <i>brumhana, snigdha sweda</i> . Good for <i>mamsa shosha</i>

INTERNAL MEDICINE

1st Week to 3rd week

Gandharvahastadi kashayam – 90ml 6am

Sudharsana tablet – 1-0-1 A/F

Nishakathakadi kashayam – 90ml bd B/F

Siva gulika – ½ -0- ½ with triphala kashayam A/F

4 weeks to 8th week

Maharasnadi kashayam – 90ml bd B/F

Chandraprabha 1-0-1 A/F with ginger juice

Yogaraja guggulu 2-0-2 with kashayam

Mahakukkuta mamsa taila – 10 drops with Maharasnadi kashayam

Nishakathakadi kashayam – 90ml bd B/F

Siva gulika – ½ -0- ½ with triphala kashayam A/F

Lipocare 2-0-2A/F

Liv 52 2-0-2 A/F

kalyanaavaleha choorna - with honey and lemon muhur muhur

Before and After treatment

Blood investigation on discharge

	BT	AT
S.CPK	3695	1483
FBS	181	130
PPBS	215	190
T.CHL	224	204
TGL	188	160
LDL	148	120
HDL	38	35
SGOT	91	45
SGPT	208	15

Quality Of Life	BT	AT
over all QOL	62.5%	75%
Physical health	60.68%	71.3%
Psychological	79.12%	83.3 %
Social relationship	91.6%	91.6%
Environment	65.62%	71.8%

Discharge medicine

1. *Aswagandha rasayanam* – 1tsp with milk morning
2. *Yogaraja guggulu* 1-0-1 with *Maharasnadi kashayam* A/F
3. *Abhyangam* with *Bala tailam*

Discussion

The main pathology in LGMD is gene mutations causing autosomal heterogeneous hereditary disorder. In *Ayurveda* there is concept of *Aadibala pravrita vyadhi*. *Beeja dosha* as a *nidana*, *beejabaga avayava dusti* happens. *Vata* plays an important role in organogenesis, tissue formation, when *vata* get vitiated must have focused on *mamsa* which cause depletion of *mamsa dhatuvagni* leads to the formation of *ama* which inturn vitiation of *kapha*, *srotorodha* happens which leads to the faulty nutrition and degeneration of *mamsa dhatu*. *Ayurveda* approach can improve patient's quality of life by analyzing the *dosha* and *dhatu*s involved in the disease. The treatment plan which includes correction of *agni*, remove *srotorodha*, reduce the vitiated *vata* and for *dhatu kshaya*. *Ayurvedic* oral medicine which was given to digest the *ama* and to improve the *agni*. Since *Mamsagatavata* is a kind of *vata vyadhi*, the line of treatment for *vata vyadhi* comprises of *snehana*, *swedana*, *mridu virechana* and *basti* can be adopted. For *rookshana* as prior to *snehapana* was done with *udwaratana* and *rookshana* along with internal medication. After obtaining the *agnideepti*, *snehapana* followed by *virechana* was done. *Ksheera dhara* was done over full body, which is *snigdha* in nature and reduce the vitiated *vata dosha* and also cause fomentation of the body too. *Pizhinje thadaval* with *vasatini tailam* and *prabhanjanavimardana tailam*, which is a type of *Snigdha sweda*. For *Dhatukshaya*, the main treatment includes *snehana*, *swedana* and *basti* along with internal medication. *Mustadi rajayapana basti* is indicated for increasing *bala*, *jeevana sakti* and *vrishya*. It is useful in *sopha*, *katisoola*, pain in calf and thigh region. It also has *rasayana* properties. It can break the pathogenesis of the disease by removing obstruction and purification of channels and depletion of *dhatu* by *brimhana* nature. *Mamsa rasa* is one of the ingredients in *rajayapana basti*, thus it does *poshana* of *mamsa dhatu*. *Shashtika pinda sweda* has the property of *Brimhana*, it is a kind of *snigdha sweda* which provides nourishment to muscles and bone. Hence *Ayurvedic* line of management fulfills all the necessarily treatment for the progressive diseases. As this is *adibalapravritta vyadhi*, this is *Yapya* in nature and we can manage the condition with *Panchakarma* procedures and *Rasayana* drugs.

Conclusion

This case study demonstrated the satisfactory management in LGMD with *Panchakarma* procedures and *Ayurvedic* medicine. *Ayurvedic* principles gives clarity and confidence in managing and providing a better Quality of life to the patient inclusively.

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