AFRICAN WOMEN EXPERIENCING PERIMENOPAUSE: MUSCLE SPASMS

By

Dr. Brenda Nelson-Porter

A Paper Presented in Partial Fulfillment

of the Requirements for the International PhD

World Information Distributed University (WIDU)

May 2014

Updated September 2017

African Women Experiencing Perimenopause: Muscle Spasms

This series of paper focus on women in the poorer nations, such as in Africa, who experience and are coping with perimenopause. Perimenopausal women in their 20s-40s experience hormonal changes lasting 4-10 years ("American Society for Reproductive Medicine," 2008; "Perimenopause Symptoms," n.d.). Muscle spasms, a symptom of perimenopause, are involuntary muscle contractions. Muscle spasms differ from spasticity, an involuntary muscle stiffness that result from neuromotor disorders or spinal cord injuries, and muscle tension associated with menopausal women that derives from stress and anxiety (Edgerton & Roy, 2010; Jarrett, 2008; "Muscle Tension," n.d.). This research will present various forms of muscles spasms that may be associated with the condition of perimenopausal and natural approaches to help African women who experience these symptoms.

Forms and Stimuli of Movement Disorders

Limited electromyographic recordings and electrophysiologic (EP) studies of the autonomic nervous system have been conducted to understand muscle spasms (Sukajintanakarn, & Mitrabhakdi, & Phanthumchinda, 2006; Tan & Jankovic, 2001). Muscle spasms are often categorized based on the response or movement of the limbs or truck, such as flexor (upwards), extensor (outwards), adductor (inwards), and arching (Jarrett, 2008). The phrase involuntary muscle contractions is often used interchangeably with involuntary muscle movement giving rise to why medical researchers are recommended to clarify if the movements are derivative of contractions stemming from chemical, electrical or mechanical stimuli (Tiwari et al., 2011). Results of physical examinations and clinical phenomenology conclude that psychogenic movement disorders (PMD) include tremor, dystonia, and myoclonus (Tan & Jankovic, 2001).

"Facial spasms that distort facial expression are typically due to facial dystonia, tics, and hemifacial spasm" (HFS; Tan & Jankovic, 2001, p. 380).

- Tremor is among the most common movement disorders and is characterized by rhythmic oscillations of a part of the body around one or more joints (Hess & Pullman, 2012).
- Dystonia, which has a strong inherited basis, is caused by involuntary sustained, patterned muscle contractions affecting one or more sites of the body, frequently causing twisting and repetitive movement, or abnormal movement and abdominal posture. Categories of dystonia based on the number of areas of which the body is affected include focal dystonia, segmental dystonia, generalized dystonia, multifocal dystonia and hemidystonia (LeDoux, 2009, p. 484; Nemeth, 2002, p. 695; Tan & Jankovic, 2001).
    - Benign Essential Blepharospasm (BEB) is a focal dystonia characterised by bilateral involuntary closure of the eyelids without spasm of other facial muscles (Batterham, Kaines, Malhotra, & Selva, 2003, Abstract section).
    - Meige Syndrome (Brueghel syndrome) is the combination of blepharospasm and involuntary movements of the lower facial and/or masticatory (jaw) muscles (Batterham et al., 2003, p. 483).
- Facial tics are abrupt onset of a brief, unsustained focal facial movement usually preceded by a premonitory sensation and suppressible, such as eye blinks, nose twitches, and grimaces (Medline Plus; 2014; Tan & Jankovic, 2001).
- Hemifacial spasm (HFS, convulsif) is characterized by involuntary, irregular, clonic or tonic movements of muscles innervated by the seventh cranial nerve on one side of the face, which may occur during sleep and worsen during voluntary movement (Tan & Jankovic, 2001; Wu & Jankovic, n.d., Introduction section).

- Psychogenic facial spasms are involuntary movement with lower face involvement that are not experienced during sleep and does not worsen during voluntary movements (Tan & Jankovic, 2001).
- Myoclonus is the sudden, brief and shock-like nature of the movement (Baker, 2003).
- Acquired Neuromyotonia (Isaacs' Syndrome) is a rare disorder where hyperexcitability of peripheral motor nerves leads to incapacitating muscle twitching, cramps, myokymia [eye twitching], pseudomyotonia (myotonia, slow muscle relaxation after forceful contraction) and mild weakness (Sukajintanakarn et al., 2006, pp. 1308-1312).
- Cramp Fasciculation Syndrome (CFS) characterized by cramps, fasciculation [visual muscle twitches], and muscle aches, which frequently become more intense with exercise, and which might be accompanied by muscle weakness and muscular atrophy, however, characterized by a less prominent PNH than is shown in Isaac's Syndrome (Dikmen & Aysevener, 2013, Introduction section).

Although tonic contractions are associated with HFS, the latter should not be confused with tonic spasms, which are usually associated with multiple sclerosis (MS) characterized by left-sided spasms and lesions on the brain (Pender, 2007; Wu & Jankovic, n.d.). Hemifacial spasms are muscle contractions derive from the nerves misfiring when the internal facial arteries becoming compressed aggravated by stress, anxiety, and fatigue, which are symptoms of perimenopause (Mayfield Clinic & Spine Institute, 2013; Tan & Jankovic, 2001). In a study, the average women age 34.6 either had a left-sided onset or an affected lid that derived from depression, which is another symptom of perimenopause (Tan & Jankovic, 2001). Because HFS is only reported in 8 in 100,000 individuals in the United States mostly in women 44 and above,

organic hemifacial spasm, as well as tonic spasms, may not be associated the condition of perimenopause (Mayfield Clinic & Spine Institute, 2013).

Muscle Spasms Associated with Hormonal Conditions

Available scholarly research is limited on spasms, such as uterine and bladder, related to the condition of perimenopause. In regards to muscle spasms associated with perimenopause, the search engines populate muscle twitching. In regards to uterine spasms, the phrase, uterine contractions, populates the search engines. Research is further limited on the experiences and approaches of women in African who experience muscle spasms.

Muscle spasms should not be used interchangeably with muscle cramps or menstrual cramps. A 23-year-old African American women (B. Nelson, personal communication, February 3, 2014) said, during her cycle she does not have muscle spasms, but have cramps in her left foot and never in her right foot. Because this African American woman does not participate in any physical exercise activities, the cramps may not be associated with CSF (Dikmen & Aysevener, 2013). Because the left foot is only affected, the contractions experienced by this African American woman may be characterized as the spasm known as hemidystonia (LeDoux, 2009).

Suggestions to Approach Muscle Spasms

The following suggestions aim to help women, to include women in Africa or other nations, who experience muscle spasm associated with perimenopause and are not aimed to diagnose, prescribe, treat, or cure. Medical cannabis, which is approved by the U.S. Federal Drug and Administration (FDA), is mostly used for pain and muscle spasms due to the psychoactive effects of the drug (Borgelt, Franson, Nussbaum, & Wang, 2013). Patients with MS who are identified as experiencing spasticity may further characterized as experiencing tonic

spasms (Borgelt et al., 2013; Pender, 2007). Although medical cannabis (Nabiximols), which also plays a role in the decline of hormones, may be effective in approaching tonic spasms, more likely may not be effective in spasms associated with perimenopause (Borgelt et al., 2013).

A 25-year-old female Dentist living in Kenya shared, to approach muscle spasm, "we use antispasmolytics like Buscopan. Scopolamine is also used for GI" (O. Wanyonyi, social media communication, April 27, 2014). Hyoscine-N-butylbromide (HBB, Buscopan), which is the only approved FDA antispasmodic medication used to alleviate muscle spasm in horses, has been effective in treating muscle spasms, whereby the condition seem to be cited interchangeably with abdominal pain (Boehringer Ingelheim, 2014; Samuel, 2009). Hyoscine Hydrobromide (Scopolamine) is a popular antispasmodic medication that is usually administered for muscle spasms associated with various conditions and during general anaesthesia to prevent muscle spasms. Scholarly literature on using Scopolamine to approach muscle spasms associated with perimenopause, however, is not readily available or accessible (NHS, 2014).

Natural techniques discussed aim to enlighten women on lifestyles and healthy living. Natural substances consist of amino acids, vitamins, and minerals. A male Doctoral candidate (A. Ahmed Ali, social media communication, May 1, 2014) studying computer science in Mahrashtra, India and who is married to a women living in Yemen shared, women in Yemen are uneducated. The women use warm water bag to approach muscle spasms. A 26-year-old woman living in Yemen (M. Alsofy, social media communication, May 2, 2014) shared, "I am not really aware of the different between muscle spasm and muscle cramps, but most middle age women, especially in the villages use natural therapy, such as leaves. The old women have special way of massaging to help get rid of such issues. Cases are different for women living in cities, they usually go to a doctor."

Consuming foods rich in vitamins and minerals helps build the muscles whereby involuntary muscle spasms become reduced. Vitamin C is stored in Cayenne and Queen pineapples, which are cultivated in South Africa (Joy, 2010; Republic of South Africa, 2011). Dehydration and salt depletion, which cause muscle spasms, may be restored by drinking an ample amount of water (Robinson & Cataldo, 2011).

Manganese and magnesium are minerals known to relax the muscles (Collins, 2013). The guinea pig stores a low unit of magnesium, however, a high level of Vitamin C (Numbela & Valencia, 2003). Rodents, such as rats, mice and the guinea pig, have been a food source of some residents of various African nations (Fiedler, 1990). Two subscribers of a social media site shared the guinea pig tastes like Gummi Bears and chicken.

Researchers may find that consuming exotic meats or natural remedies with prescription medications may cause adverse side effects. Rodents carry disease, such as Lassa fever, which causes malaise or weakness (Moses et al., 2013). Scopolamine has further been reported to cause extrapryramidal side effects (EPS), which include involuntary movement (Andersen & Freeman, 2004). Women who are experiencing adverse side effects or believe their condition results from a medical disease are recommended to seek assistance from a medical doctor (MD), neurologist, naturopathic physician (ND) or osteopathic physician (DO).

References

American Society for Reproductive Medicine. (2008). Current evolution of amenorrhea. *Fertility and Sterility*, *90*(3), S219-S225. Retrieved from http://www.asrm.org/globalassets/asrm/asrm-content/news-and-publications/practice-guidelines/for-non-members/current_evaluation_of_amenorrhea-pdfnoprint.pdf

Andersen, E. P., & Freeman, E. B. (2004). Recognition of movement disorders: Extrapyramidal side effects and Tardive Dyskinesia. Would you recognize them if you see them? *Practical Gastroenterology*, 14-26. Available at http://www.reflux.org

Baker, R. (2003). *Myoclonus*. Retrieved from http://www.acnr.co.uk/pdfs/volume3issue5/v3i5management.pdf

Batterham, M., Kaines, A., Malhotra, E., & Selva, D. (2003, April). Benign essential blepharospasm: Diagnosis and management. *Optometry Today*, 58-60. Retrieved from http://www.optometry.co.uk/uploads/articles/9edce4b8d3dce58ff30848ffbf332760_selva20030404.pdf

Boehringer Ingelheim. (2014). *Buscopan injectable solution*. Retrieved from http://www.bi-vetmedica.com/main/equine/buscopan.html

Borgelt, L. M., Franson, K. L., Nussbaum, A. M., & Wang, G. S. (2013). The pharmacologic and clinical effects of medical cannabis. *Pharmacotherapy, 33*(2), 195-209. Retrieved from http://coruraltrack.org/wp-content/uploads/2013/09/MMJ-Pharmacotherapy-article-published-version-2013.pdf

Collins, H. (2013). *Magnesium and Ehlers-Danlos syndrome: Part one: *Why* persons with EDS need to know about magnesium*. Retrieved from http://www.ednf.org/sites/default/files/MAGNESIUM_AND_EDS_PART_1.pdf

Dikmen, P. Y., & Aysevener, E. O. (2013). A case with cramp-fasciculation syndrome. *Journal of Clinical and Analytical Medicine*, 1-3. doi:10.4328/JCAM.1392. Retrieved from http://www.jcam.com.tr/files/KATD-1392.pdf

Edgerton, V. R., & Roy, R. R. (2010). Spasticity: A switch from inhibition to excitation. *Nature Medicine, 16*(3), 270-271. Retrieved from http://211.144.68.84:9998/91keshi/Public/File/39/16-3/pdf/nm0310-270.pdf

Fiedler, L. A. (1990). Rodents as food source. Proceedings of the Fourteenth Vertebrate Pest Conference 1990. Retrieved from http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1029&context=vpc14

Hess, C. W., & Pullman, S. L. (2012). Tremor: Clinical phenomenology and assessment techniques. *Tremor and Other Hyperkinetic Movements (TOHM), 2*, 1-15. Retrieved from http://www.tremorjournal.org/index.php/tremor/article/download/65/pdf

Jarrett, L. (2008, August). Spasticity and spasms. *Open Door*, 6-8. Retrieved from http://www.mstrust.org.uk/information/opendoor/articles/0808_06_08.jsp

Joy, P. P. (2010). *Benefits and uses of pineapple*. Retrieved from http://www.kau.edu/prsvkm/Docs/Benefitsandusesofpineapple.pdf

LeDoux, M. S. (2009). Meige syndrome: What's in a name? *Parkinsonism and Related Disorders, 15*, 483-489.

Mayfield Clinic & Spine Institute. (2013). *Hemifacial spasm*. Retrieved from http://www.mayfieldclinic.com/PDF/PE-HFS.pdf

Medline Plus. (2014). *Facial tics*. Retrieved May 4, 2014, from http://www.nlm.nih.gov/medlineplus/ency/article/001410.htm

Moses, L. Kamara, A., Gogra, A. B. et al. (2013). *Situation analysis Sierra Leone*. Retrieved from http://steps-centre.org/wp-content/uploads/Sierra_Leone_RU_230913_WEB.pdf

Muscle tension. (n.d.). Retrieved from http://www.34-menopause-symptoms.com/muscle-tension.htm

Nemeth, A. H. (2002). The genetics of primary dystonias and related disorders. *Brain, 125*, 695-721. Retrieved from http://brain.oxfordjournals.org/content/125/4/695.full.pdf

NHS. (2014). *Hyoscine Hydrobromide (Hyoscine hydrobromide 600micrograms/1ml solution for injection ampoules)*. Retrieved April 28, 2014, from http://www.nhs.uk/medicine-guides/

Numbela, E. R., & Valencia, C. R. (2003). *Guinea pig management manual*. Provo, UT. Retrieved from http://www.bensoninstitute.org/Publication/Manuals/guineapig.pdf

Pender, M. P. (2007, December). Tonic spasms and demyelinating lesion. *MedicineToday, 8*(12), 51-52. Retrieved from http://espace.library.uq.edu.au/eserv/UQ:124063/UQ_PV_124063.pdf

Republic of South Africa. (2011). *Cultivating pineapples*. Retrieved from http://www.nda.agric.za/docs/Infopaks/pineapples.pdf

Robinson, R., & Cataldo, L. J. (2011). Muscle spasm and cramps. In L. J. Fundukian (Ed.), *The Gale Encyclopedia of Medicine* (Volume 4, 4th ed., pp. 2955-2957). Detroit.

Samuel, L. A. (2009). Pharmacotherapy update: Hyoscine Butylbromide in the treatment of abdominal spasms. *Clinical Medicine: Therapeutics, 1*, 647-655.

Sukajintanakarn, D., & Mitrabhakdi, E., & Phanthumchinda, K. (2006). Acquired Neuromyotonia (Isaacs' Syndrome): A case report with autonomic physiologic studies.

Journal of the Medical Association of Thailand, *89*(8), 1-3. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/17048446

Tan, E-K., & Jankovic, J. (2001). Psychogenic hemifacial spasm. *The Journal of Neuropsychiatry & Clinical Neurosciences, 13*(3), 380-384. Retrieved from http://journals.psychiatryonline.org/data/Journals/NP/3911/380.pdf

Tiwari, P., Kumar, B., Kaur, M., Kaur, G., Kaur, H., & Dayal, R. (2011). Spasmolytic, antidiarrhoeal and intestinal modulatory activities of Ethanolic extract of stem of *Tinospora Cordifolia* on isolated Rat Ileum. *Internationale Pharmaceutic Asciencia, 1*(1), 123-132. Retrieved from http://www.ipharmsciencia.com/Dacuments/1/14.pdf

Wu, L. C., & Jankovic, J. (n.d.). Different faces of hemifacial spasm: Etiological classification. Baylor College of Medicine. Available at https://www.bcm.edu/departments/neurology/pdf/poster_pdcmdc_HFS_MDS.pdf