

The Effectiveness of Neuraltherapy in the Treatment of Vaginitis

Vajinit Tedavisinde Nöralterapi'nin Etkinliği

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ABSTRACT Objective: In this study, we approached vaginitis, which we encounter so frequently in our daily practice, from a different point of view. Based on regulatory effects of neural therapy (NT), we applied NT to the patients with a complaint of vaginitis in order to regulate the perfusion and innervation of the vaginal mucosa and to improve lymphatic drainage. In this study, we intended to treat vaginitis with the immun system modulating effects of NT. However, we aimed to treat vaginitis by means of the immun system which is regulated with NT. **Material and Methods:** 25 patients who were admitted to our polyclinic due to vaginal discharge were included in the study. In the patients, procaine was injected intracutaneously into the T11-L2 and S2-S4 dermatomes (urogenital region sympathetic innervation from T11-L2 segments and parasympathetic innervation from S2-S4) segments (including the entire pelvic area as well as the vaginal area) over 3 sessions 1 week apart. Procaine was injected intracutaneously into the relevant site for stimulating the lymphatic system of the lower extremity. At the end of the 1st and 2nd months, the patients were called for check and were asked to give a vaginal culture. **Results:** When the patients were evaluated at the end of the 1st month, it was observed that the complaints of 23 patients (except for 2 patients) regressed and 17 patients were completely recovered. When the vaginal culture results of the patients were evaluated, it was determined that 16 patients had negative culture results. It was observed that mucosal hyperemia and fragility present in the patients were completely regressed and improved. When the patients were evaluated at the end of the 2nd month, it was determined that 19 patients had negative culture results. **Conclusion:** In conclusion, the treatment of vaginitis is vaginal flora regulation. In the lower urogenital tract where parasympathetic innervation is dominant, NT allows vaginal flora regulation and the treatment of vaginitis. The purpose of neural therapy is to regulate the perfusion and innervation of the vaginal mucosa and to provide lymphatic drainage. NT is a regulatory therapy. It may become an effective method in the treatment of vaginitis by regulating both the perfusion and innervation of the vaginal mucosa.

Keywords: Vaginitis; neuraltherapy; local anesthetics; procain

ÖZET Amaç: Bu çalışmada günlük pratiğimizde sıkça karşılaştığımız vajiniti farklı bir bakış açısıyla ele aldık. Nöralterapi (NT)'nin düzenleyici etkilerine dayanarak, vajinal mukozanın perfüzyonunu ve innervasyonunu düzenlemek ve lenfatik drenajı iyileştirmek amacıyla vajinit şikayeti olan hastalara NT uyguladık. Bu çalışmada NT'nin bağırsıklık sistemi düzenleyici etkileri ile vajiniti tedavi etmeyi amaçladık. Bununla birlikte, NT ile regüle edilen bağırsıklık sistemi aracılığıyla vajiniti tedavi etmeyi amaçladık. **Gereç ve Yöntemler:** Çalışmaya vajinal akıntı nedeniyle polikliniğimize başvuran 25 hasta dahil edildi. Hastalara 1 hafta aralya 3 seansta prokain intrakutan olarak T11- L2 ve S2-S4 dermatomlarına (ürogenital bölge sempatik innervasyonunu T11- L2 segmentlerinden, parasempatik innervasyonunu ise S2-S4 segmentlerinden alır) (tüm pelvik bölge ve vajinal bölge dahil) enjekte edildi. 1. ve 2. ayın sonunda hastalar kontrol için çağrıldı ve vajinal bir kültür vermeleri istendi. **Bulgular:** Hastalar 1. ayın sonunda değerler dirildiğinde, 23 hastanın (2 hasta hariç) şikayetlerinin gerilediği ve 17 hastanın tamamen iyileştiği görüldü. Vajinal kültür sonuçları değerlendirildiğinde, 16 hastanın kültür sonuçlarının negatif olduğu tespit edildi. Hastalarda bulunan mukozal hiperemi ve frajilitenin tamamen gerilediği ve düzeldiği gözlemlendi. Hastalar 2. ayın sonunda değerlendirildiğinde, 19 hastanın kültür sonuçlarının negatif olduğu tespit edildi. **Sonuç:** Sonuç olarak, vajinit tedavisi vajinal flora regülasyonudur. Parasempatik innervasyonun baskın olduğu alt ürogenital sistemde, NT vajinal flora regülasyonuna ve vajinit tedavisine imkan verir. NT'nin amacı vajinal mukozanın perfüzyonunu ve innervasyonunu düzenlemek ve lenfatik drenaj sağlamaktır. Nöralterapi düzenleyici bir tedavidir. Vajinal mukozanın hem perfüzyonunu hem de innervasyonunu düzenleyerek vajinitin tedavisinde etkili bir yöntem olabilir.

Anahtar Kelimeler: Vajinit; nöralterapi; lokal anestezikler; prokain

5-10 million women are admitted to gynecology outpatient clinics with vaginal discharge complaint every year.¹ The three most common agents of infectious vaginitis are bacterial vaginosis (BV), trichomoniasis, and vulvovaginal candidiasis (VVC).² The most common admission complaints of patients with infectious vaginitis are vaginal discharge, vaginal itching, and vulvovaginal burning sensation. However, this condition is not always symptomatic and often cannot be treated effectively.³ The most common causative agent in patients with vaginal discharge is vulvovaginal candidiasis, and it is seen in approximately 75% of reproductive-age women. Recurrence may occur in approximately 40-50% of patients with VVC.⁴ Typical symptoms of VVC are intense itching and cheese-like, white-gray vaginal discharge. The incidence of VVC is increasing in conditions (such as pregnancy, antibiotic therapy, diabetes, and oral contraceptive (OC) use) that suppress or disrupt the immune system.⁵ BV is the most common cause of bacterial vaginal discharge. The lactobacilli are predominant in the normal vaginal flora; however, there is a flora consisting of *Gardnerella vaginalis* (*G. vaginalis*), *Bacteroides* species, *Mobiluncus* species, and *Mycoplasma hominis* in cases of BV, which leads to vaginitis.⁶ 50% of BV patients do not display any symptoms.⁴ Multiple sex partners, intrauterine devices (IUD) use, antibiotic therapy, hygiene, nutritional status, and menstrual cycle are factors that increase the risk of BV. *Trichomonas vaginalis* (*T. vaginalis*) is a sexually transmitted protozoan that moves through ciliate action and is commonly seen throughout the world. *T. vaginalis* is most commonly seen in the 16-35 age group. *T. vaginalis* infection may be symptomatic or asymptomatic.^{7,8} The most common admission complaints in trichomonas vaginitis are sticky, frothy, yellow-green, and smelly discharge and vulvar and vaginal itching. Patients who are admitted due to vaginal discharge complaint should also be investigated for gonorrhea and chlamydia.

MATERIAL AND METHODS

25 patients who were admitted to our polyclinic due to vaginal discharge between January 2017 and March 2017 were included in the study. The pa-

tients' age, educational levels, number of pregnancies, number of partners in the last year, type of contraceptive methods, cigarette smoking, alcohol consumption, and antibiotic intake were recorded. Before the clinical examination, questions were asked about the characteristics of vaginal discharge and about whether or not there were other accompanying symptoms such as itching, dysuria, lower abdominal pain, dyspareunia, and postcoital bleeding. Such characteristics of the vaginal discharge as smell, color, and density were examined in pelvic examination performed using a speculum. In addition, cervical hyperemia, erosion, fragility and other lesions (ulcer, condyloma, herpes) were investigated. Patients with diabetes mellitus, immunodeficiency disorders, and other comorbidities were excluded from the study.

In the patients, procaine was injected intracutaneously into the T11-L2 and S2-S4 dermatomes (urogenital region sympathetic innervation from T11-L2 segments and parasympathetic innervation from S2-S4) (including the entire pelvic area as well as the vaginal area) over 3 sessions 1 week apart. 5 cc of procaine was bilaterally injected into the uterovaginal plexus only in the first session. Procaine was injected intracutaneously into the relevant site for stimulating the lymphatic system of the lower extremity into the S2-S4 dermatomes. No medication was given to any patient for vaginitis. At the end of the 1st and 2nd months, the patients were called for check and were asked to give a vaginal culture.

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RESULTS

The ages of the patients who participated in our study ranged from 19 to 58 years (mean: 30.33 years). Except for 2 patients who had no sexual partner, all other patients stated that they were sexually monogamous within the last year. According to the examination of vaginal specimens, *Candida* species were isolated from 14 (56%) patients and *G. vaginalis* was isolated from 7 (28%) patients. In 4 (16%)

patients, no agents were detected in the examination of vaginal specimens, and the normal bacterial flora of the vagina grew. No statistically significant relationship was found between age groups of patients and causative agents of vaginal discharge.

Of the patients, 6 (24%) smoked cigarettes and 2 (8%) consumed alcohol. There was no relationship between smoking, alcohol consumption, and causative agents.

18 (72%) patients had a previous history of vaginitis and had received prior treatment. 9 (36%) of patients diagnosed with VVC had a previous history of candidiasis. 4 (16%) patients diagnosed with BV had a previous history of BV. The distribution of causative agents of vaginal discharge according to the presence of vaginitis history is shown in (Table 1). Moreover, 3 patients developed candidiasis after taking antibiotics.

When the contraceptive methods of the patients were examined, 8 (32%) patients used coitus interruptus, 3 (12%) patients used condoms, 7 (28%) patients used OC, and 4 (16%) patients used IUD. Other patients stated that they did not use any contraceptive method (Table 2).

Of the patients, 4 (16%) had smelly discharge, 13 (52%) had white and cheese-like discharge, and 5 (20%) had green and frothy discharge. Of the patients, 2 had dysuria, 11 had lower abdominal pain, and 1 had dyspareunia.

Procaine is known to be a local anesthetic agent as well as to have local analgesic, anti-inflammatory, anti-bacterial, and anti-candidal effects. Besides all these effects, it plays a role in the regulation of blood circulation and mucosal perfusion in the vaginal area thanks to its stimulating effect on the autonomic nervous system during neural therapy (NT).

When the patients were evaluated at the end of the 1st month, it was observed that the complaints of 23 patients (except for 2 patients) regressed and 17 patients were completely recovered. When the vaginal culture results of the patients were evaluated, it was determined that 16 patients had negative culture results. It was observed that mucosal

TABLE 1: Distribution of causative agents of vaginal discharge.

Causative agents of vaginal discharge	n	%
Normal vaginal flora	4	16
Candidiasis	14	56
Bacterial vaginosis	7	28

TABLE 2: Contraceptive methods and admission complaints of patients.

	Number of patients (n)	%
Contraceptive methods		
Coitus interruptus	8	32
Condom	3	12
Oral contraceptive	7	28
Intra uterine devices	4	16
Admission complaints		
Smelly discharge	4	16
Cheese-like discharge	13	52
Green discharge	5	20
Dysuria	2	8
Abdominal pain	11	44
Dyspareunia	1	4

hyperemia and fragility present in the patients were completely regressed and improved. When the patients were evaluated at the end of the 2nd month, it was determined that 19 patients had negative culture results. The distribution of patients according to vaginal culture results is shown in (Table 3).

DISCUSSION

The main pathology in the development of vaginitis is disruption of the vaginal flora. Disruption of the intestinal flora, immune system dysfunction, lymphatic drainage impairment, and structure of connective tissue play an important role in disruption of the vaginal flora. The immune system operates along with the functional integrity of the vegetative nervous system (VNS), especially the sympathetic nervous system and the hormonal system. All conditions causing hormonal dysfunction (stress, drug use, thyroid diseases, physiological or pathological hormonal alterations [puberty, pregnancy, pre- and post-menopausal period, diabetes, insulin, and glucose balances], and hormonal treatments [hormone replacement therapies,

TABLE 3: Distribution of patients according to vaginal culture results.

	1 st month (n)	%	2 nd month (n)	%
Negative	16	64	19	76
Positive	9	36	6	24

IVF treatments]) can cause vaginitis. Moreover, all surgical interventions within the segment impairing nervous innervation (curettage, cesarean birth, spiral use, plastic surgeries, and urogenital diseases) or all disruptive areas within the segmental connection are among the causes of vaginitis. In addition, craniosacral connections (tonsil, dental-jaw complex, and craniocervical connection) must also be involved in a complicated situation via the pudendal nerve (another important connection).

NT is a treatment method that allows the normalization of impaired body functions through regulation of the organism by stimulating the VNS using local anesthetics.⁹

The most important thing in NT is to be able to approach all systems as a whole. A multidisciplinary approach should be used in the treatment of a body system that is so complex. When we examine circulatory systems of all organs in detail, there is a need for a healthy VNS in order for the arterial, venous and lymphatic systems to function properly.⁹ When the functioning of the VNS in the human body is examined, if needed, it has many tasks such as perfusion, intercellular communication, electrical balance and communication, management of organ and tissue functions, respiration, circulation, secretion, heat, liquid and acid-base balance, control of reproductive organs, and regulation of metabolic, digestive, and immune system functions. In short, the VNS is programmed to regulate the adaptation of an organism to its environment and its relationship with the environment and is responsible for whole body homeostasis.⁹⁻¹³ The VNS wraps around the organism like a network. It reaches all the body by wrapping around all veins and nerves. The treatment of vaginitis is vaginal flora regulation. In the lower urogenital tract where parasympathetic innervation is dominant, NT allows vaginal flora regulation and the treatment of vaginitis.

The purpose of NT is to regulate the perfusion and innervation of the vaginal mucosa and to provide lymphatic drainage. However, the regulated immune system treats vaginitis independently from the causative agents.^{9,13} Regulation is only possible with NT that is applied using 0.5-1% procaine or lidocaine. This warning is not only for treatment purpose but also helps in diagnosis.¹⁴

Although there are not many studies evaluating the effect of neural therapin on vaginitis, Nazlıkul's book on NTs stated that the aim of NT was to regenerate the perfusion and innervation of the vaginal mucosa and to provide lymphatic drainage. However, it has been reported that the immune system regulate the vaginitis pattern.⁹

Again, Nazlıkul stated that NTs are an effective regulatory therapy in vaginitis treatment and can be applied in today's medicine.¹³

In conclusion, NTs is a regulatory therapy. It may become an effective method in the treatment of vaginitis by regulating both the perfusion and innervation of the vaginal mucosa.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea / Concept: Pınar Yalçın Bahat, Hüseyin Nazlıkul; **Design:** Pınar Yalçın Bahat, Hüseyin Nazlıkul; **Supervision / Consultancy:** Pınar Yalçın Bahat, Hüseyin Nazlıkul; **Data Collection and / or Processing:** Pınar Yalçın Bahat, Gökçe Turan; **Analysis and / or Interpretation:** Pınar Yalçın Bahat, Bahar Yüksel Özgör; **Source Browsing:** Bahar Yüksel Özgör, İbrahim Polat; **Writing of the Makalen:** Pınar Yalçın Bahat, Gökçe Turan; **Critical Review:** Hüseyin Nazlıkul; **Resources and Funding:** İbrahim Polat; **Materials:** Pınar Yalçın Bahat, Gökçe Turan.

REFERENCES

1. Otuonye NM, Odunukwe NN, Idigbe EO, Imosemi OD, Smith SI, Chigbo RC, et al. Aetiological agents of vaginitis in Nigerian women. *Br J Biomed Sci* 2004;61(4):175-8.
2. Fleury FJ. Adult vaginitis. *Clin Obstet Gynecol* 1981;24(2):407-38.
3. Coco AS, Vanderbosche M. Infectious vaginitis. An accurate diagnosis is essential and attainable. *Postgrad Med* 2000;107(4):63-6, 69-74.
4. Mitchell H. Vaginal discharge--causes, diagnosis, and treatment. *BMJ* 2004;328(7451):1306-8.
5. Ünal S, Zarakolu P. [Cinsel yolla bulaşan hastalıklar]. Wilke Topçu A, Söyletir G, Doğanay M, editörler. *Enfeksiyon Hastalıkları ve Mikrobiyolojisi*. 4. baskı. İstanbul: Nobel Tıp Kitabevleri; 2002. p.1111-23.
6. Tosun I, Aydın F, Kaklıkkaya N, Yazıcı Y. Frequency of bacterial vaginosis among women attending for intrauterine device insertion at an innercity family planning clinic. *Eur J Contracept Reprod Health Care* 2003;8(3):135-8.
7. Rein MF. *Trichomonas vaginalis*. In: Mandell GL, Bennett JE, Dolin R, eds. *Principles and Practice of Infectious Disease*. 4th ed. New York: Churchill Livingstone; 1995. p.2493-7.
8. Özçelik S. [Kamçılı protozoonlar ve yaptıkları hastalıklar]. Ustaçelebi Ş, editör. *Temel ve Klinik Mikrobiyoloji*. 1. Baskı. Ankara: Güneş Kitabevi; 1999. p.1191-207.
9. Nazlılık H. Nöralterapi teknikleri ve bozucu alan terapisi. *Nöralterapi*. 1. Baskı. İstanbul: Nobel Kitabevi; 2010. p.55-62.
10. Barop H. *Lehrbuch und Atlas der Neuraltherapie nach Huneke*. Neuraltherapie mechanism. 1st ed. Stuttgart: Hippokrates; 1996. p.237-51.
11. Weinschenk S. *Handbuch Neuraltherapie*. Neurophysiologischen Zusammenhänge. 1st ed. München: Elsevier Urban & Fischer Verlag; 2012. p.176-98.
12. Fischer L. *Neuraltherapie nach Huneke: Grundlagen, Technik, Praktische Anwendung*. 2nd ed. Stuttgart: Hippokrates-Verlag; 2001. p.257-81.
13. Nazlılık H. *Nöralterapi Etki Mekanizmaları*. Nöralterapi. 1. Baskı. Barnat; 2008. p.10-21.
14. Bierbach E, Herzog M. *Handbuch Naturheilpraxis*. Methoden and Therapie Konzepte. 1st ed. München: Urban & Fischer Verlag; 2005. p.117-26.