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Duchenne Muscular Dystrophy Improved Clinically by Homeopathy: A Case Report

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1. Abstract

Muscular dystrophy is a group of multiple inherited diseases that damage muscles with time and causes a partial or complete loss of movement. It happens due to the lack of protein dystrophin, which is important for normal muscle functioning. The most common type of muscular dystrophy is Duchenne muscular dystrophy which appears at an early age and progresses with time. Frequent falls, difficulty rising from a sitting or lying position, difficulty running and improper gait, large calf muscles, and concentration problems are all common symptoms of the disease. Diagnosis is usually made on presenting complaints and elevation of CPK-3 in blood.

An 8-year-old male boy with a waddling gait and stiff calf muscles presented to Homeopathic Opd. His mother reported that his situation is getting worse with time, as 2 years ago he only had difficulty rising from sitting to standing position. His blood reports showed a massive elevation in CPK-3, 23658 U/L. After complete history taking the individualized homeopathic medicine prescribed. Within the first 2 months of medicine induction, his general health improved clinically. CPK-3 level decreased to 9730 U/L. He walks on his own without difficulty. He can raise from lying to sitting position with less difficulty and most importantly, he has more concentration on learning ability than before.

Homeopathy is the second most famous treatment method in the world. The efficacy of this treatment can be observed by this patient who had the most positive outcomes after suffering from this progressive muscular dystrophy.

2. Introduction

Muscular dystrophy is a progressive neuromuscular disorder commonly found in boys. It is a disease of muscles in which mutations occur almost 40 types of genes. Changes in gene structure are responsible for these muscular abnormalities [1]. This group of diseases makes muscles weaker and less flexible with time. In some patients, the disease appears early in childhood while in some it appears during teens or in adulthood [2]. It is an estimation that almost one in every 3300 live male births is affected by this devastating disorder [3]. Duchenne muscular dystrophy (DMD) is an atypical inherited musculoskeletal disorder with the presentation of clinical signs and symptoms at an early age and progressive development of the disease, fatty developments, and pathological features of fibrosis in the course of the disease. DMD is an x-linked gene mutation in DNA that encodes the 427-kDa cytoskeletal protein named dystrophin. This gene is the largest in the human genome, encompassing 2.6 million base pairs of DNA and 79 axons. Almost 60% of dystrophin protein are large insertions and deletions that cause frame shift errors rearrangements and 40% are point mutations [4]. The characteristics of dystrophin are more important than its role in the functioning of muscles as it links internal cytoskeleton muscles to the extracellular matrix.

The amino-terminus binds to F-actin and carboxyl-terminus to the dystrophin-associated protein complex. Any mutation in the components of the dystrophin-associated protein complex can lead to autosomal inherited muscular dystrophies [5]. Due to this destabilization, a diminished level of dystrophin leads to progressive

membrane leakage and muscle fiber damage [6]. Duchenne muscular dystrophy (DMD) is the most common and more devastating disease of young boys, starting from 3-6 years and causing progressive muscular weakness due to very high mutations. Its patients become wheel-chair bound mostly at the age of 12 and often die in their early teens to early twenties[7,8].

3. Case Presentation

An 8-years-old male patient reported in our opd with the chief complaint of difficult walking with calf muscles hypertrophy. His mother gave a history of frequent falls, fatigue, progressive muscular weakness, and difficulty in climbing stairs that started at the age of 6 years, and progression was seen with time. Furthermore, as she reported that he must require a person to hold him whenever he go to washroom, because he wasn't able to sit on Indian toilet on his own. He used to walk like a duck often. He had no specific family history but his younger brother, aged 5 years started showing similar signs and symptoms to him.

On general physical examination, the child had an obese appearance an presentation of difficulty in walking, getting up from a sitting position, calf hypertrophy, proximal weakness, hamstring muscles contracture, and positive Gower's sign.

His serological analysis revealed an increase in creatinine kinase to 23658 U/L and an increase in alanine transaminase to 433 g/dl. Electromyographic examination with interference pattern analysis showed a myopathic pattern in the right vastus leteralis confirming primary muscle disease. Based upon history, clinical examination, and previous investigations the diagnosis of Duchenne muscular dystrophy(DMD) was confirmed.

After complete case taking, the child was prescribed individualized homeopathic medicines for 1 month initially and asked for follow-up onwards. On the second visit, his health condition was much better as he could stand from a sitting position with less difficulty and his waddling gait improved a bit. After regular administration of homeopathic medicines for 6 months, he improved clinically. Weakness improved and calf muscles became softer than before. He started climbing stairs on his own without any support. On serological examination, creatinine kinase levels dropped dramatically from 23658 u/l to 9730 u/l.

4. Discussion

Homeopathy is considered an alternative therapy for the treatment of diseases. It is the second most common system of medicine used as palliative and curative medicine worldwide [9]. Muscular dystrophy evolves with slow progression and patients become completely paralyzed and die often with respiratory or cardiac complications. DMD is the most common form of muscular dystrophy in the world. Every time muscle contracts, muscle damage occurs due to the deficiency of dystrophin protein, then damaged muscle repaired with this deficient protein. A continuous succession of this damage and repair leads to the formation of damaged fibro-fatty muscle, which is the sign of DMD [10]. Boys with DMD have difficulty getting up from a sitting position, running, frequent falls, or toe walking, as well as calf enlargement and lumbar lordosis that disappears when they sit [11].

There is a weakness in the proximal muscles of the lower limb as the patient uses his hands or arms to walkup their body due to lack of support from hip and thigh muscles, which shows positive Gower's sign [12].

In this case, the child presented with signs of delayed motor development, muscle weakness, difficulty in walking and climbing stairs, positive Gower's sign. The diagnosis was confirmed by evaluation of creatinine kinase level and muscle biopsy. This increased permeability of sarcolemma due to the repeated contractions caused leakage of protein as the elevation of CK level showing the character of DMD. Other serum markers were also markedly raised.

Current management of DMD involves regular physiotherapy and administration of corticosteroids. However, corticosteroids are associated with several side effects such as weight gain, decreased bone mineralization, behavioral disturbances, and many more [13,14]. Most recent modalities in the conventional medical system are suggestive of stem cell transplant or gene therapy, which may appear promising for the absolute cure [15].

This case report is evident that homeopathy can well manage muscular dystrophy. Before homeopathic medicines, his condition was so disturbing that he was unable to perform easy routine movements. But, during treatment, his condition improved clinically and his serum marker Ck level reduced markedly. Now he can use Indian toilet on his own and climb stairs with less difficulty. He is still under treatment and the hope to achieve the best cure is high. However, more evidence-based studies and cases require declaration of homeopathic treatment in the case of DMD.

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