

Chiropractic management of musculoskeletal pain secondary to tardive dyskinesia

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Tardive dyskinesia (TD) is an umbrella term typically used to describe a movement disorder associated with the use of neuroleptic (anti-psychotic) medication. It is characterized by abnormal, repetitive and involuntary movements. The movements may be around the mouth and face (orofacial dyskinesia) and less frequently, in the trunk and limbs (trunk and limb dyskinesia). TD occurs in over 20% of those using neuroleptic medication continually for longer than three months.

A case report is presented of a patient affected by TD who suffered mechanical musculoskeletal pain secondary to its effects, and was managed by chiropractic care. (JCCA 2005; 49(2):92-95)

KEY WORDS: tardive dyskinesia, movement disorders, muscular spasm, chiropractic care, “dyskinesia, drug-induced”.

Introduction

This paper reviews the presentation and management of one patient diagnosed with tardive dyskinesia (TD) who presented to a chiropractic clinic seeking palliative care for the musculoskeletal complaints that she experienced as side effects to the TD process.

History

A 29-year-old female affected by tardive dyskinesia sought chiropractic intervention for lower back pain and

La dyskinésie tardive (DT) est un terme générique généralement utilisé pour décrire un trouble du mouvement associé à la prise de neuroleptiques (antipsychotiques). Elle se caractérise par des mouvements anormaux, répétitifs et involontaires. Les mouvements peuvent toucher la bouche et le visage (dyskinésie bucco-faciale) et plus rarement le tronc et les membres (dyskinésies du tronc et des membres). La DT survient chez plus de 20 % des personnes prenant des neuroleptiques, sans interruption depuis plus de trois mois.

On présente ici le cas d'un patient atteint de DT, souffrant d'une douleur musculo-squelettique mécanique consécutive à ses effets, et pris en charge par des soins chiropratiques.

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MOTS CLÉS: dyskinésie tardive, troubles du mouvement, spasme musculaire, soins chiropratiques, « dyskinésie d'origine médicamenteuse ».

sciatica. This individual claimed that these complaints had evolved secondary to the posture that she was forced to adopt as a result of the TD; i.e. she claimed that due to uncontrollable muscle spasms, she was unable to “free-sit” or “free-stand”; meaning that she always had to adopt a position in which she could lean on something, whether a chair or a wall, for support. A continuously distorted posture consisting of rotation, lateral flexion and extension in both the cervical and lumbar spine resulted. When seated, the patient felt the need to have her legs crossed

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(right over left, such that her left ilium bore most of her body weight) and her head supported against a wall. When lying down, she always laid on her left side.

Pharmaceutical history revealed past use of anti-psychotics and anti-depressants (Prozac, Risperidol, Effexor, etc.) for an estimated 7 to 8 years. The patient related that she had been diagnosed with schizophrenia approximately 2 years prior to the date of seeking chiropractic care, and had almost concurrently developed symptoms which were diagnosed by neurologists to be drug-induced TD. As a result, all anti-psychotics and anti-depressants had been discontinued, and the only pharmaceutical being used at the time was Percocet, used on an “on and off” basis for pain management.

Medical history was otherwise unremarkable, with the exception of sleep apnea.

Examination

Note was made of the patient’s tendency towards a sustained posture of lateral flexion, rotation and extension in both the cervical and lumbar spine. Choreoathetoid movements consisting of flowing, slow writhing features were also noticed, specifically in the right upper limb.

Neither range of motion nor neurological motor testing could be effectively assessed due to the patient’s lack of voluntary muscular control and accompanying instability in the seated, standing or prone position. For the same reason, traditional orthopedic testing was rendered to be both impossible and unreliable. Neither the patellar nor the Achilles reflex could be elicited on either side.

Soft tissue examination revealed hypertonicity and tenderness of the gluteals, lumbar erector spinae, and psoas muscles bilaterally. Digital pressure over the gluteals and psoas muscles respectively, recreated the presenting complaints of sciatica and tingling in the legs.

Examination findings resulted in a diagnosis of Myofascial Pain Syndrome, specifically of the psoas, lumbar erector spinae, and gluteals (bilaterally).

Management

The patient was treated using a variety of manual therapies, consisting of soft tissue therapy (massage), assisted stretching, and spinal manipulative therapy (SMT).

Outcome measures

With respect to judging clinical success of therapeutic in-

tervention, it is customary to use a combination of subjective and objective measures. In this specific case, more focus was placed on qualitative measures as opposed to quantitative measures, due to the fact that treatment was not directed toward the primary condition of TD, but rather treatment goals were simply palliative in nature; i.e. treatment was rendered to alleviate the patient’s symptoms/discomfort that had arisen secondary to the TD.

Response to treatment

Three treatments administered over a 10-day period resulted in resolution of the patient’s chief complaints of lower back pain, sciatic pain, and tingling in the legs. The patient reported better quality of life in such areas of decreased pain, increased comfort and ability to concentrate, perform household chores and activities of daily life.

Literature search

A literature search for any published studies bearing any similarity to this case was done. The search terms “Tardive Dyskinesia” were used to search MANTIS and CINAHL for any results in the past decade. The search terms “Tardive Dyskinesia” and “conservative” or “manipul*” or “manual” or “massage” or “chiroprac*” were used on the databases AMED, Alt Health Watch, Biomedical Reference Collection: Expanded, and Allied Health Collection: Expanded. A search of the Cochrane Library yielded results pertaining to pharmacological therapies, informed consent issues, and early recognition issues. No results pertaining to conservative or manual or chiropractic management of a patient with tardive dyskinesia were obtained from any of these databases.

Discussion

Neuroleptic (or antipsychotic) medications were first introduced in the 1950’s to manage schizophrenia and related disorders.^{1,2} While effectively impacting on symptoms of hallucinations and delusions, there have been numerous side effects associated with the use of neuroleptics, some of the most significant of which involve the motor system. Although it is not fully understood how this class of drug works, it is presumed that they block the postsynaptic dopamine receptors on neuronal membranes. The “dopamine supersensitivity theory,”^{2,3} considered to be one of the most influential theories to explain the appearance of TD, suggests that a

prolonged blockade of these receptors can result in hypersensitivity of, or an increase in the number of, dopamine receptors in the basal ganglia, resulting in the manifestations of TD.

In 1973, Dr. George Crane, a psychiatrist, was the first to reveal that “many, and perhaps most, long-term neuroleptic patients were developing a largely irreversible, untreatable neurological disorder, tardive dyskinesia.”^{4:1}

TD is a neuroleptic-associated movement disorder, characterized by abnormal, repetitive and involuntary movements. TD occurs in over 20% of those using neuroleptic medication for longer than three months.² Some of the risk factors associated with tardive dyskinesia are increasing age, female gender, coexisting neurological impairment, and associated brain abnormalities.^{5,6} Most frequently, the movements of tardive dyskinesia are around the mouth and face (orofacial dyskinesia) and less frequently, in the trunk and limbs.¹ It tends to be a chronic condition of insidious onset, with spontaneous fluctuation in severity.¹

Palliative role of the chiropractor

One of the potential complications of a diagnosis of TD is the emergence of musculoskeletal pain, generated by associated repetitive movements and static postures.

The Dystonia Medical Research Foundation states that treatment is “designed to help the symptoms of spasms, pain and disturbed postures and functions. Most therapies are symptomatic, attempting to cover up or release the dystonic spasms ... Some people with dystonia have also found benefit from complementary health care ...”⁷ As chiropractic treatment commonly encompasses soft tissue therapy, stretching, mobilization and manipulation, such a regime can be utilized to favorably affect spasms, pain, posture and function. The subject of this case report continues to seek elective chiropractic care. She reports alleviation of pain and spasms, and increased comfort and quality of life following chiropractic intervention. While she acknowledges that the effects of care are temporary due to the nature of her TD, she contends that if she does *not* attend for periodic chiropractic treatment, her “levels of pain and discomfort increase while her quality of life and ability to concentrate decreases.”

The patient has also commenced Botox injections as part of her medical treatment, and reports short-term relief following the injections.

Concurrent medical management

Medical protocols investigated in the hopes of managing TD have ranged from discontinuation of the neuroleptic, or substituting one neuroleptic for another, to utilizing a host of pharmaceutical interventions including vitamin E. The Cochrane library database provides comprehensive reviews of nine categories of intervention that have been used as potential treatments of neuroleptic-induced tardive dyskinesia, summarized below:

Table 1
Cochrane Reviews completed on Management of Tardive Dyskinesia^{1,2,5,8-13}

<ol style="list-style-type: none"> 1. Benzodiazepines 2. Non-neuroleptic Catecholaminergic Drugs 3. Gamma-aminobutyric acid agonists 4. Vitamin E 5. Anticholinergics 6. Cholinergics 7. Calcium Channel Blockers 8. Neuroleptic Reduction and/or Cessation and Neuroleptics 9. Miscellaneous treatments (ex. Botox, lithium, Essential Fatty Acids, etc.)
<p>None of the above was found to have sufficient or adequate benefit to justify its continued use in the management of TD.</p>

An additional option is surgery; the Dystonia Medical Research Foundation states that surgery may be considered “when patients are no longer receptive to other treatments.”^{7,14} Surgical options include thalamotomy, pallidotomy, muscle resection, anterior cervical rhizotomy, selective peripheral denervation, and chronic deep brain stimulation.^{7,14}

Conclusion

Tardive dyskinesia is a movement disorder that may result from continued or prolonged use of neuroleptic medication.

A person affected with TD may seek chiropractic care to help with spasms, pain, disturbed posture and function. Chiropractors should utilize a team approach to care for such a patient, attempt to communicate with other of the

patient's health care providers, and be aware that chiropractic intervention in such a case is palliative only in nature, and not directed toward the primary condition of TD itself.

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