

A Case of Myotonic Dystrophy Diagnosed After a Fall Injury

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Abstract: 41-Year-Old Male Fell Down A Flight Of Approximately 20 Stairs Without Alcohol. Upon Arrival, He Had Bruises With A Clear Consciousness, A Bald Head And Atrophic Muscles. He Did Not Have Major Trauma But Systemic Muscle Weaknesses Without Any Sensory Disturbance. The Grip Dynamometer Disclosed 0 Mmhg, Indicating Grip Myotonia On Both Hands. After Admission, Electromyography Revealed Myotonic Discharges And An Expansion Of The Cytosine-Thymine-Guanine Triplet Repeat Was Recognized. Finally, He Received A Definite Diagnosis Of Myotonic Dystrophy. Physicians Should Pay Attention To Potential Underlying Diseases When A Middle-Aged Patient Has A Fall While They Were Sober.

Keywords: Myotonic Dystrophy; fall; Middle age

INTRODUCTION

Etiology and Prevention of Falls And Fall-Related Injuries In Community-Dwelling Seniors Were Well Investigated [1-4]. However, Etiology Of Falls for Younger Aged Person Has Not Been. We Hereby Present One Case To Emphasize Importance Of Paying Attention To Potential Underlying Diseases, When A Middle-Aged Patient Has A Fall While They Were Sober.

CASE REPORT

41-Year-Old Male Fell Down A Flight Of Approximately 20 Stairs At A Hot-Spring Bathing Facility Without Accommodations. He Had Not Been Consuming Alcohol. He Had Forehead And Parietal Bruises With A Clear Consciousness. He Was Transferred To Our Hospital Due To The High-Energy Accident. His Past History Included A Gradual Deterioration of Muscle Weakness during the Past Year, and He Had Experienced A Skull Fracture Due To A Fall Six Months Earlier. He Had No Notable Family History.

Upon Arrival, He Had A Blood Pressure of 130/102 mmHg, Heart Rate of 84 Beats per Minute (BPM) and A Sp_o₂ Of 100% under Room Air. He Was Undernourished (172 Cm in Height And 48 Kg in Weight) and Had A Bald Head and Atrophic Muscles,

In Addition To the Forehead and Parietal Bruises. An Electrocardiogram And Whole Body Computed Tomography Scan Revealed No Specific Findings, Including Trauma. The Main Results Of Biochemical Analyses Of His Blood Performed On Arrival Were A Low Immunoglobulin G (626 Mg/Dl) Value. After Excluding Major Trauma, Removal of the Neck Collars Was Performed and the Patient's Neck Pain on Movement Was Evaluated. As He Could Not Elevate His Head, A Further Neurological Examination Was Performed.

The Patient Was Noted To Have Systemic Muscle Weaknesses Corresponding To 4 Of 5 On Manual Muscle Tests, Without Any Sensory Disturbance. The Grip Dynamometer Disclosed 0 mmHg, Indicating Grip Myotonia On Both Hands. Percussion Myotonia Was Also Recognized By A Hammer. After We Treated The Patient's Wounds, He Was Able To Stand With Difficulty Using Both Hands And Shook At the Waist When Walking, Giving Him A Waddling Gait. Emergency Magnetic Resonance Imaging Of The Head And Neck Disclosed An Incidental Small Midbrain Tumor Which Was Not Considered To Cause Motor Weakness. He Was Admitted due To Suspected Myotonic Dystrophy. He Had A Normal Intellect And The Results Of A Cerebrospinal Fluid Analysis Were Negative, Including

Studies Of The Myelin Basic Protein And Oligo Clonal Bands. Electromyography Revealed Myotonic Discharges In The Brachial And Quadriceps Femoris Muscles. An Expansion Of The Cytosine-Thymine-Guanine (CTG) Triplet Repeat Was Recognized In A Genetic Test. Finally, He Received A Definite Diagnosis Of Myotonic Dystrophy And Was Prescribed Rehabilitation To Help Prevent Falls.

DISCUSSION

Falling Down Is Major Issue Among Senile People And The Elderly Due To the Degradation Of Their Vision, Hearing, Recognition, Sense Of Balance And Exercise Capacity[1-4]. Elderly People Who Experience Even A Minor Fall May Develop Major Trauma [4]. In Contrast, When Younger People Fall Down, The Main Reasons for The Fall Are Careless Walking Or Intoxication [5, 6]. In Patients With Myotonic Dystrophy, The Gradual Progression Of Muscle Weakness Can Result In Falls [7]. Wileset Al. Reported That Patients With Myotonic Dystrophy Tend To Fall 10 Times More Often In Comparison To Healthy People [7]. Besides Myotonic Dystrophy, The Fall Rates Peak In Middle Age and Among People With Moderate Mobility Limitations Induced By Multiple Sclerosis, Muscular Dystrophy, Post-Polio Syndrome Or Spinal Cord Injury [8]. Accordingly, Physicians Should Pay Attention to Potential Underlying Diseases When a Middle-Aged Patient Is injured During A Fall Suffered While They Were Sober. There Is Currently No Cure For Myotonic Dystrophy. However, Appropriate Rehabilitation Can Help Reduce The Risk Of Injury Due To A Fall [4,7].

CONCLUSION

Physicians Should Pay Attention To Potential Underlying Diseases When A Middle-Aged Patient Has A Fall While They Were Sober.

REFERENCES

1. Montero-Odasso M, Verghese J, Beauchet O, Hausdorff JM; Gait and Cognition: A Complementary Approach To Understanding Brain Function And The Risk Of Falling. *J Am Geriatricsoc*, 2012; 60(11):2127-36.
2. Stewart Williams J, Kowal P, Hestekin H, o'driscoll T, Peltzer K, Yawson A, Biritwum R, Et Al; Sage Collaborators; Prevalence, Risk Factors And Disability Associated With Fall-Related Injury In Older Adults In Low- And Middle-Income countries: Results From The Who Study On Global Ageing And Adult Health (Sage). *Bmc Med*, 2015; 13:147.
3. Centre for Health Promotion, Public Health Agency of Canada; British Columbia Injury Research and Prevention Unit (Bcirpu); National Fall Prevention Workshop: Stepping Up Pan-Canadian Coordination. *Chronic Dis Inj Can*, 2012; 32(4):227-8.
4. Moncada LV; Management of fall in Older Persons: A Prescription for Prevention. *Am Fam Physician*, 2011; 84(11):1267-76.
5. Kool B, Ameratunga S, Robinson E, Crengle S, Jackson R; The Contribution Of Alcohol To Falls At Home Among Working-Aged Adults. *Alcohol*, 2008; 42(5):383-8.
6. Thornley S, Kool B, Marshall RJ, Ameratunga S; Alcohol Intake, Marijuana Use, And Sleep Deprivation On The Risk Of Falls Occurring At Home Among Young And Middle-Aged Adults: A Case-Crossover Study. *N Z Med J*, 2014; 127(1406):32-8.
7. Wiles CM, Busse ME, Sampson CM, Rogers MT, Fenton-May J, Van Deursen R; Falls And Stumbles In Myotonic Dystrophy. *J Neurolneurosurg Psychiatry*, 2006; 77(3):393-6.
8. Matsuda PN, Verrall AM, Finlayson ML, Molton IR, Jensen MP; Falls Among Adults Aging With Disability. *Arch Phys Med Rehabil*, 2015; 96(3):464-71.