

Combination Therapy With Sympathetic Ganglion Blockade And Amitriptyline In A Hyperhidrosis Case

Hiperhidrozis Vakasında Sempatik Ganglion Blokajı Ve Amitriptilin İle Kombine Tedavi

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Özet

Palmar hiperhidrozis, her yaşta görülebilen, ellerde aşırı terleme ile karakterli, insan yaşamını olumsuz etkileyen bir hastalıktır. Tedavisi genellikle zordur ve çeşitli yöntemler uygulanmaktadır. Tedavi seçenekleri olarak, topikal ve sistemik ajanlar, iyontoforezis, botulinum toksin enjeksiyonları, cerrahi, kimyasal ve radyofrekans ile yapılabilen sempatektomi sayılabilir. Bu makalede oral amitriptilin ile birlikte lokal anesteziyle yapılan sempatik ganglion blokajı uygulanan bir palmar hiperhidrozis olgusu sunulmuş ve bu tekniğin etkili ve iyi tolere edilebilir olduğu kanısına varılmıştır.

Anahtar Kelimeler: Hiperhidrozis, Stellat ganglion blokajı, Antidepresan ajanlar, Trisiklik

Abstract

Palmar hyperhidrosis is a disease characterised with excessive sweating of the hands that can be seen in every decade and can have negative effects on quality of life. Treatment for palmar hyperhidrosis is not easy and several methods are used. Treatment options include topical and systemic agents, iontophoresis, botulinum toxin injections, surgery, and sympathectomy with chemicals or radiofrequency. In this article we presented a palmar hyperhidrosis case treated by oral amitriptyline and sympathetic ganglion blockade with a local anaesthetic implying that this technique is effective and tolerable.

Key words: Hyperhidrosis, Stellate ganglion blockade, Antidepressant agents, Tricyclic

Introduction

Hyperhidrosis is a disease that is characterized with excessive sweating of the hands, axilla, face and feet with an incidence of 0.6-2.8% and can have negative effects on patient's daily activities and psychosocial condition (1,2). Hyperhidrosis is generalized or localized excessive function of eccrine sweat glands (3). Sweat glands are innervated via sympathetic fibers that include demyelinated Type C fibers. Neurotransmitter of sympathetic innervations is acetylcholine (4). In hyperhidrosis cases conservative medical therapies are suggested. The most common method is the injection of botulinum toxin (5). Besides, several topical agents (aluminium chloride in ethyl alcohol, glutaraldehyde) can be used (6).

There are reports concerning successful results of 'iontophoresis' method which depends on the principle of applying electrical stimulation to the sweating region of the patient (6). Also, 'biofeedback', psychotherapy, glycopyrrolate, propranolol, antidepressant drugs and propantelin bromide can be used (6). In the past radiotherapy methods have been tried they have been abandoned because of the complications such as dermatitis (7).

Several invasive methods can be used when conservative therapy is inadequate. Most commonly thoracic sympathectomy (1), sympathetic neurolysis (2) and radiofrequency thermocoagulation (RF) (8) are performed. Another method is stellate ganglion blockade. Applying local anaesthetic agent to stellate ganglion reported to ameliorate excessive sweating especially of the face and hand (9). In this paper, a palmar hyperhidrosis case treated with a conservative oral amitriptyline therapy combined with stellate ganglion blockade is presented and discussed.

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Case Report

A 26 years-old ASA physical status I woman who had a history of excessive sweating in hands, had exacerbations in her complaints for the last two months. She had been administered aluminium chloride therapy for 10 days in a dermatology clinic. However she had been consulted to the algology clinic because of the irritation in hands (exfoliation of the palmar skin) due to aluminium chloride and no decrease in excessive sweating in hands. The patient's hand sweating was continuous irrespective of temperature. Her blood tests were in normal ranges (free T3: 2.78 IU/L, thyroid stimulating hormone:1.09 IU/L, free T3 :1.29 IU/L, vitamin B12: 162 pg/mL, folic acid:10.7 ng/mL, hematocrit: 43.2%, hemoglobin: 14.2 g/dl, WBC:7790 per mm³). She was informed and after approval of the written consent, the patient was taken to the operating room. A pillow was placed under the shoulders of the patient allowing extension of her head.

During the procedure, the patient was warned not to cough, swallow and move. The cricoid's cartilage was palpated and the space two cartilage rings below were determined. Then the needle was inserted between larynx and internal carotid artery until the transverse process of the sixth cervical vertebrae was felt. The needle was withdrawn 1-2 mm and prepared solution was carefully injected after aspirating frequently for possible blood and CSF. The procedure was applied to the both stellate ganglions for 10 days. 0.2% bupivacaine (20 mg) 10 ml + 8 mg dexamethasone were administered for the first blockade on the right and 4th blockade on the left 0.2% bupivacaine (20 mg) 10 ml was administered for the other blockades. The vital signs (pulse, blood pressure, SpO₂) were monitored after the procedure and transient Horner Syndrome developed (4 hours). Amitriptyline 10 mg/day p.o. was started with the stellate ganglion blockade.

During routine controls, at first week significant decrease of excessive sweating of the palms had occurred. Despite similar decrease of the complaints at the second week, effect of the treatment was found to be decreased at the first month. Bilateral stellate ganglion blockade was performed 5 times owing to recurrence of sweating. The follow-up consultations at 1st week, 2nd week and at the end of one month, sweating complaint resolved permanently. At the end of the third month there was still no complaint of sweating and Amitriptyline was stopped. The patient was still complaint-free at the 4th month control.

Discussion

Hyperhidrosis is a disease that is characterized with excessive sweating at the dermatome of the over-active sympathetic ganglion. In the literature there is no report concerning the treatment of patients with local anaesthetic blockade of sympathetic ganglia and amitriptyline.

Amitriptyline inhibits reuptake of serotonin and noradrenaline. Also amitriptyline shows antagonistic effect on muscarinergic, cholinergic and histaminergic receptors via alpha adrenergic receptor blockade. The primary use of stellate ganglion blockade is in the diagnosis and treatment of complex regional pain syndromes of the upper extremity (10). Combination therapy with sympathetic ganglion (stellate) blockade and oral amitriptyline in reflex sympathetic dystrophy disease of upper extremities is reported as quite effective (11). Local anesthetics and steroids similar to Diagnostic Block are the same as for block with steroids. For disease processes that have an inflammation component or disease processes with associated edema, such as CRPS I or II, steroid is added for the first block and subsequent blocks (12). We observed that similar therapies which applied to this palmar hyperhidrosis case had favorable results.

Today, the most effective topical antiperspirant is 20% aluminium chloride solution in absolute alcohol. Skin irritation occurs in 50% of the patients who receive aluminium chloride. Another difficulty in aluminium chloride therapy is recurrence of excessive sweating to former levels in 48 hours after discontinuation of the therapy (13). In this case, irritation of the palmar skin occurred besides no significant regression of the symptoms with aluminium chloride therapy.

Swartling C et al. (14) reported that intradermal injection of botulinum toxin (BT) in patients with palmar hyperhidrosis improved their quality of lives. If the injections are applied deeply, weakness of palmar muscles might occur (15). The efficacy of the treatment usually lasts for 6 weeks and requires repetitive applications. Disadvantages include the cost and short effectiveness of the therapy (5).

Horma Babana et al. (2) reported in a series of 50 cases with palmar hyperhidrosis performing chemical sympathectomy with 6% phenol, 5 ml and success in 46 cases. Serious complications might occur in chemical sympathectomy. The most crucial complication is the possibility of motor loss and pain arising from spreading phenol to the nerve roots. Therefore we didn't prefer chemical sympathectomy in this case.

Surgical sympathectomy which is accepted as a quite effective treatment is not without complications. The most serious complication of the thoracic sympathectomy operation is Horner Syndrome that lasts for a few days up to 3-4 months. Pneumothorax, haemothorax and bradycardia might occur in addition to Horner Syndrome (3).

Review of studies with for more than one year follow-up reveal that compensating sweating is seen in 50-85% of the palmar hyperhidrosis cases especially including T₂ ganglion resection (16). There was no complication in our case except transient Horner Syndrome (4 hours) depending on the minimal invasive procedure with local anaesthetic.

A new percutaneous approach to sympathectomy using radiofrequency (RF) denervation, appears to offer longer duration of action and less incidence of post sympathetic neuralgia (8).

Although in the cases of RF thermocoagulation of thoracic sympathetic ganglion of palmar hyperhidrosis reported by Ergin and Yegül (17) palmar sweating was improved at the first month, the effect of the therapy was found to be decreased at the 2nd and 3rd months. In another case report, sympathetic RF neurolysis for unilateral lumbar hyperhidrosis is a safe and effective palliative procedure for one month follow-up time (18). In this case we determined that the combination therapy with sympathetic ganglion blockade and oral amitriptyline were effective and well tolerable at the beginning and follow-up of the therapy. Our follow up period was longer than the cases reported by Ergin and Yegül (17) and Asik (18), and the patient was still free of her complaints at the 4th month examination.

Sympathetic blockade and oral amitriptyline combination may be considered as a safe and effective palliative procedure for patients whose symptoms can not be controlled with conservative measures. Consequently, in our case this minimally invasive procedure, which is repeated, has improved patient's quality of life by ceasing symptoms in the lack of procedure related complications.

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