

Case Study

CAFFEINE INDUCED CERVICAL DYSTONIA-A CASE STUDY

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ABSTRACT

Dystonia is a movement disorder characterised by involuntary, extended, patterned, and often repetitive muscle contractions of skeletal muscles, frequently causing twisting movements or abnormal postures. Recent studies have shown that stress and coffee consumption can precipitate dystonic attacks. Many people, due to their diligent life schedules and increased physical inactivity due to less work-life balance, have been identified as the major cause of this neurological movement disorder. The action of caffeine and other CNS stimulants may be related to dystonic episodes in an individual. Cervical dystonia is specifically characterised by involuntary muscle contraction of the trapezius muscle, pain in the cervical region, numbness in one or both arms, and restricted movement. Proper understanding and management of spasmodic torticollis are necessary to avoid discomfort and progress towards a healthy life. The case study aims to highlight the role of physical activity along with proper work-life balance to live a healthy lifestyle and minimise the frequency of muscle spasm attacks caused by spasmodic torticollis. The role of clinicians such as physicians and clinical pharmacists in understanding and managing the disease is critical and crucial for a better quality of life and leading a stress-free life.

Keywords: Trapezius muscle, Spasmodic torticollis, Caffeine, Clinical pharmacists

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INTRODUCTION

Spasmodic torticollis, more commonly known as cervical dystonia, is a chronic disorder that is generally identified by involuntary muscle contraction of the neck, pain while performing neck movements, and restricted movement with pain lasting from a few hours to many days [1]. Any occupation based on repetitive movements or overlearned tasks such as machinery or computer operation, writing, or playing an instrument may lead to abnormal muscle contractions in predisposed individuals [2]. Spasmodic Torticollis by trapezius spasm is being observed in many people who tend to be working in corporations, performing desk jobs, and other related professions and hence needs to be diagnosed properly. Lack of physical activity and odd lifestyle habits are the main causes of abnormal rounding and changes in the upper back of the body, commonly known as kyphosis. Caffeine plays a major aggravating factor in cervical dystonia as it shows adenosine receptor antagonistic activity [3]. In a type of idiopathic cervical dystonia, attacks can be provoked by stress and by the consumption of coffee or tea, i.e., by factors that are known to increase dopaminergic activity [4]. Symptomatic relief can be provided by the practitioners through the application of non-steroidal anti-inflammatory drugs (NSAID) with skeletal muscle relaxants and anti-emetics to treat sickness associated with these drugs, which might help the patient improve significantly and improve his lifestyle habits [5]. Many centrally acting skeletal muscle relaxants are found to be highly efficacious but are related to the development of adverse drug reactions that are dose-related, and thus newer treatment regimens and approaches are required to tackle conditions associated with muscle spasms [6]. The purpose of this case report is to increase awareness amongst clinicians about dystonia and the aggravating factors such as caffeine and related CNS stimulating agents that might affect adenosine activity by inhibiting its receptors and related muscle spasms to prevent misdiagnosis and to make people aware of their lifestyle habits and maintain a good work life balance to prevent its reoccurrence.

CASE REPORT

A 48-year-old right-handed male came to the hospital with chief complaints of neck pain and restricted movement of the upper back of the body, with pain radiating to his left and right arm while

performing any slight normalised activity for 2 d. Upon further questioning and initial assessment and examination, the patient was diagnosed with spasmodic torticollis with associated bilateral trapezius and paraspinal muscle spasm. The patient was advised to have an X-ray of the cervical spine in anteroposterior and lateral views. On X-ray, minor disc degeneration was detected, pointing towards the initial stages of spondylosis. He had been experiencing this episode of involuntary muscle contraction and pain for 10 y. These episodes persisted for 1-2 d, and the patient gradually returned to his original state. The patient, when previously consulted by a physician, was put on Tablet Oxalgin DP for 3 d, and the symptoms gradually disappeared. On further interaction with the patient, it was revealed that the patient was an IT professional, and due to long sitting and working hours, workload and stress precipitated cervical dystonia. He used to have around 4-5 cups of coffee a day to continue working late at night, which played a major aggravating factor in his cervical dystonic condition. The patient, upon final assessment and consultation, was advised to take Tablet Myospaz 250 PO BD, Tablet Naxdom 500 PO BD, Tablet Pan 40 S. O. S., and Tablet Calcimax K2 PO OD. The patient was strictly instructed to discontinue coffee consumption, which contained caffeine and was a worsening factor for the prevailing condition. The patient was further told to learn some shoulder and upper back exercises for proper orientation of his spinal column, improve his sitting and working posture at work, and follow up with physiotherapy and rehabilitation once a month. The patient was advised to have an interferential therapy session at the physiotherapy department for immediate symptomatic relief. The patient's condition improved gradually with the interferential therapy sessions and was properly counselled regarding manifestations of caffeine in neurological conditions and to cease its consumption, exercise regularly, improve lifestyle habits, change the work environment, and take a balanced diet. The patient was advised to consume Tablet Pan 40 in the morning if acidity appeared as a side effect of the mentioned drugs. The patient is currently on no medication and is living a healthy lifestyle with periodic sessions with his physiotherapist for his cervical mobility and spinal exercises.

DISCUSSION

Spasmodic torticollis is a well-known, common, yet one of the most complex disorders that needs to be well understood by physicians as

well as clinical pharmacists, and it should not merely be confused with other diseases [1]. The major reasons for the patient's worsened attacks of muscle spasms were due to intense coffee consumption, his lifestyle obligation due to work as an IT professional, physical inactivity, and not maintaining a proper work-life balance, along with maintenance of his spinal posture, which resulted in his cervical vertebrae developing cervical stenosis due to a decreased intervertebral gap and increased wear and tear of the vertebrae, leading to mild spondylosis. The occurrence of spasmodic torticollis should not always be co-related with any traumatic injury and can occur due to irregular lifestyle habits and deficits such as improper keyboard techniques, asymmetrical postures with poor gravitational alignment, and rapid repetitive movements [1, 2]. Mental stress and tension-type headaches can cause overactivity of the pericranial and cervical muscles, indicating the role of the trapezius muscle [7]. The patient's grim situation can be understood by the unawareness of the previous physician, his consultation, and counselling, who prescribed a combination of non-steroidal anti-inflammatory drugs, believing it to be a normal muscle strain. Some studies show that anticholinergics are a viable option for the treatment of spasmodic torticollis associated with muscle spasms, but in this case, the administration of NSAIDs with anti-emetics and muscle relaxants proved to be a major therapy management process along with interferential, mobilisation, and rehabilitation therapy to cure the patient and restore his healthy lifestyle. New medicinal anti-inflammatory agents with fewer side effects and potency can be a beneficial step towards improved patient therapy outcomes with cost effectiveness and improved efficacy for the treatment of muscle related conditions and inflammatory changes [8, 9]. Hence, the patient, physician, and clinical pharmacist need to understand medication adherence and comply with the counselling points that have been decided by the clinicians with regular mobilisation sessions with a physiotherapist to lead a stress-free lifestyle. The role of caffeine as an adenosine receptor antagonist should be well known to physicians and other clinicians such as clinical Pharmacists to provide proper patient counseling to the patients and plan a better treatment outcome [3, 4].

CONCLUSION

Spasmodic torticollis is a common condition but remains one of the most misunderstood diseases due to its idiopathic form and the absence of a specific treatment regimen to treat spasmodic torticollis associated with trapezius muscle spasm. To lead a healthy lifestyle without the reoccurrence of spasmodic episodes, it is necessary to properly follow the prescribed regimen, along with proper mobilisation and rehabilitation therapy, and maintain a proper work-life balance with regular physical activity to maintain proper spinal posture and decrease the chances of spasmodic torticollis. The treatment possibilities of therapeutic management, such as medical and surgical treatment, psychological methods, and psychotherapy, should be reviewed. Therapy of spasmodic torticollis should be started with methods such as biofeedback, behaviour therapy, and anticholinergic drugs. Clinical pharmacists can play a

very important role in providing proper counselling to the patient regarding his prescribed regimen, along with regular follow up with the patient. Clinical pharmacists and physicians should provide collaborative treatment to prevent misdiagnosis of the disease and further effective therapy for the patient to lead a stress-free lifestyle.

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AUTHORS CONTRIBUTIONS

All the authors have contributed equally.

CONFLICT OF INTERESTS

Declared none

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