CLINICAL VIGNETTE

Acupuncture for Refractory Dysmenorrhea

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Introduction

Dysmenorrhea is a common problem in reproductive-age women often impacting daily life and can lead to severe disability. We present a case of refractory dysmenorrhea that improved with acupuncture treatment.

Case

A 33-year-old woman was seen by the UCLA Center for East-West Medicine (CEWM) complaining of severe dysmenorrhea. Starting with menarche at age 12, she had cyclical pelvic pain and cramping beginning one week prior to menses and ending several days into menses. The pain was rated up to 10/10 in quality and resulted in several emergency department visits for pain control and absenteeism from work and school. Her menstrual cycles were regular at every 33 to 36 days and lasting for 5 to 6 days per cycle. Evaluation with pelvic ultrasound was normal without evidence of fibroids, adhesions, ovarian cysts, or other abnormalities. She had seen gynecology and was diagnosed with primary dysmenorrhea. Combined oral contraceptive pills were prescribed which caused mood dysregulation and were subsequently discontinued. NSAIDs and acetaminophen were also tried, but did not provide adequate pain control.

The patient presented to the UCLA CEWM in search of complementary treatment options for her dysmenorrhea. She was treated with acupuncture and dietary modifications. Acupuncture was performed with variations of the points Zigongxue, SP10, SP6, LV3. After two treatments, she noted improvement in her menstrual pain with pain severity decreased from 10/10 to 5/10 pain over subsequent menstrual cycles. After six treatments, she noted minimal pain with menstruation. She continues to be seen monthly in the clinic for maintenance acupuncture with persistent improvement in her pain.

Discussion

Between 50 and 90 percent of reproductive-age women experience painful menstrual periods with the majority suffering from primary dysmenorrhea.[1,2] This can have a significant effect on school attendance or work productivity.[3,4] Risk factors include young age, smoking, stress, and family history.[1]

The goal of treatment in dysmenorrhea is to provide symptomatic pain relief. First-line pharmacologic therapy includes non-steroidal anti-inflammatory drugs (NSAIDs), acetaminophen or paracetamol, as well as hormonal contraceptives.[5,6] Second-line pharmacotherapy includes GnRH analogues such as leuprolide, nafarelin, goserelin, or elagolix.[7] If patients do not respond to first-line or second-line pharmacotherapy, diagnostic laparoscopy is considered to evaluate for pelvic pathology such as endometriosis. Endometrial ablation and hysterectomy are considered as a last resort in refractory patients.[8]

Nonpharmacologic interventions for the management of dysmenorrhea are an essential component of treatment relief and patients are often seeking to optimize these before considering more invasive treatment options. First line intervention should include exercise and applying heat packs to the lower abdomen.[9,10] Transcutaneous electric nerve stimulation (TENS) may also be considered and has been shown to reduce pain compared to placebo.[11] Combination of nonpharmacologic modalities such as TENS with heat have shown increased efficacy.[12]

Additional supportive therapies such as behavioral counseling include hypnotherapy, desensitization, imagery, coping, biofeedback, electromyographic training, Lamaze exercises, and relaxation techniques have shown potential but are supported by limited or weak evidence. A systematic review found these therapies to be beneficial in some women.[13]

Various dietary changes and supplements have also been evaluated, including a low fat vegetarian diet, increased dairy intake, vitamin E, vitamin B1, vitamin B6, vitamin D3, and ginger powder, which are associated with some reduction in dysmenorrhea.[14-24]

Acupuncture stimulation results in the release of endogenous opioid peptides and has been shown to produce neural responses in various areas of the brain and increase vagal activity through the somato-autonomic reflex.[25-27] Over 4,000 studies on acupuncture for the treatment of dysmenorrhea have been published, but the quality of these are generally low and widely vary in design. It is difficult to perform high-quality standardized randomized controlled trials (RCTs) assessing acupuncture efficacy. Clinical trials often differ in acupuncture technique, number of acupuncture points, location of acupuncture points, number of sessions, and duration of each session.

A 2016 *Cochrane* review meta-analysis of 42 RCTs on acupuncture and acupressure was unable to determine efficacy

in treatment of primary dysmenorrhea compared to sham acupuncture, acupressure, and no treatment.[28] In a separate meta-analysis in 2018, a review of 49 RCTs evaluating acupuncture alone found that acupuncture and electroacupuncture were more effective than both no treatment and NSAIDs at reducing menstrual pain.[29]

It is worth noting that there has been a wide variation in the results of the studies included in each meta-analysis. Several studies found significant improvements in menstrual pain, whereas other studies showed no significant effect, which limits qualified evidence to determine the effectiveness of acupuncture in primary dysmenorrhea.[30] Differences in technique was observed with studies evaluating dry needling, warm acupuncture, electroacupuncture, auricular acupuncture, and acupressure compared to placebo, NSAIDs, and sham acupuncture.[31] Despite the available data to date, additional studies that are well-designed and of high quality are needed to further determine the efficacy of acupuncture in the management of dysmenorrhea.

Conclusion

We presented a case of refractory dysmenorrhea that significantly improved with acupuncture after failing first-line pharmacotherapy. Dysmenorrhea is widely prevalent and although quality research is needed to evaluate the efficacy of acupuncture and other complementary treatments, it is important that clinicians are aware of the available complementary treatment modalities.

REFERENCES

1. **Ju H, Jones M, Mishra G**. The prevalence and risk factors of dysmenorrhea. *Epidemiol Rev*. 2014;36:104-13. doi: 10.1093/epirev/mxt009. Epub 2013 Nov 26. PMID: 24284871.
2. **Schoep ME, Nieboer TE, van der Zanden M, Braat DDM, Nap AW**. The impact of menstrual symptoms on everyday life: a survey among 42,879 women. *Am J Obstet Gynecol*. 2019 Jun;220(6):569.e1-569.e7. doi: 10.1016/j.ajog.2019.02.048. Epub 2019 Mar 15. PMID: 30885768.
3. **Klein JR, Litt IF**. Epidemiology of adolescent dysmenorrhea. *Pediatrics*. 1981 Nov;68(5):661-4. PMID: 7312467.
4. **Schoep ME, Adang EMM, Maas JWM, De Bie B, Aarts JWM, Nieboer TE**. Productivity loss due to menstruation-related symptoms: a nationwide cross-sectional survey among 32 748 women. *BMJ Open*. 2019 Jun 27;9(6):e026186. doi: 10.1136/bmjopen-2018-026186. PMID: 31248919; PMCID: PMC6597634.
5. **Wong CL, Farquhar C, Roberts H, Proctor M**. Oral contraceptive pill for primary dysmenorrhoea. *Cochrane Database Syst Rev*. 2009 Oct 7;2009(4):CD002120. doi: 10.1002/14651858.CD002120.pub3. PMID: 19821293; PMCID: PMC7154221.
6. **Marjoribanks J, Ayeleke RO, Farquhar C, Proctor M**. Nonsteroidal anti-inflammatory drugs for dysmenorrhoea. *Cochrane Database Syst Rev*. 2015 Jul 30;2015(7):CD001751. doi: 10.1002/14651858.CD001751.pub3. PMID: 26224322; PMCID: PMC6953236.
7. **Ling FW**. Randomized controlled trial of depot leuprolide in patients with chronic pelvic pain and clinically suspected endometriosis. Pelvic Pain Study Group. *Obstet Gynecol*. 1999 Jan;93(1):51-8. doi: 10.1016/s0029-7844(98)00341-x. PMID: 9916956.
8. ACOG practice bulletin. Medical management of endometriosis. Number 11, December 1999.
9. **Matthewman G, Lee A, Kaur JG, Daley AJ**. Physical activity for primary dysmenorrhea: a systematic review and meta-analysis of randomized controlled trials. *Am J Obstet Gynecol*. 2018 Sep;219(3):255.e1-255.e20. doi: 10.1016/j.ajog.2018.04.001. Epub 2018 Apr 7. PMID: 29630882.
10. **Akin M, Price W, Rodriguez G Jr, Erasala G, Hurley G, Smith RP**. Continuous, low-level, topical heat wrap therapy as compared to acetaminophen for primary dysmenorrhea. *J Reprod Med*. 2004 Sep;49(9):739-45. PMID: 15493566.
11. **Proctor ML, Smith CA, Farquhar CM, Stones RW**. Transcutaneous electrical nerve stimulation and acupuncture for primary dysmenorrhoea. *Cochrane Database Syst Rev*. 2002;(1):CD002123. doi: 10.1002/14651858.CD002123. PMID: 11869624.
12. **Igwea SE, Tabansi-Ochuogu CS, Abaraogu UO**. TENS and heat therapy for pain relief and quality of life improvement in individuals with primary dysmenorrhea: A systematic review. *Complement Ther Clin Pract*. 2016 Aug;24:86-91. doi: 10.1016/j.ctcp.2016.05.001. Epub 2016 May 7. PMID: 27502806.
13. **Proctor ML, Murphy PA, Pattison HM, Suckling J, Farquhar CM**. Behavioural interventions for primary and secondary dysmenorrhoea. *Cochrane Database Syst Rev*. 2007 Jul 18;2007(3):CD002248. doi: 10.1002/14651858.CD002248.pub3. PMID: 17636702; PMCID: PMC7137212.
14. **Barnard ND, Scialli AR, Hurlock D, Bertron P**. Diet and sex-hormone binding globulin, dysmenorrhea, and premenstrual symptoms. *Obstet Gynecol*. 2000 Feb;95(2):245-50. doi: 10.1016/s0029-7844(99)00525-6. PMID: 10674588.
15. **Abdul-Razzak KK, Ayoub NM, Abu-Taleb AA, Obeidat BA**. Influence of dietary intake of dairy products on dysmenorrhea. *J Obstet Gynaecol Res*. 2010 Apr;36(2):377-83. doi: 10.1111/j.1447-0756.2009.01159.x. PMID: 20492391.
16. **Ziaei S, Faghihzadeh S, Sohrabvand F, Lamyian M, Emamgholy T**. A randomized placebo-controlled trial to determine the effect of vitamin E in treatment of primary dysmenorrhoea. *BJOG*. 2001 Nov;108(11):1181-3. doi: 10.1111/j.1471-0528.2003.00279.x. PMID: 11762659.
17. **Ziaei S, Zakeri M, Kazemnejad A**. A randomised controlled trial of vitamin E in the treatment of primary dysmenorrhoea. *BJOG*. 2005 Apr;112(4):466-9. doi: 10.1111/j.1471-0528.2004.00495.x. PMID: 15777446.
18. **Proctor ML, Murphy PA**. Herbal and dietary therapies for primary and secondary dysmenorrhoea. *Cochrane*

Database Syst Rev. 2001;(3):CD002124. doi: 10.1002/14651858.CD002124. Update in: Cochrane Database Syst Rev. 2016;3:CD002124. PMID: 11687013.

19. **Lasco A, Catalano A, Benvenga S**. Improvement of primary dysmenorrhea caused by a single oral dose of vitamin D: results of a randomized, double-blind, placebo-controlled study. *Arch Intern Med*. 2012 Feb 27;172(4): 366-7. doi: 10.1001/archinternmed.2011.715. PMID: 22371927.
20. **Sanders KM, Stuart AL, Williamson EJ, Simpson JA, Kotowicz MA, Young D, Nicholson GC**. Annual high-dose oral vitamin D and falls and fractures in older women: a randomized controlled trial. *JAMA*. 2010 May 12; 303(18):1815-22. doi: 10.1001/jama.2010.594. Erratum in: *JAMA*. 2010 Jun 16;303(23):2357. PMID: 20460620.
21. **Daily JW, Zhang X, Kim DS, Park S**. Efficacy of Ginger for Alleviating the Symptoms of Primary Dysmenorrhea: A Systematic Review and Meta-analysis of Randomized Clinical Trials. *Pain Med*. 2015 Dec;16(12):2243-55. doi: 10.1111/pme.12853. Epub 2015 Jul 14. PMID: 26177393.
22. **Shirvani MA, Motahari-Tabari N, Alipour A**. The effect of mefenamic acid and ginger on pain relief in primary dysmenorrhea: a randomized clinical trial. *Arch Gynecol Obstet*. 2015 Jun;291(6):1277-81. doi: 10.1007/s00404-014-3548-2. Epub 2014 Nov 16. PMID: 25399316.
23. **Ozgoli G, Goli M, Moattar F**. Comparison of effects of ginger, mefenamic acid, and ibuprofen on pain in women with primary dysmenorrhea. *J Altern Complement Med*. 2009 Feb;15(2):129-32. doi: 10.1089/acm.2008.0311. PMID: 19216660.
24. **Rahnama P, Montazeri A, Huseini HF, Kianbakht S, Naseri M**. Effect of Zingiber officinale R. rhizomes (ginger) on pain relief in primary dysmenorrhea: a placebo randomized trial. *BMC Complement Altern Med*. 2012 Jul 10;12:92. doi: 10.1186/1472-6882-12-92. PMID: 22781186; PMCID: PMC3518208.
25. **Pomeranz B**. Acupuncture analgesia – basic research. In: Styx G. Hammersclag R, eds. *Clinical Acupuncture: Scientific Basis*. Berlin:Springer-Verlag; 2000. Pgs 1-28.
26. **Choi EM, Jiang F, Longhurst JC**. Point specificity in acupuncture. *Chin Med*. 2012 Feb 28;7:4. doi: 10.1186/1749-8546-7-4. PMID: 22373514; PMCID: PMC3311034.
27. **Zhao ZQ**. Neural mechanism underlying acupuncture analgesia. *Prog Neurobiol*. 2008 Aug;85(4):355-75. doi: 10.1016/j.pneurobio.2008.05.004. Epub 2008 Jun 5. PMID: 18582529.
28. **Smith CA, Armour M, Zhu X, Li X, Lu ZY, Song J**. Acupuncture for dysmenorrhoea. *Cochrane Database Syst Rev*. 2016 Apr 18;4:CD007854. doi: 10.1002/14651858.CD007854.pub3. PMID: 27087494.
29. **Woo HL, Ji HR, Pak YK, Lee H, Heo SJ, Lee JM, Park KS**. The efficacy and safety of acupuncture in women with primary dysmenorrhea: A systematic review and meta-analysis. *Medicine (Baltimore)*. 2018 Jun;97(23):e11007. doi: 10.1097/MD.0000000000011007. PMID: 29879061; PMCID: PMC5999465.
30. **Zhang F, Sun M, Han S, Shen X, Luo Y, Zhong D, Zhou X, Liang F, Jin R**. Acupuncture for Primary Dysmenorrhea: An Overview of Systematic Reviews. *Evid Based Complement Alternat Med*. 2018 Nov 21;2018:8791538. doi: 10.1155/2018/8791538. PMID: 30584456; PMCID: PMC6280308.
31. **Gaubeca-Gilarranz A, Fernández-de-Las-Peñas C, Medina-Torres JR, Seoane-Ruiz JM, Company-Palonés A, Cleland JA, Arias-Buría JL**. Effectiveness of dry needling of rectus abdominis trigger points for the treatment of primary dysmenorrhoea: a randomised parallel-group trial. *Acupunct Med*. 2018 Oct;36(5):302-310. doi: 10.1136/acupmed-2017-011566. Epub 2018 May 2. PMID: 29720379.