

Nutritional management of surgically induced menopause: A case report

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Abstract

Hot flashes are a primary reason for medical visits during menopause. They can interfere with sleep, cause mood disturbances, decrease the overall quality of life, and are associated with significant health care and societal costs. This case report examines the safety and effectiveness of *Lepidium peruvianum* (maca) for the management of menopausal-related symptoms. A 32-year-old White female presented with hot flashes, night sweats, anxiety, and mood changes following a hysterectomy and oophorectomy. She was provided with a personalized nutrition plan, *Lepidium peruvianum* (maca), targeted nutrient supplementation, and lifestyle recommendations. These interventions resulted in the safe and effective resolution of hot flashes and anxiety in 2 months and significantly improved her moods and sleep. This case report demonstrated that the use of *Lepidium peruvianum*, in conjunction with dietary and targeted supplement modifications, appeared to be safe and resulted in the rapid improvements and resolution of symptoms associated with menopause.

Keywords

case report, hot flashes, hysterectomy, *Lepidium peruvianum*, menopause

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Introduction

Menopause is medically defined as 12 consecutive months without a menstrual cycle and is a natural stage of a woman's life cycle.^{1,2} Women in surgical menopause from a hysterectomy experience a rapid decline in estrogen levels accompanied by menopausal symptoms such as hot flashes, anxiety, depression, and decreased quality of life.

Hot flashes are one of the many symptoms women experience in menopause.¹ It has been reported that 70%–75% of women may experience hot flashes that can last from 6 months to 2 or more years.^{2–4} Hot flashes are one of the primary reasons for medical visits because they can interfere with sleep, cause mood disturbances, and decrease the overall quality of life for women experiencing them.³ Psychosomatic symptoms such as anxiety and depression are among the mood disturbances that can present in menopause, with some studies suggesting “that perimenopausal women are more likely to develop depressive disorders without a previous history.”⁵ The management of menopausal symptoms carries significant health care and social

costs that include medical visits, laboratory testing, treatment protocols, and loss of productivity at work.⁵

This case report highlights a personalized nutrition approach that includes the use of *Lepidium peruvianum* and a food plan from the Institute for Functional Medicine (IFM) in a hysterectomized 32-year-old female to eliminate hot flashes and anxiety in 2 months. This case report was written following the CARE guidelines.⁶

Case narrative

A 32-year-old White female with a history of hormonal imbalance, including stage IV endometriosis, fibroids,

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Table 1. Timeline & dietary and lifestyle intervention recommendations.

	3/11/2019	4/1/19	5/13/19	9/16/19
Assessment tools and biometrics				
Medical Screening Questionnaire (MSQ)	35	23	15	25
Greene Climacteric Scale	37	23	9	5
Height	60"	60"	60"	60"
Weight	124 lbs.	120 lbs.	118 lbs.	118 lbs.
Dietary				
Institute of Functional Medicine (IFM) Detox Food Plan with 80 oz water daily	Yes	Yes	Yes	Yes
Supplements				
FemmenessencePRO (Maca-GO) (Symphony Natural Health, West Valley City, UT)	2 bid	2 bid	2 bid	1 bid
Wellness Essentials for Women (Metagenics, San Clemente, CA)	1 qd	1 qd	1 qd	1 qd
NAC 900 mg (Pure Encapsulation, Sudbury, MA)	1 bid	1 bid	1 bid	1 bid
AllQlear (Integrative Therapeutics, Green Bay, WI)	NA	1 bid	prn	prn
HistaEze (Designs for Health, Suffield, CT)	NA	NA	NA	prn
Lifestyle recommendations				
Belly breathing	Yes	Yes	Yes	Yes
Gratitude journal	Yes	Yes	Yes	Yes
Exercise 150 min per week	Yes	Yes	Yes	Yes

prn: as needed; qd: once daily; bid: twice daily.

infertility, painful and heavy menstrual cycles, and premenstrual syndrome (PMS) sought nutritional counseling. Her primary concerns included hot flashes, night sweats (disrupting her sleep multiple times per night), changes in moods, and anxiety. She expressed concern for long-term bone health due to early menopause.

The client had four surgeries for endometriosis and fibroids. She underwent in vitro fertilization (IVF) two times before successfully maintaining a pregnancy, resulting in twin girls. After childbirth, the final surgery to address ongoing endometriosis was concluded with a hysterectomy and oophorectomy at age 30. She was prescribed hormone replacement therapy (Premarin) following the procedure. The client reported feeling "great for 6 months," and then she began to notice changes in mood, including generalized sadness, anxiety, and becoming short-tempered and angry. She also began experiencing frequent and intense hot flashes disrupting her work and sleep. Her prescribing physician increased Premarin to 0.9 mg daily. By the time of the initial consultation with the nutritionist, the client had weaned her Premarin dosage to twice weekly due to ineffectiveness in symptom management.

The client also reports having environmental allergies, frequent colds, and exposure to chemicals while working as a hairdresser.

The client's antecedents, triggers, and mediators (ATMs) and Functional Medicine Matrix were considered in the development of the treatment plan.^{7,8}

Initial consultation: 11 March 2019

The client was assessed during a personalized consulting session, including the review of nutritional intake forms,

Medical Screening Questionnaire (MSQ), and Greene Climacteric Scale (GCS) (Tables 1 and 2). A thorough review of the client's health history was completed.

Based on this consultation, the client was advised to begin a comprehensive nutritional intervention that included the Institute for Functional Medicine (IFM) Detox Food Plan, targeted supplements that included *Lepidium peruvianum* (Maca-GO), a multi-vitamin-mineral/bone support supplement, fish oil, N-acetylcysteine (NAC), and lifestyle modifications (Table 1). The client expressed excitement and hope for the management of her concerns at the conclusion of the consultation.

Follow-up visit: 1 April 2019

The client returned in 3 weeks reporting several improvements (Tables 1 and 2). This included sleeping more soundly and through the night, uninterrupted by night sweats and further indicating that she sometimes had difficulty waking. The timing of Maca-GO was altered to be taken no later than 2:00 p.m. to support feeling more awake in the morning. Decreased anxiety (despite increased work stress) and 4-pound weight loss were reported.

The client demonstrated excellent adherence to the dietary protocol, supplements, and lifestyle interventions. She reported that she had not taken Premarin since the initial consultation. The nutritionist did not recommend this medication change.

The chief complaint of this visit included nasal stuffiness and congestion caused by seasonal allergies, as captured in the MSQ (Table 1). Seasonal allergy support was recommended (Table 1).

Table 2. Greene Climacteric Scale.

Symptom	3/11/2019	4/1/2019	5/13/2019	9/16/2019
Heart beating quickly or strongly	0	0	0	0
Feeling tense or nervous	3	2	0	0
Difficulty in sleeping	3	0	0	1
Excitable	2	1	1	0
Attacks of anxiety, panic	3	2	1	0
Difficulty in concentrating	2	2	0	0
Feeling tired or lacking in energy	2	2	1	1
Loss of interest in most things	2	1	1	0
Feeling unhappy or depressed	2	1	1	0
Crying spells	1	1	0	0
Irritability	3	2	1	1
Feeling dizzy or faint	1	0	0	0
Pressure or tightness in head	0	0	0	0
Part of body feels numb	0	0	0	0
Headaches	1	0	0	0
Muscle and joint pain	1	1	1	0
Loss of feeling in hands or feet	0	0	0	0
Breathing difficulties	2	1	1	1
Hot flashes	3	2	0	0
Sweating at night	3	2	0	0
Loss of interest in sex	3	3	1	1
SCORE	37	23	9	5

0: not at all; 1: a little; 2: often; 3: extreme.

Follow-up visit: 13 May 2019

The client returned 2 months following the initial consultation, happily reporting complete elimination of hot flashes and marked anxiety reduction. Increased self-awareness revealed the need to eat regularly and sufficiently to support blood sugar and mood regulation (Table 1).

The client reported 100% compliance with the food plan and supplements and reported an additional 2 pounds of weight loss but had not implemented the exercise or stress management protocols. The client credits the combined effect of the diet and supplements to feeling “very, very good” and commented that her husband had noticed the improvements in her moods and well-being.

Final follow-up: 16 September 2019

Due to work demands, follow-up consultations were scheduled but unfulfilled between the second follow-up (13 May 2019) and the final consultation. She remained highly compliant with diet and supplement changes and continued to improve stress management implementation, which included exercise. At this consultation, the client reports that anxiety was 100% resolved, and she remains free of hot flashes (Tables 1 and 2).

The client reported seasonal allergies/flare (dampness, leaves), resulting in watery, itchy eyes, itchy ears, and

sinus congestion. This was the reason for the increased score on the MSQ (Table 1). Additional allergy symptom relief recommendations were provided (Table 1).

The *Lepidium peruvianum* dosage was reduced to 1 capsule twice daily for maintenance. Wellness Essential for Women (multi-vitamin-mineral, bone support, and fish oil) and NAC will continue unchanged. Allergy support supplements will be used as needed during seasonal allergies. The food plan will remain in place while the client continues to implement lifestyle modifications further.

Client Perspective

Before seeing a nutritionist, I was on hormone replacement therapy and knew something was out of balance for me. I was feeling extra moody, and the hot flashes were unbearable. Rather than having the doctor up my dose again of the hormone replacement, I knew there had to be an alternative method. My nutritionist recommended a clean diet and a few supplements, and I was excited but nervous at the same time to get started. At just 32 years old, I did not want my hot flashes or moods to get worse. Now, I have experienced ZERO hot flashes and I attribute this mostly to Maca-GO. My moods improved vastly and my life just feels better. My kids and husband would certainly agree!

Discussion

The standard treatment for hot flashes and other menopausal symptoms has traditionally been to prescribe estrogen therapy or a combination of estrogen and progesterone therapy.¹ However, when hormone replacement therapy was found to increase cancer and cardiovascular disease risks, practitioners began searching for alternatives.^{9,10}

In this case, the personalized nutrition approach is focused on dietary changes and the use of a *Lepidium peruvianum* supplement. *Lepidium peruvianum*, commonly known as maca or Maca-GO, is a traditional medicine and food source in the Peruvian culture that has been used for a variety of health concerns, including improving energy and mood, enhancing fertility, increasing libido, improving prostate health for men, and balancing hormones in women.^{11–13} It is considered an adaptogen.¹⁴ Multiple studies have demonstrated how maca's different phenotypes, yellow, red, black, and purple, can have different physiological impacts on health.^{11,13,15,16}

The exact mechanism of action on hormones is not fully understood. Early studies “. . . suggest that action of maca relies on plant sterols, which act as chemical triggers to help the body itself produce a higher level of hormones appropriate to the age and gender of [sic] person taking it.”¹⁰ More recent studies specifically highlight that the glucosinolate levels have been linked to the variability of function, although there are multiple constituents of maca that may be playing a role.^{15,17} Research also suggests that the physiological effects can result from the conditions, specifically the altitude, in which the maca is grown.¹¹

While the exact mechanism of action may not be fully understood, multiple studies have demonstrated the safety and effectiveness of *Lepidium peruvianum* for reducing symptoms associated with perimenopause and menopause.^{10,18–21} Symptoms in these studies were assessed via the Kupperman Menopausal Index (KMI) and GCS. A significant ($p < 0.001$) reduction of hot flashes and anxiety along with improvements in sleep were among the improvements noted.^{10,18,20,21} In addition, *Lepidium peruvianum* has been shown to increase bone mineral density.¹³ An increased risk of osteoporosis occurs in women who undergo menopause naturally and further increases after a hysterectomy and oophorectomy, especially when either procedure takes place before 45 years of age.²¹

The Institute for Functional Medicine (IFM) Detox Food Plan was recommended and closely followed in this case. This food plan supports Phase 1 and Phase 2 detoxification through the intake of nutrient-rich foods, phytonutrients, fiber, and targeted antioxidants.²² Like the elimination diet, it removes common food triggers while supporting liver function through various food choices. This includes the consumption of high-quality animal protein, legumes, nuts and seeds, various fats and oils, fruits, gluten-free grains, and a wide selection of vegetables, including but not

limited to cruciferous vegetables, leafy greens, and thiols. When the toxic load is reduced and the detoxification pathways are appropriately supported, hormone metabolism will be supported.²³

This case report demonstrates that a 32-year-old woman in surgically induced menopause experienced the plethora of symptoms that one would expect to see in natural occurring menopause later in life. This was a result of stage IV endometriosis that was not resolved after multiple surgeries. The author believes the success of this case report is directly related to the use of *Lepidium peruvianum*. Numerous studies have demonstrated this supplement's effectiveness for hot flashes, night sweats, and improvements in moods with symptom relief realized in as little as a few days to 2 months. This client experienced the same. While a personalization intervention plan was included, it may be possible that using only *Lepidium peruvianum* may be a viable option for some individuals. The author suggests that using supplementation to resolve symptoms first may make it easier to follow and sustain dietary and lifestyle changes.

Limitations

First, with a multi-modal approach to clinical care, it is not possible to definitively conclude which intervention(s) were responsible for symptom improvements. Second, the time between follow-up consultations was too lengthy. Symptom improvements suggest that a reduction in Maca-GO prior to the final visit would have been ideal. Third, “While case reports have the potential to detect signals of causal relations, they usually cannot exclude the possibility of a chance association.”⁶ Furthermore, the results from one case study cannot be representative of a larger population. Future studies that involve a larger number of participants would be warranted to better evaluate how *Lepidium peruvianum* can benefit women in menopause. Finally, the author proposes that a case report demonstrating the use of only one intervention at a time would help to assess the effectiveness of each therapy properly.

Conclusion

This case demonstrates the safe and effective use of a personalized nutrition approach, *Lepidium peruvianum*, additional targeted supplements, and lifestyle protocols to manage menopausal symptoms in a 32-year-old female who underwent a hysterectomy and oophorectomy secondary to endometriosis. The client reported complete resolution of hot flashes and anxiety in 2 months while also learning how to implement a long-term nutrition and lifestyle plan.

The current body of literature available on *Lepidium peruvianum* (maca) suggests that the various phenotypes are used for multiple conditions and provide different

health outcomes. In addition, due to the popularity of maca as a supplement, maca's cultivation was approved in China in 2002. It is important to note that most studies published have been completed on Peruvian maca.¹³ Sorting through this information can be time-consuming and burdensome for clinicians in clinical practice. Therefore, the author believes that a case report, such as this, is one method that healthcare providers and nutritionists can learn about existing research's clinical application.

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Informed consent

The client presented in this case report provided written informed consent for the publication of patient information in the present manuscript. The client also was given a copy of the manuscript to read and review.

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References

1. Takahashi TA and Johnson KM. Menopause. *Med Clin North Am* 2015; 99(3): 521–534.
2. Burbos N and Morris EP. Menopausal symptoms. *BMJ Clin Evid* 2011; 2011: 0804.
3. Freeman EW, Sammel MD, Lin H, et al. Duration of menopausal hot flashes and associated risk factors. *Obstet Gynecol* 2011; 117(5): 1095–1104.
4. The North American Menopause Society. Menopause FAQs: hot flashes, <https://www.menopause.org/for-women/menopause-faqs-hot-flashes> (2021, accessed 14 February 2021).
5. Augoulea A, Moros M, Lykeridou A, et al. Psychosomatic and vasomotor symptom changes during transition to menopause. *Prz Menopauzalny* 2019; 18(2): 110–115.
6. Riley DS, Barber MS, Kienle GS, et al. CARE guidelines for case reports: explanation and elaboration document. *J Clin Epidemiol* 2017; 89: 218–235.
7. Bland J. Defining function in the functional medicine model. *Integr Med* 2017; 16(1): 22–25.
8. Hanaway P. Form follows function: a functional medicine overview. *Perm J* 2016; 20(4): 16–109.
9. Chen LR, Ko NY and Chen KH. Isoflavone supplements for menopausal women: a systematic review. *Nutrients* 2019; 11(11): 2649. doi: 10.3390/nu11112649
10. Meissner HO, Kapczynski W, Mscisz A, et al. Use of gelatinized maca (*Lepidium peruvianum*) in early postmenopausal women. *Int J Biomed Sci* 2005; 1(1): 33–45.
11. Meissner HO, Mscisz A, Baraniak M, et al. Peruvian maca (*Lepidium peruvianum*)—III: the effects of cultivation altitude on phytochemical and genetic differences in the four prime maca phenotypes. *Int J Biomed Sci* 2017; 13(2): 58–73.
12. Meissner HO, Mscisz A, Kedzia B, et al. Peruvian maca: two scientific names *Lepidium meyenii* Walpers and *Lepidium peruvianum* Chacon—are they phytochemically-synonymous? *Int J Biomed Sci* 2015; 11(1): 1–15.
13. Beharry S and Heinrich M. Is the hype around the reproductive health claims of maca (*Lepidium meyenii* Walp.) justified? *J Ethnopharmacol* 2018; 211: 126–170.
14. López-Fando A, Gómez-Serranillos MP, Iglesias I, et al. *Lepidium peruvianum* chacon restores homeostasis impaired by restraint stress. *Phytother Res* 2004; 18(6): 471–474.
15. Meissner HO, Mscisz A, Mrozkiewicz M, et al. Peruvian maca (*Lepidium peruvianum*): (I) phytochemical and genetic differences in three maca phenotypes. *Int J Biomed Sci* 2015; 11(3): 131–145.
16. Meissner HO, Mscisz A, Piatkowska E, et al. Peruvian maca (*Lepidium peruvianum*): (II) phytochemical profiles of four prime maca phenotypes grown in two geographically-distant locations. *Int J Biomed Sci* 2016; 12(1): 9–24.
17. Wang S and Zhu F. Chemical composition and health effects of maca (*Lepidium meyenii*). *Food Chem* 2019; 288: 422–443.
18. Meissner HO, Reich-Bilinska H, Mscisz A, et al. Therapeutic effects of pre-gelatinized maca (*Lepidium peruvianum* Chacon) used as a non-hormonal alternative to HRT in perimenopausal women—clinical pilot study. *Int J Biomed Sci* 2006; 2(2): 143–159.
19. Meissner HO, Mscisz A, Reich-Bilinska H, et al. Hormone-balancing effect of pre-gelatinized organic maca (*Lepidium peruvianum* Chacon): (III) clinical responses of early-postmenopausal women to maca in double blind, randomized, placebo-controlled, crossover configuration, outpatient study. *Int J Biomed Sci* 2006; 2(4): 375–394.
20. Meissner HO, Mscisz A, Reich-Bilinska H, et al. Hormone-balancing effect of pre-gelatinized organic maca (*Lepidium peruvianum* Chacon): (II) physiological and symptomatic responses of early-postmenopausal women to standardized doses of maca in double blind, randomized, placebo-controlled, multi-centre clinical study. *Int J Biomed Sci* 2006; 2(4): 360–374.
21. Secoşan C, Balint O, Pirtea L, et al. Surgically induced menopause—a practical review of literature. *Medicina* 2019; 55(8): 482.
22. Hodges RE and Minich DM. Modulation of metabolic detoxification pathways using foods and food-derived components: a scientific review with clinical application. *J Nutr Metab* 2015; 2015: 760689.
23. Kur P, Kolasa-Wołoskiuk A, Misiakiewicz-Has K, et al. Sex hormone-dependent physiology and diseases of liver. *Int J Environ Res Public Health* 2020; 17(8): 2620.