Available online at **www.ijmrhs.com**

ISSN No: 2319-5886

International Journal of Medical Research & Health Sciences, 2022, 11(10): 42-46

Subacute Polymyositis in Young Patient

Darshan Kumar Manubhai Raval[1] and Ummayhany Bharmal[2]*

[1]*Department of Medicine, SSGH Medical College Baroda, MS University Vadodara, Gujarat, India*

[2]*Medical College Baroda, Gujarat, India*

*Corresponding e-mail: ummehani.bharmal@gmail.com

Received: 18-September-2022, Manuscript No. ijmrhs-22-75037; **Editor assigned:** 20-September-2022, PreQC No. ijmrhs-22-75037 (PQ); **Reviewed**: 23-September-2022, QC No. ijmrhs-22-75037 (Q); **Revised**: 07-October-2022, Manuscript No. ijmrhs-22-75037 (R); **Published**: 30-October-2022, J-invoice: J-75037

ABSTRACT

An inflammatory myositis is a group of conditions that mainly include Polymyositis, Dermatomyositis, Necrotizing myositis, and Inclusion body myositis. All of them are characterized by elevated levels of serum creatinine kinase. Polymyositis is marked by symmetrical proximal muscle weakness of the shoulder and pelvic girdle and presents as difficulty in walking, climbing stairs, rising from a sitting position, or difficulty in overhead abduction of hands. We present a case of a young healthy male who presented with subacute onset of polymyositis. A healthy 17-year-old male presented with complaints of difficulty in walking, not being able to stand from a sitting position, and pain in the back of the left thigh for 1 month. The patient also reported multiple falls while walking during this duration of one month.

Keywords: Inflammatory myositis, Muscle inflammation, Muscle weakness, Skeletal muscle

INTRODUCTION

An inflammatory myositis is a group of conditions characterized by chronic muscle inflammation, muscle weakness, and muscle pain. Inflammatory myositis mainly includes Polymyositis, Dermatomyositis, Inclusion body myositis, and Necrotizing myositis. These syndromes include different organ systems such as the skin, heart, gastrointestinal, and lungs. The prevalence of inflammatory myositis in the world is estimated at 5 to 22 per 100,000 people. Polymyositis has a prevalence of 9.7 per 100000 [1]. Inflammatory myositis is diagnosed into various clinical

entities based on clinical features and histopathological findings. In addition, a wide array of autoantibodies are associated with these syndromes that have diagnostic and prognostic values.

In this case report, we present a case of subacute presentation of Poymyositis in a young male patient.

CASE PRESENTATION

A 17-year-old male presented to us with complaints of difficulty in walking, not being able to stand from a supine position and pain in the back of the left thigh for 1 month. The patient also reported multiple falls while walking during this duration of one month. The patient was in his usual state of health one month back then he developed pain in the back of his thigh followed by progressive difficulty in walking. The pain had an insidious onset and was moderate in intensity, dull aching in character, and did not radiate. It aggravated with movement and temporarily responded to analgesics. The patient did not have any associated complaints of back pain, any recent fever, chest pain, abdominal pain, weight loss, swallowing or breathing difficulty, or bowel or bladder disturbance/incontinence.

The general examination of the patient was unremarkable. The neurological examination of the patient was unremarkable. On motor examination the tone of muscles was normal. The power of muscles of the upper limb was assessed to be of 5/5 grade in both proximal and distal muscles.

The power of muscles of the lower limbs was tested and the results were recorded (Table 1). All the deep tendon reflexes were normal except the knee jerk which was graded +2.

Table 1 Motor examination before and after treatment

Hip	Before		After	
	Left	Right	Left	Right
Extension	2/5	2/5	4/5	4/5
Flexion	2/5	2/5	4/5	4/5
Abduction	2/5	2/5	4/5	4/5
Adduction	2/5	2/5	4/5	4/5
Knee	4/5	4/5	5/5	5/5
Ankle	5/5	5/5	5/5	5/5

Superficial reflexes were tested and recorded. All the superficial reflexes were normal except the plantar reflex which showed an extensor response.

A sensory examination was done and was unremarkable. The cerebellar and gait examination were not possible because the patient was bound to a wheelchair. Another systemic examination was unremarkable.

The laboratory investigations done are summarised in Table 2. Electromyography showed increased fibrillation with positive sharp waves and polyphasic motor unit action potentials of short duration and low amplitude indicative of proximal muscle myopathy. Muscle biopsy revealed endomysial inflammation with $CD8^+$ T-cells. Antinuclear antibodies were found to be weakly positive. Serum C-Reactive Protein levels and ESR values were elevated Chest X-ray and other imaging modalities were done and their results were unremarkable.

Table 2 Laboratory values

TLC	Patient value	Normal range
	7700/mm	4/mm-11000/mm
Hemoglobin	12.27 gm/dL	13 gm/dL-17 gm/dL
MCV	78.97 fL	83 fL-101 fL
PCV	38.31%	40%-50%
RDW	16.20%	11.6%-13.7%
Platelet count	188000/cm	150000/cm-410000/cm
Erythrocyte count	4.85×10^6/cm	$4.5\text{-}5.5\times10^6$/cm
S.ALT	42.00 IU/L	0 IU/L-40 IU/L
S.AST	123.00 IU/L	0 IU/L-37 IU/L
Alkaline Phosphatase	311.00 IU/L	28 U/L-111 U/L
Serum Potassium	4.00 mEq/L	3.5 mEq/L-4.1 mEq/L
Total Creatine Kinase	1355.00 IU/L	0 IU/L-171 IU/L
CK-MM	1295 IU/L	20 IU/L -30 IU/L
LDH	1028.00 U/L	230 U/L-460 U/L

Considering polymyositis, the patient was started on methylprednisolone 1 gram OD for 3 days followed by 1 mg/kg/day. Along with that, the patient was also given all the supportive treatments required. Motor examination after 5 days showed improvement in power and response of deep tendon reflexes of muscles of lower limbs. The results of motor examination before and after treatment are summarised in Table 1. Repeat laboratory investigations showed normal ESR and CRP level after 5 days and a decrease in CK levels was also noted.

DISCUSSION

Polymyositis should be suspected in any patient who presents with progressive weakness of proximal muscles of limbs with no sensory loss, ptosis, and sparing of extraocular muscles [2]. Myalgias are uncommon in PM [3]. Polymyositis is more common in women and the African-American population [4]. It is more common in adults and rarely occurs below the age of 20 years [5]. Polymyositis is a diagnosis of exclusion and is made by excluding conditions such as limb-girdle and facioscapulohumeral dystrophies and metabolic, endocrinal, and drug-induced myopathies. PM has a poor prognosis with a 10-year survival rate of 62% [6]. The cause of death varies with the duration of the disease, with the respiratory cause being more common in the first 12 months and the cardiac being in the 5 years [7]. Histopathological findings of PM reveal fibre size variability, scattered necrotic and regenerating fibres and perivascular and endomysial cellular infiltrates [8]. The diagnostic approach involves the evaluation of serum CK levels, needle EMG, and nerve conduction studies in all patients suspected of PM. The treatment approach includes a combination of immunosuppression, physical therapy, and monitoring for adverse effects of medications and complications of the disease and their prevention and treatment. Medical therapy involves corticosteroids as first-line therapy and methotrexate, rituximab and IVIG can be used as second-line therapy.

In this case, the patient presented with the weakness of muscles of the lower limb only associated with complaints of myalgia in the back of the left thigh with no involvement of muscles of the upper limb. Laboratory evaluation revealed elevated levels of serum CK, AST, Alkaline phosphatase, and LDH. Diagnosis in this case was made by clinical findings, lab values, and needle EMG, and biopsy findings. Treatment in this patient comprised

immunosuppression by corticosteroids. The patient showed a remarkable improvement in power after the completion of treatment with corticosteroids.

CONCLUSION

As it is known that inflammatory myositis has an idiopathic aetiology. Our patient was diagnosed based on clinical presentation, elevated CK levels, and Electromyography. This case highlights the presence of a subacute case of inflammatory myositis. Prompt diagnosis and treatment, in this case, can lead to the full resolution of symptoms.

DECLARATIONS

Conflict of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Abbreviations used

- CBC: Complete Blood Count
- CRP: C-Reactive Protein
- CK: Creatine kinase
- MRI: Magnetic Resonance Imaging
- S.ALT: Serum Alanine Transaminase
- AST: Serum Aspartate Transaminase
- ESR: Erythrocyte Sedimentation Rate
- PCV: Packed Cell Volume
- RDW: Red cell Distribution Width
- TLC: Total Leukocyte Count
- MCV: Mean Corpuscular Volume
- PM: Polymyositis
- CK-MM: Creatine Kinase- Muscle myoenzyme
- LDH: Lactate Dehydrogenase
- EMG: Electromyography

REFERENCES

[1] Dalakas, Marinos C., and Reinhard Hohlfeld. "Polymyositis and dermatomyositis." *The Lancet,* Vol. 362, No. 9388, 2003, pp. 971-82.

[2] Stenzel, W., H-H. Goebel, and E. Aronica. "immune-mediated necrotizing myopathies–a heterogeneous group of diseases with specific myopathological features." *Neuropathology and applied neurobiology,* Vol. 38, No. 7, 2012, pp. 632-46.

[3] Greenberg, Steven A. "Dermatomyositis and type 1 interferons." *Current rheumatology reports,* Vol. 12, No. 3, 2010, pp. 198-03.

[4] Amato, A. A., and R. J. Barohn. "Inclusion body myositis: old and new concepts." *Journal of Neurology, Neurosurgery & Psychiatry,* Vol. 80, No. 11, 2009, pp. 1186-93.

[5] Prieto, Sergio, and Josep M. Grau. "The geoepidemiology of autoimmune muscle disease." *Autoimmunity reviews,* Vol. 9, No. 5, 2010, pp. 330-34.

[6] Schiopu, Elena, et al. "Predictors of survival in a cohort of patients with polymyositis and dermatomyositis: effect of corticosteroids, methotrexate and azathioprine." *Arthritis research & therapy,* Vol. 14, No.1, 2012, pp. 1-9.

[7] Tahseen Mozaffar, M. D., and Tahseen Mozaffar. "An Overview of Polymyositis and Dermatomyositis."

[8] Dalakas, Marinos C. "Polymyositis, dermatomyositis, and inclusion-body myositis." *New England Journal of Medicine,* Vol. 325, No. 21, 1991, pp. 1487-98.