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Comparison of Kinesio Taping Technique with Myofacial Releasing of Retinaculum Musculorum Flexorum, Mobilization of the Median Nerve, and Tendon Gliding Exercises in Patients with Carpal Tunnel Syndrome

Karpal Tünel Sendromlu Hastalarda Retinaculum Musculorum Flexorum'un Miyofasyal Olarak Gevşetilmesi, Median Sinir Mobilizasyonu ve Tendon Kaydırma Egzersizlerinin Kinezyo Bantlama Tekniğiyle Karşılaştırılması

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Abstract

Aim: We aimed to investigate the efficiency of the kinesio taping technique and to compare efficacy of this technique with a treatment programme using all three types of myofacial releasing of flexor retinaculum, mobilization of the median nerve, and tendon gliding exercises in the Carpal Tunnel Sendrome (CTS).

Material and Methods: Forty female patients with CTS, randomly divided into exercise and kinesio taping groups consisted twenty patients in each group and received treatment for 4 weeks. In Group 1 applied mobilization of the median nerve, myofascial releasing of flexor retinaculum, and tendon gliding exercises therapy for 5 days per week, while in Group 2 applied the kinesio taping technique two times per week on Mondays and Thursdays. Patients were evaluated according to Boston Symptom Severity Scale and Boston Functional Capacity Scale before and after treatment. Intragroup and intergroup treatment efficacy were compared.

Results: The Boston Symptom Severity Scale and the Boston Functional Capacity Scale scores were significantly reduced in both groups between before and after treatment in intragroup comparison ($p<0.005$). There was no significant difference between before and after treatment according to the Boston Symptom Severity Scale scores in intergroup comparison ($p<0.005$). However, the Boston Functional Capacity Scale scores showed a statistically significant decrease in the exercise group between before and after treatment ($p<0.005$).

Conclusion: Positive effects on CTS symptoms were observed in both groups, but statistically significant difference was not observed between groups. Excercise group was superior to taping group when we compare two groups in terms of CTS hand function capacity improvement.

Keywords: Carpal tunnel sendrome; myofacial releasing; mobilization of the median nerve; tendon gliding exercises; kinesio taping technique

Oz

Amaç: Karpal tünel sendromu (KTS) tedavisinde, kinezyo bantlama tekniğinin ne kadar etkin olduğunu araştırmak ve bu teknik ile retinaculum musculorum flexorum'un miyofasyal gevşetilmesi, n. medianus mobilizasyonu ve tendon kaydırma egzersizlerinin üçünün birlikte yapıldığı tedavi programının etkinliğini karşılaştırmaktır.

Materyal ve Metod: KTS'li 40 bayan hasta, rastgele yöntemle egzersiz (n=20) ve bantlama (n=20) olmak iki gruba ayrıldı ve 4 hafta tedaviye alındı. Grup 1'e haftada 5 gün retinaculum musculorum flexorum'un miyofasyal olarak gevşetilmesi, n. medianus mobilizasyonu ve tendon kaydırma egzersizleri; Grup 2'ye pazartesi ve perşembe olmak üzere haftada 2 kez kinezyo bantlama tekniği uygulandı. Hastalar tedavi öncesi ve tedavi sonrasında Boston Semptom Şiddeti Skalası ve Boston Fonksiyonel Kapasite Skalası'na

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göre değerlendirildi. Grup içi ve gruplararası tedavi etkinliği kıyaslandı.
Bulgular: Grup içi karşılaştırmada Boston Semptom Şiddeti Skalası ve Boston Fonksiyonel Kapasite Skalası değerleri her iki grupta da istatistiksel olarak anlamlı düzeyde azaldı (p≤0,005). Gruplararası karşılaştırmada Boston Semptom Şiddeti Skalası değerlerine göre tedavi öncesi ve sonrasında istatistiksel olarak anlamlı fark görülmedi (p 0,005). Ancak Boston Fonksiyonel Kapasite Skalası değerlerinde egzersiz grubunda tedavi öncesi ve sonrasında istatistiksel olarak anlamlı düzeyde azalma gözlendi (p<0,005) .
Sonuç: Her iki grupta da KTS semptomları açısından anlamlı iyileşme tespit edilmiş, ancak gruplar arasında istatistiksel olarak anlamlı fark bulunmamıştır. KTS el fonksiyon kapasitesi açısından ise egzersiz grubundaki iyileşme bantlama grubundan istatistiksel olarak daha anlamlı bulunmuştur.

Anahtar Kelimeler: Karpal tünel sendromu; miyofasyal gevşetme; n. medianus mobilizasyonu; tendon kaydırma egzersizleri; kinezyo bantlama tekniği

INTRODUCTION

Carpal tunnel syndrome (CTS), occur as a result of compression of nervus medianus in the carpal tunnel as it passes through. CTS is most common between the ages of 40 and 60.

It is more common in women than men (1,2). The most common CTS is idiopathic CTS, which etiological factors are not detected. Endocrinological disorders, rheumatologic diseases, amyloidosis, tumor formations, traumatic conditions, anatomical variations, infections and obesity are also responsible for the etiology of CTS in the literature (2). The first symptoms in the CTS clinic are nocturnal pain and paresthesias along the median nerve trait, and this complaint is initially subjective as a single symptom. Weakness and atrophy of tenar muscles are seen in later periods (3).

Diagnosis in CTS is based on anamnesis, clinical symptoms, physical examination findings, and electroneurophysiological support of these findings (4).

In the literature, the methods used in the conservative treatment of CTS are varied and the advantages of these methods are discussed. Conservative treatment of CTS includes approaches such as use of splints, steroid injections, non-steroidal anti-inflammatory drugs, diuretics, vitamin B6, physical therapy agents, activity modification and job replacement. Contrast bath, ultrasound and transcutaneous electrical nerve stimulation (TENS) which is a modality of analgesic therapy in CTS are among the methods used (1,4). Surgical decompression is applied if the patient has severe median nerve injury (4).

Tendon and nerve gliding exercises used in the treatment of CTS are thought to contribute to local dynamic effects. These exercises allows the mobilization of soft tissues to terminate dynamic ischemia. The movement of the flexor tendons and median nerve in the carpal tunnel are related to each other, and these movements can be increased by tendon and nerve gliding exercises. As a result of this effect, venous return from the median nerve increases and pressure within perineum decreases. Although tendon and nerve gliding exercises are applied after surgery, there is also a place in the conservative treatment of CTS. The longitudinal contact area between ligamentum carpi transversum and median nerve is enlarged by stretching adhesions, and as a result of the arrangement of venous return to nerve fibers, tenosynovial edema is reduced and the symptoms are improved as a result of reduction in pressure within the carpal tunnel (5).

Myofacial releasing of retinaculum musculorum flexorum which is used for osteopathic manipulative treatment and stretching exercises, is a very effective method. As a result of this method, a potential treatment creates an increase in the width of the ligamentum carpi transversum and allows the nerve functions to be performed (6).

Kinesio taping is used in the treatment of CTS to reduce edema and pain. It is also used to improve decreased ligament elasticity and to reduce pressure on the median nerve (7).

In recent years, kinesio taping technique used in physical therapy and rehabilitation program has been used very effectively in many diseases affecting musculoskeletal system. However, a few studies have been found to investigate the effectiveness of the CTS in our literature surveys (8,9). The aim of this study was to determine how effective kinesio taping technique was used in the treatment of patients with CTS and to compare kinesio taping technique with the treatment program of applied together myofascial releasing of retinaculum flexorum musculorum, mobilization of the median nerve and tendon gliding exercises.

MATERIAL AND METHODS

In this prospective study, 40 female patients who referred to the Physical Medicine and rehabilitation outpatient clinic of Inonu University Turgut Ozal Medical Center between December 2011 and March 2012 were diagnosed as CTS with story, physical examination or electrodiagnostic tests by the doctor. Ethics comittee approval was taken from İnonu University (2011/33).

Paresthesia, pain and/or vasomotor symptoms in the hand that fits the median nerve distribution that lasts for more than 6 weeks, at least one of the tests of Tinel, Phalen and Carpal compression is positive in physical examination, three months have not been included in the medical treatment or physical therapy program for CTS patients were included in this study.

Patients who have median nerve injury, severe tenar atrophy, underwent CTS surgery, and sensitivity to kinesio

taping band were excluded from the study.

Written informed consent was obtained from all participants.

Patients were randomly divided as group 1 and Group 2. They were treated for 4 weeks. All patients were trained to avoid the positions and activities that would increase the symptoms of CTS during the treatment.

Group 1 patients were performed mobilization of the median nerve (Figure 1.) for 3 minutes, myofacial releasing of retinaculum musculorum flexorum (Figure 2) for 3 minutes and tendon gliding exercises (Figure 3) for 20 times 5 days a week.

Figure 1. Mobilization of the median nerve

Figure 2. Myofascial relaxation of retinaculum musculorum flexorum

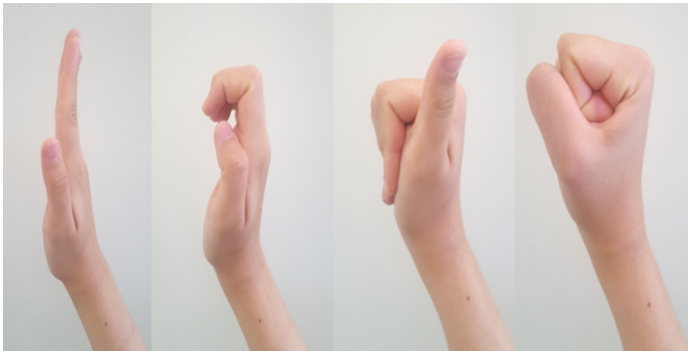

Figure 3. Tendon gliding exercises

Group 2 patients were performed kinesio taping technique (Figure 4) on Mondays and Thursdays. Button hole technique was used for space correction from kinesio tape applications. I tape was applied from epicondylus medialis to phalanx proximalis on the palmar percent and from phalanx proximalis to epicondylus lateralis on the dorsal persent. Two holes were opened in the middle of the I band. These holes were passed 3. and 4. the fingers and the patient was asked to perform radial deviation with wrist extension. Tape stuck up to epicondylus medialis with 15-25% or paper tension. Then the patient was asked to perform ulnar deviation with wrist flexion. Tape stuck to epicondylus lateralis with 15-25% or paper tension again. An I tape is attached to the dorsal of the wrist horizontally. Kinesio taping was taped to Group 2 patients on Monday and was removed Thursday and renewed. The band was changed during the week of the patients out of the band.

Figure 4. Kinesio taping technique

Patients that meet the study criteria, the patient's demographic information, Body Mass Index (BMI), whether the affected hand is a dominant hand, the etiology of CTS, situations that can cause difficulty in the wrist, EMG results, whether subjective symptoms (pain, paresthesia, loss of strength, vasomotor symptoms) are present, whether physical examination of the Tinel test, Phalen test, Carpal compression test is positive was assessed with a form that contains. All patients were evaluated pretreatment and posttreatment with Boston Symptom Severity Scale and Boston Functional Capacity Scale. The effectiveness of the treatment of each group was determined and the comparison of the treatment efficacy of the two groups was made.

Boston Questionnaire

The Boston Carpal Tunnel Questionnaire developed by Levine and colleagues in 1993 self reported. It consists of two parts: the scale of symptom severity and the scale of functional capacity. It is known as the 'Boston Carpal Tunnel Questionnaire' because it originates from the Boston hospital (10).

Boston Symptom Severity Scale

This questionnaire consists of 11 articles. There are five different answers that are between 1 and 5 points. The

average score is calculated by dividing the total score by the number of questions and varies between 1-5. High scores indicate severe symptoms (10).

Boston Functional Capacity Scale

This questionnaire consists of 8 articles. There are five different answers that are between 1 and 5 points. The average score is calculated by dividing the total score by the number of questions and varies between 1-5. High points indicate reduced functional capacity (10).

Mean score was calculated separately for symptom severity and functional capacity.

Statistical Analysis

In our study, sample size was calculated using power analysis (power: 0.80), 40 volunteers were taken. All patients were randomly divided into two groups (Group 1 and Group 2).

Data were presented as mean ± standard deviation. Shapiro-Wilk test was conducted for normality assumption. Data was normally. Dependent T-test were used for comparison of pretreatment and posttreatment for Boston Symptom Severity Scale and Boston Functional Capacity Scale within groups. Independent T-test were used for comparison of pretreatment and posttreatment for Boston Symptom Severity Scale and Boston Functional Capacity Scale between groups. $p<0.05$ value was considered as statistically significant. IBM SPSS Statistics 22.0 program was used for analyses.

RESULTS

This study consists of two group. Group 1 is exercises (mobilization of the median nerve, myofacial releasing of retinaculum musculorum flexorum, tendon gliding exercises) and Group 2 is kinesio taping group.

In the statistical analysis, there was no significant difference between the groups in terms of mean age, BMI and job distribution ($p<0.005$). There were 18 bilateral 2 unilateral involvement in Group 1 while 16 bilateral 4 unilateral involvement in Group 2. 38 patients were using the right hand (95%), while 2 patients were using the left hand (5%). In Group 1 and Group 2, 19 people (95%) were using their right hand. There was no statistically significant difference between the groups in terms of hand laterality ($p<0.005$) (Table 1).

Tablo 1. Demographic data of patients

	Group 1 (N=20)	Group 2 (N=20)	P
Number of wrist which the treatment received	38	36	0.958
Dominant hand (right)	19 (% 95)	19 (%95)	0.999
Age	44.6510.864	50.258.955	0.913
BMI, kg/m²	27.803.334	29.255.399	0.958
Job Housewife	19 (%95)	17 (%85)	0.936

(BMI: Body mass index)

There was no statistically significant difference between the groups in terms of pain, paresthesias, weakness of muscles and vasomotor symptoms when compared with the initial symptoms ($p<0.005$) (Table 2).

Tablo 2. Pre-treatment symptom evaluation parameters of patients

	Group 1 N (%) N =20	Group 2 N (%) N =20	P
Pain	18 (% 90)	19 (% 95)	0.200
Paresthesia	19 (% 95)	20 (% 100)	0.200
Weakness of muscles	18 (% 90)	17 (% 85)	0.511
Vasomotor symptoms	12 (% 60)	15 (% 75)	0.322

Values are given as N number and percentage of positive symptom parameters

There was no statistically significant difference between the groups when the clinical evaluation parameters (Tinel test, Phalen test, Carpal compression test) were compared ($p<0.005$). (Table 3).

Tablo 3. Clinical evaluation parameters before treatment of patients

	Group 1 N (%) N =20	Group 2 N (%) N =20	P
Tinel testi	17 (%85)	19 (%95)	0.525
Phalen test	20 (%100)	20 (%100)	0.997
Carpal compression test	20 (%100)	20 (%100)	0.997

Values are given as N number and percentage of positive symptom parameters

In both groups, the difference between pretreatment and posttreatment scores of the Boston Symptom Severity Scale (Total S) and the scores of Boston Functional Capacity Scale (Total F) was decreased statistically significantly ($p\leq0.001$) (Table 4).

Tablo 4. Comparison of pre- and post-treatment Boston Symptom Severity Scale and Boston Functional Capacity Scale scores of Group 1 and Group 2

		Group 1 N=20	Group 2 N=20
Boston Symptom Severity Scale	Pre-T	34.20 9.43	36.10 10.25
	Post-T	17.90 5.69	17.55 5.43
	P	<0.001	0.001
Boston Functional Capacity Scale	Pre-T	26.90 7.65	27.40 5.86
	Post-T	15.90 6.00	12.50 3.36
	P	0.001	<0.001

Pre-T: Pre-Treatment, Post-T: Post-Treatment

The difference between the pretreatment and posttreatment scale of Boston Symptom Severity Scale was expressed as Difference S, the difference between the pretreatment and posttreatment scale of Boston Functional Capacity Scale scores was expressed as Difference F. There was a no statistically significant difference compared to the Difference S, Difference F scores of Group 1 and Group 2 (p=0.31) (p=0.04) (Table 5).

Tablo 5. Comparison of difference S and difference F scores of groups

	Group 1	Group 2	P
Difference S	16.30 6.05	18.55 7.73	0.312
Difference F	11.30 6.35	14.90 4.10	0.040

DISCUSSION

CTS is one of the most common peripheral neuropathies. It affects mainly middle aged women (1,2). That's why in this study had been done in women. Also the mean age of all patients in our study was 47.45±10,228. It has been reported that housewives can pose a risk factor in CTS because they use their hands intensively in cleaning and knitting (11). High BMI has been reported to be risk factor for CTS, owing to the increase in fat tissue and the hydrostatic pressure within the carpal tunnel (12). In this study, the majority of patients were housewives and had a high BMI. These findings were supportive of the literature. Bilateral involvement in patients with CTS is 60% more common than unilateral involvement. The dominant hand in bilateral cases has often been shown to be kept more severe and previously. Unilateral cases often have dominant hand involvement (13). In this study, bilateral involvement rate was very high and dominant involvement was found in the patients with unilateral involvement.

The clinical manifestations of CTS include pain and numbness in the lateral three fingers and the radial side of the ring finger as well as decreased muscle weakness in the thenar area and atrophy ocur. The symptoms get worse at night and patients try to reduce the physical disturbance by shaking their hands. In previous studies, the most common symptoms of paresthesia and pain were recorded (14,15). In this study we evaluated pain, paresthesia, loss of strength and vasomotor symptoms in the diagnosis. These symptoms we evaluated in both group patients were severe distress.

We used Tinel, Phalen and Carpal compression tests that are most commonly used provocative test in the evaluation of CTS. In the literature, it was reported that the Tinel test was positive between 8%-100% and Phalen test was positive between 10%-88% in patients with CTS (16). In this study, Tinel test was found to be positive in the majority of patients. Also, Phalen and Carpal compression test were positive in two groups worldwide.

When we review the literature information of CTS, it is seen that there is no standardization in evaluating treatment results. The scale, which was reported by Levine et al. ın 1993 is referred to as the Boston Carpal Tunnel Questionnaire. Levine et al. demonstrated that this scale had the characteristics of reproducibility, consistency, validity, and sensitivity to clinical changes, which should be found in a good clinical questionnaire (10). It is noted that this scale has been used in comparative studies such as the questioning of electrodagnostic tests, which have been accepted as gold standard by some authors in recent years. We also used the Boston Questionnaire to evaluate subjective complaints in patients with CTS because it is easy and feasible to determine the severity of CTS symptoms and to be reliable.

Surgical or conservative methods are used to relieve compression of the median nerve in the treatment of CTS. Although it is defended that CTS surgery is a safe and effective treatment, because of the possible risks and complications of surgery, conservative treatment methods are preferred in some patients (17).

Osteopathic manipulative therapy, a massage technique, is a fast and noninvasive method used in the diagnosis and treatment of CTS. This treatment helps to reduce the pressure in the carpal tunnel, relax soft tissues, relieve stuck carpal and metacarpal bones, strengthen muscles, increase joint range of motion, and increase nervous and circulatory functions. Studies have found improvements in joint range of motion and symptom reduction in patients with CTS using osteopathic manipulative therapy (18). This study results support this. Decrease in CTS symptoms and significant improvements were observed in the treatment group in which osteopathic manipulative treatment was included.

Mobilization of the median nerve, which is another conservative treatment used in this study, is a treatment technique used to improve the symptoms of CTS. There are many conservative and postoperative applications involving the mobilization of the median nerve to improve the glide motion of the nerve in CTS. This technique also helps to oxygenate the nerve, reducing ischemic pain (19). Different results highlighted in different systematic reviews describing nerve mobilization. Two of these systematic reviews emphasized different outcomes. One study said that nerve mobilization had no significant benefits (20), while another study proposed nerve mobilization for the benefits of pain reduction (21). In another study, it has been shown that decreases in the rate of surgical intervention using nerve mobilization are possible (22). In addition the effects of neural mobilization differ in another study, it has emphasized that it may be an appropriate option for improving the pain and function of patients with CTS (23). When these studies are evaluated, it is seen that more studies are needed for the effectiveness of nerve mobilization in the treatment of CTS. We decided to use neural mobilization in this study because of the different results and the need for further information on this subject. As a result

of this study, there were significant improvements in CTS symptoms and function in the treatment group with median nerve mobilization.

The main purpose of tendon gliding exercises used in the treatment of CTS increases the gliding motion of the median nerve in canalis carpi. Tendon and nerve gliding exercises are performed both postoperatively and in the conservative treatment of CTS (24). In the studies, tendon gliding exercises were generally applied together with nerve gliding exercises. In a study, were performed by Akalin et al., one group had only neutral wrist splints and the other group applied tendon and nerve gliding exercises with splint. As a result, it was found that the improvement in the exercise group was slightly higher (25). Sang-Dol Kim evaluated 4 randomized controlled trials in the review and as a result indicated that tendon and nerve gliding exercises in patients with CTS may have a positive effect when combined with classical therapies. However, more randomized controlled studies should be needed to assess the effect of tendon and nerve gliding exercises on CTS (26). In order to support the literature on this subject, we applied tendon gliding exercise to one of the groups. As a result of this study, CTS symptoms decreased and significant improvements were observed in this group.

Kinesio taping techniques, which have recently been increasing in popularity, is used in many diseases as well as CTS. There are a limited number of studies on the use of kinesio taping techniques in the treatment of CTS in the literature. In these studies, effects of kinesio taping techniques and applications such as splint, paraffin, laser, steroid iontophoresis were compared. In a study, kinesio taping techniques was compared with steroid iontophoresis and it was observed that the complaints of the patients decreased posttreatment and after the short-term follow-up (27). Kinesio taping, splint, paraffin applications compared in 3 separate studies performed. Kinesio taping techniques have been more effective. It is also emphasized that this application may be preferred because of the lack of side effects and the patient's compliance is good (28-30). In another study, kinesio taping was compared with low-energy laser treatment. The laser was effective, kinesio taping technique did not contribute to treatment in the short term but it was found to have an effect in the long term (31). In this study, we compared to efficiency of the kinesio taping technique and this technique with a treatment programme using all three types of myofacial releasing of flexor retinaculum, mobilization of the median nerve, and tendon gliding exercises. In both groups, we recorded significant improvements in CTS symptoms and functions.

It has been observed that both treatment groups have positive effects on the symptoms of CTS. When evaluated in terms of CTS functions, exercise group was more effective than kinesio taping group. The reason for this is that according to the information received from the patients during the treatment, especially the palms are wetted and kinesio taping separated from the skin. In addition, the band creates a feeling that there is a different material on the body with both visual and tactile sense. Therefore, we think that hand functions are restricted by patients.

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MEDICAL RECORDS-International Medical Journal

Olgu Sunumu / Case Report

Compulsive Water Drinking Resulting in Hyponatremia: A Pimozide Case

Hiponatremi ile Sonuçlanan Kompülsif Su İçme: Bir Pimozid Olgusu

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Abstract

Pimozide is an antipsychotic can cause side effects such as tremor, rigidity, dystonia, akathisia, gynecomastia. Another rare side effect is psychogenic polydipsia and subsequent hyponatremia. In this case report, we discussed the polydipsia-hyponatremia syndrome associated with pimozide, which is not currently preferred due to cardiac side effects. This case illustrates the risk of water intoxication in antipsychotic-treated patients with non-psychiatric care and emphasizes the interest of regular ionic control in such patients.

Keywords: Pimozide, hyponatremia, side effect, antipsychotic

Oz

Pimozid, tremor, rijidite, distoni, akatizi, jinekomasti gibi yan etkilere neden olabilen bir antipsikotiktir. Diğer bir nadir yan etkisi psikojenik polidipsiyi takiben ortaya çıkan hiponatremi tablosudur. Bu olgu sunumunda, günümüzde kardiyak yan etkileri nedeniyle fazla tercih edilmeyen pimozid ile ilişkili polidipsi-hiponatremi sendromunu tartıştık. Bu olgu, psikiyatrik bakımı yeterli olmayan ve antipsikotik kullanan hastalardaki su zehirlenmesi riskini göstermekte ve bu tür hastalarda düzenli iyon dengesi kontrolünün önemini vurgulamaktadır.

Anahtar Kelimeler: Pimozid, hiponatremi, yan etki, antipsikotik

INTRODUCTION

Pimozide is an antipsychotic diphenylbutyl-piperidine derivative used in the treatment of schizophrenia patients with blocking the dopamine 2 receptors in the nigrostriatal and mesolimbic dopamine pathways. It causes side effects such as tremor, rigidity, dystonia, akathisia, extrapyramidal symptoms, headache, galactorrhea, gynecomastia. Dose-dependent QTc prolongation, risks for ventricular arrhythmias, and sudden death syndrome are some serious side effects of pimozide. Edema, itching, skin rashes are rare side effects. Another rare side effect is psychogenic polydipsia and subsequent hyponatremia (1). In this case report, we discussed the polydipsia-hyponatremia syndrome associated with pimozide, which is not currently preferred due to cardiac side effects.

CASE PRESENTATION

A, 71-year-old male patient was followed up for more than 50 years with the diagnosis of schizophrenia according to Diagnostic and Statistical Manuel of Mental Disorders, Fifth Edition (DSM-5) (2). In the past, the drugs he used were haloperidol, chlorpromazine, quetiapine, risperidone, olanzapine, amisulpride, escitalopram, biperidene, alprazolam. She was admitted to the emergency department with vomiting, abdominal pain, dizziness, self-talk, and agitation. Laboratory findings were as follows: serum sodium (Na) level 117 mEq/L, serum chlorine (Cl) level 92 mEq/L, serum potassium (K) level 4.0 mEq/L, urinary osmolarity 1300 mosmol/kg, urine sodium level 130 mEq/L. It was determined that 8 mg/day pimozide was used before the application. Drug-induced syndrome of

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inappropriate antidiuretic hormone (SIADH) was thought to develop. No medication was used, supportive treatment was given, and clinical symptoms improved after the third day. Serum Na 136 mEq/L was determined in his laboratory. Clozapine was started at 12.5 mg/day. Slowly titrated 200 mg/day dose was reached. White blood cell and electrolytes were in normal limits before discharge. Written informed consent was taken from the patient in order to publish her data. Naranjo Adverse Drug Reaction Probability Scale (NADPRS) score of the patient was 6 (3).

DISCUSSION

Hyponatremia due to drug use is a condition encountered in psychiatric practice. Various cases of polydipsia-hyponatremia due to antidepressants, mood stabilizers and antipsychotic use have been reported (4-6). Potomania, in the words of Koide (7), is either inherited in the psychiatric condition or induced by antipsychotic therapeutics. The author stated that this drug could cause a sensation of thirst and contribute to the development of a potomania, polydipsia-hyponatremia syndrome. Later, Nishimura et al. (8), Leclerq et al. (9) made notifications. There are not many studies about pimozide which is not used frequently because of its cardiac side effects. The mechanism invoked is not yet formally elucidated. Essentially, three hypotheses corresponding to three action sites are identified: action on the pituitary gland with increased synthesis and/or secretion of ADH; action on the kidney, either by direct action or by potentiating the activity of ADH at this level; central action on osmoreceptors with modifications of the threshold of activity leading to a secretion of ADH for an abnormally low level of blood osmolality. High urinary sodium (in our patient: 130 mEq/L) can be found in both etiologies and is certainly not a discriminating factor. The key element of the differential diagnosis appears to be urinary osmolality (1, 7-9). Ethically, it is not considered lawful to continue the administration of pimozide for fear of running the risk of a new episode of hyponatremia in a patient traumatized cranial.

As a result, we report a case of water intoxication with severe hyponatremia resulting in various symptoms in a patient diagnosed with schizophrenia recently treated by pimozide. This case illustrates the risk of water intoxication in antipsychotic-treated patients with non-psychiatric care and emphasizes the interest of regular ionic control in such patients.

NOT: This case report was presented as a poster in "11th International Congress on Psychopharmacology & 7th International Symposium on Child and Adolescent Psychopharmacology [Abstract:0020] [Psychopharmacology]"

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MEDICAL RECORDS-International Medical Journal

Olgu Sunumu / Case Report

Subcutaneous Reccurent Myxoid Liposarcoma

Subkutan Nükseden Miksoid Liposarkom

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Abstract

Liposarcoma, one of the most common soft-tissue sarcomas, originates from primitive mesenchymal cells, and its diagnostic have been well established. Myxoid liposarcoma is the second most common histological subtype, occurring more frequently during the fourth and fifth decades of life. We describe a case of recurrent myxoid liposarcoma of the right flank in 50 years old man. Treatment of the recurrence involved chemotherapy neo-adjuvant (3 courses), wide surgical resection (resection R1) followed by locoregional radiation therapy. Patient's evolution was marked by complete remission maintained after 12 months follow-up. The myxoid liposarcoma has a low rate of local failure with trimodality therapy combined chemotherapy, radiotherapy and surgery.

Keywords: Myxoid liposarcoma (MLS), recurrence, chemotherapy, radiotherapy, surgery

Oz

En yaygın yumuşak doku sarkomlarından biri olan liposarkom, ilkel mezenkimal hücrelerden kaynaklanır ve tanısı iyi bilinmektedir. Miksoid liposarkom, yaşamın dördüncü ve beşinci dekatlarında daha sık görülen ikinci en yaygın histolojik alt tiptir. Biz 50 yaşında erkek hastada tekrarlayan miksoid liposarkom olgusunu tanımladık. Nüksün tedavisi neoadjuvan kemoterapi (3 kür), geniş cerrahi rezeksiyonu (rezeksiyon R1) ve lokalrejyonel radyasyon tedavisini takip etti. Hastanın gelişimi 12 aylık takipten sonra devam eden tam remisyon ile işaretlendi. Miksoid liposarkom, trimodalite tedavisi kombine kemoterapi, radyoterapi ve cerrahi ile düşük lokal yetmezliğe sahiptir.

Anahtar Kelimeler: Miksoid liposarkom (MLS), nüks, kemoterapi, radyoterapi, cerrahi

INTRODUCTION

Liposarcomas are soft tissue sarcomas arising from adipose tissue. In 2013, the World Health Organization updated their classifications for bone and soft tissue sarcomas to include three different subtypes of liposarcoma: well-differentiated or de-differentiated liposarcoma, pleomorphic liposarcoma, and myxoid/round-cell liposarcoma (1). These subtypes are based upon both clinicopathologic and molecular differences. Myxoid liposarcoma is the second most common subtype of liposarcoma.There is evidence to suggest that MLS is both radioresponsive and radiosensitive (2). Comparative analysis of MLS versus other sarcoma subtypes suggests greater response rates in MLS with addition of anthracyclines-based chemotherapy (3). However, there is relatively limited information on factors that predict for overall outcome in MLS, particularly with regard to the benefits of combined trimodality therapy.

CASE REPORT

A man 50 years old, with no pathological antecedents, who presented since 2011 a slowly growing mass of the right flank. Magnetic Resonance Imaging (MRI) showed an Inhomogeneous tumor of 6*8*9 cm3 in size suspicious for sarcoma. Surgery was recommended and the tumor was resected circumferentially. The anatomo-pathological study was in favor of grade I myxoid liposarcoma without round cell component (figure 1) .

The patient was lost for follow-up since 2012. three years later, the patient was referrerd to manage a giant tumefaction at the same initial site. The mass made more than 20cm at the clinical examination with inflammatory

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signs, fixed in relation to both planes and of firm consistency.

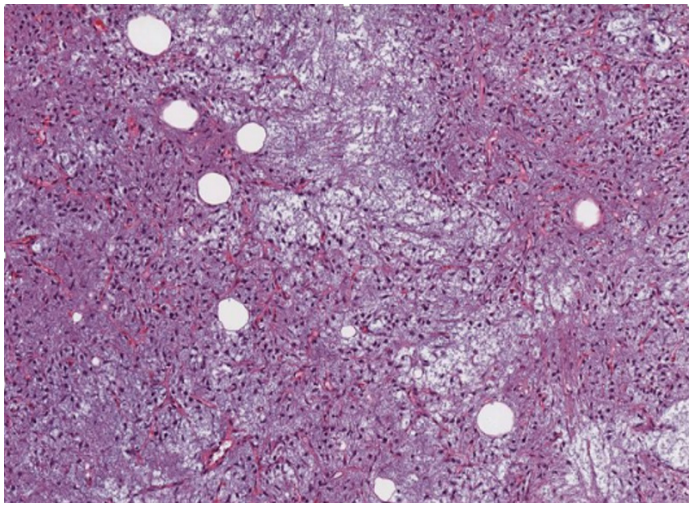

Figure 1. Microscopic pathology image showing Myxoid Liposarcoma

A thoracic and abdomino pelvic Computer Tomograph (CT) scan was realized, it shows a heterogeneous bilobular tissue mass of the superficial soft tissues next to the right iliac crest measuring 10*12 cm and extended to a height of 18.4 cm; there was no metastasis detected.

Due to bad prognosis criteria which are: Recurrence, rapid increase in the volume of the mass, the presence of inflammatory signs and the histological type (chemosensitive); the patient has received 3 courses of neo-adjuvant chemotherapy type MAI (Epirubicine, ifosfamide, G-CSF) with a good reponse (more than 50% clinical and radiological response). The patient benefited from a surgical exeresis; the histological aspect was in favor of a myxoid grade I liposarcoma according to French Federation of Cancer Centers Sarcoma Group (FNCLCC), presence of a round cell component estimated at 2%; the tumor was located 3 mm from the upper and lower limit, 8 mm from the internal limit, 15 and 10 mm from the lower and the outer limit respectively (resection R1). The surgical revision was impossible, and the decision was to complete with adjuvant radiotherapy after complete healing. The patient received loco-regional radiotherapy at the total dose of 66 Gy in 2 series: a dose of 50 Gy in 25 fractions of 2 Gy/Fr + a complement of 16 Gy in 8 fractions of 2 Gy/Fr (figure 2).

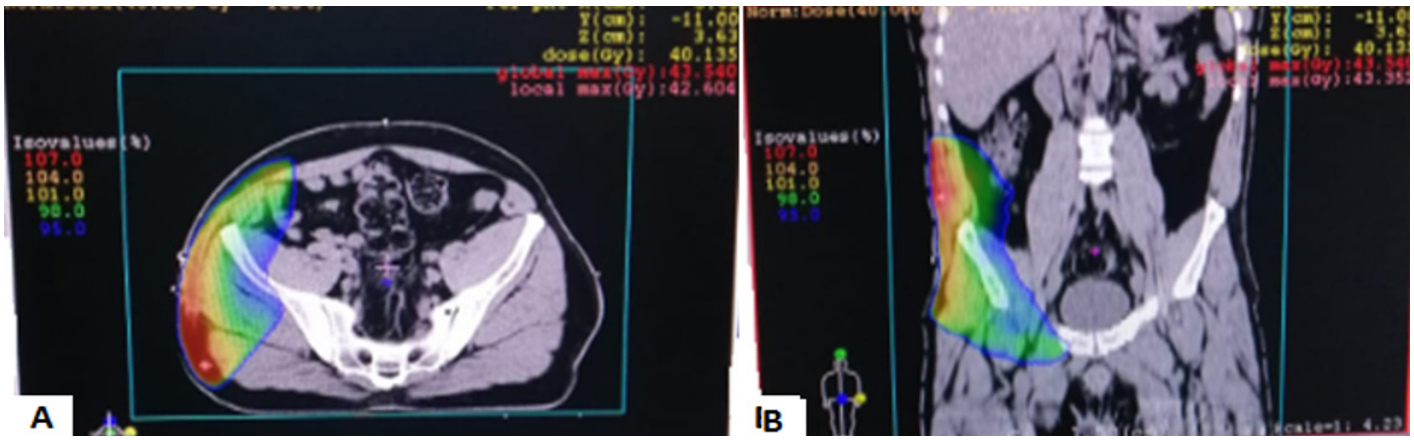

Figure 2. A= Axial tomodensitometric sections of 3 cm thick: Dose distribution of the patient's 3D radiation
B=Frontal tomodensitometric section : dose distribution of the patient's 3D radiation

The evolution was marked by a clinical and radiological remission complete maintained after a decline of 12 months.

DISCUSSION

Surgery remains the main treatment of MLS. However recent studies have shown that MLS tumors are sensitive to radiation therapy. Surgery, is therefore, often combined with neoadjuvant or adjuvant radiation and/or chemotherapy (4). The optimal goal of surgery is to successfully remove the tumor with a function sparing procedure maintains a wide excision with negative margins. The ability to perform a limb-sparing surgery is based on the extent to which important anatomical structures including fascial layers, blood vessels, nerve sheays, and muscle fibres are abutting or invaded by the tumor (5). However, while positive surgical margins lead to a higher risk for local recurrence, this has not been shown to correlate with an increased risk for metastatic disease or wore overall survival (6-7). In case where surgery it out of option, radiation and chemotherapy is employed.

MLPSs have been found to be much more radiosensitive than many other types of soft tissue tumors (8). A Retrospective review at M.D Anderson evaluated 112 patients with liposarcoma (71 of these patients had myxoid round cell) that were treated with conservative surgery and radiation with the goal to evaluate local control, metastatic relapse and overall survival. These patients had an excellent local control of over 90% at 10 years and the metastatic controversy as

to whether noadjuvant versus adjuvant radiation is more advantageous with regard to clinical outcomes. Therefore, given the lack of any proven difference in rates of local controle from pre-operative radiation, the standard of care has been to utilize adjuvant radiation unless it was determined that a limb-salvage surgery could not be completed due to the size of the tumor, and that tumor shrinkage could allow for resection without amputation (9).

The decision to give adjuvant chemotherapy is based on the risk of recurrence with metastatic disease. High-risk soft tissue sarcomas warrant consideration of adjuvant therapy. The benefit of adjuvant chemotherapy was demonstrated in the Italian sarcoma study Groups randomized comperative trials. This study demonstrated an increase in disease-free survival as well as median overall survival (10). More recently, an international multi-center randomized phase III trial was performed to determine the benefit of a histology-tailored neoadjuvant chemotherapy regimen in high grade soft tissue sarcomas. In this study, the patients enrolled with myxoid liposarcoma were randomized either to trabectedin or the combination of epirubicin and ifosfamide. No advantage to histology-tailored chemotherapy was observed in this study. In fact, there was a 20% difference in both 3 year disease-free and overall survival in favor of the standard chemotherapy group, offering further evidence for the utility of this regimen in the curative setting for all high-grade soft tissue sarcomas (11). In most instances, adjuvant chemotherapy is chosen over neo-adjuvant therapy given there is no evidence that one is superior in terms of overall survival.

CONCLUSION

Given the rarity of these tumors, myxoid liposarcomas similar to all sarcomas, are best evaluated by a multidisciplinary team, which includes recommendations from a radiologist, pathologist, surgeon, medical oncologist, and radiation oncologist with expertise in soft tissue sarcoma. Management of these tumors once appropriately identified and histologically confirmed, typically consists of multimodality treatment with surgery and radiation with or without chemotherapy.

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MEDICAL RECORDS-International Medical Journal

Olgu Sunumu / Case Report

Adenoid Cystic Carcinoma of Vulva: Case Report

Vulvanın adenoid kistik karsinomu: Olgu sunumu

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Abstract

The adenoid cystic carcinoma (ACC) of the Bartholin's gland (BG) is one of the most uncommon variant of vulvar malignancies representing only 10–15% of cases. Risk factors to the development of ACCBG are still unclear. The symptoms are usually non-specific. In the present study, we present a 61-year-old woman with a vulvar mass evolving since 4 years, without pruritus or pains, without other signs. She initially benefited of an excisional biopsy of the mass returning in favour of a nodular hidradenoma. The evolution after 1 year was marked by the recurrence of the mass. The patient had an ablation of the masse then a total vulvectomy and bilateral lymph node dissection because pathology showed ACC of Bartholin's gland with positif surgical margins. She received adjuvant external beam radiation to the pelvis and on the operating bed. Patient's evolution was marked by complete remission maintained after 4years follow-up. Adenoid cystic carcinoma of vulva is an extremely rare, slowly progressing neoplasm mostly involving the Bartholin's gland. The usual treatment includes wide excision and adjuvant radiotherapy (if required). There may be late local and distant recurrence.

Keywords: Adenoid cystic carcinoma, Bartholin's gland, Surgery, Radiotherapy, Chemotherapy, Surgical margins

Oz

Bartholin'in bezinin (BG) adenoid kistik karsinomu (ACC), vakaların sadece% 10-15'ini temsil eden en sık görülen vulvar malignitelerden biridir. ACCBG'nin gelişiminde risk faktörleri hala belirsizdir. Belirtiler genellikle spesifik değildir. Bu çalışmada biz 4 yıldan beri vulvar kitlesi olan kaşıntı, ağrı ve diğer hiçbir belirtisi olmayan 61 yaşındaki kadın hastayı sunuyoruz. Başlangıçta nodüler hidradenom lehine dönen kitlenin eksizyonel bir biyopsisinden faydalandı.

1 yıl sonraki değerlendirme kitlelerin tekrarı ile işaretlendi. Hastada total bir vulvektomi ve iki taraflı lenf nodülü diseksiyonu ile ablasyon yapıldı, çünkü patoloji, Bartholin'in bezinde positif cerrahi sınırlara sahip ACC olduğunu gösterdi. Pelvise ve ameliyat yatağına adjuvan dış ışın radyasyonu verildi. Hastanın değerlendirilmesi, 4 yıllık takipten sonra devam eden tam remisyon ile işaretlendi. Vulva adenoid kistik karsinomu, çoğunlukla Bartholin bezini içeren son derece nadir, yavaş ilerleyen bir neoplazmdır. Genel tedavi, geniş eksizyon ve adjuvan radyoterapiyi içerir (gerekirse). Geç yerel ve uzak nüks olabilir.

Anahtar Kelimeler: Adenoid kistik karsinom, Bartholin bezi, Cerrahi, Radyoterapi, Kemoterapi, Cerrahi sınırlar

INTRODUCTION

Adenoid cystic carcinoma of vulva (ACC-vulva) is an extremely rare entity with fewer than 100 cases reported in the literature so far (1). In general, ACC affects the exocrine glands. First described by Theodor Billroth (1856), the currently accepted terminology ACC was proposed by Foote and Frazell (1953) (2). Fifty-eight percent of these tumours occur in the oral cavity, major and minor salivary glands, palate, floor of the mouth, gums, lips, tongue and pharynx. Typically, it consists of small basaloid cells with a solid cribriform pattern or epithelial cells with a tubular growth pattern in histology (3). The occurrence of ACC is fairly scarce in the vagina, and , there is limited literature on ACC-vulva. The present report intends to share 1 case of ACC that occurred in the vagina in a 61 year old woman.

CASE PRESENTATION

A Sixty-one-year-old woman with menopause, presented with a swelling on the right posterior labia minor associated with intermittent tenderness. The patient recalled that the

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mass had slowly increased in size from 2cm over a period of 4 years. Physical examination found an indurative, fixed, irregular margin mass of about 5 cm over the right posterior labia minor, just at the site of Bartholin's gland. The mucosa was intact and no pus discharge or bleeding was found. Pelvic bimanual examination revealed a normal cervix, normal uterine size, and no palpable masses in the adnexa. An excisional biopsy by local hospital revealed a nodular hydradenoma.

The evolution after 1 year was marked by the recurrence of the mass. A simple excision was arranged first, The pathology examination showed an adenoid cystic carcinoma predominantly cribriform infiltrating focal soft tissues with perineural neoplastic invasion and without vascular emboli arising from Bartholin's gland (figure.1,2).

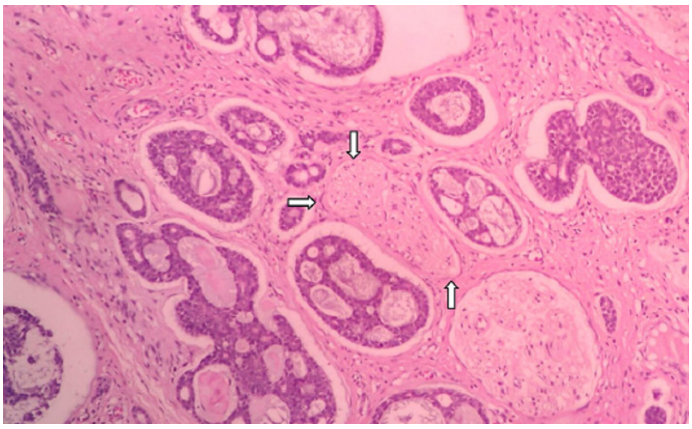

Figure 1. Histopathological picture showing neoplasm with cribriform pattern. Tumour cell nests are seen surrounding a nerve fibre (marked by arrows), indicating perineural infiltration

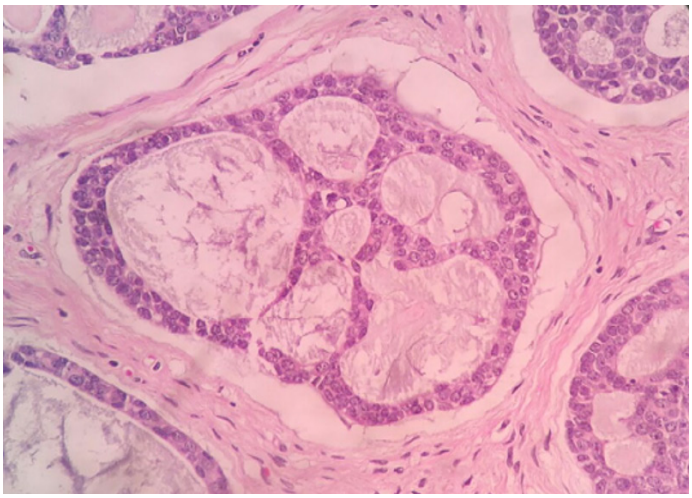

Figure 2. High power view (940) of cribriform patter

Surgical resection limits were at 1 mm of carcinoma. The patient was then referred to our institution and the decision at the multidisciplinary consultation meeting was a surgical revision.

extension assessment was negative so the patient underwent total vulvectomy with bilateral inguinal dissection with resection of a pararectal mass of 3 cm, the histological aspect of the vulvectomy patch was in favour of 2 mm residual of adenoid cystic carcinoma located distant from the resection limits, the pararectal mass: seat of 2.5 * 1.5 cm of adenoid cystic carcinoma infiltrating the pararectal soft tissues with perineural neoplastic invasion and arriving at the confines of surgical resection, right and left curage were negative.

Postoperative pelvic MRI revealed an operative remodeling of the vulvo-anal region, with bilateral inguinal lymphocele. An adjuvant external radiotherapy, at the total dose of 66Gy, was delivered to the patient in 2 series: 1st on the pelvis and a boost on the operating bed (Figure. 3).

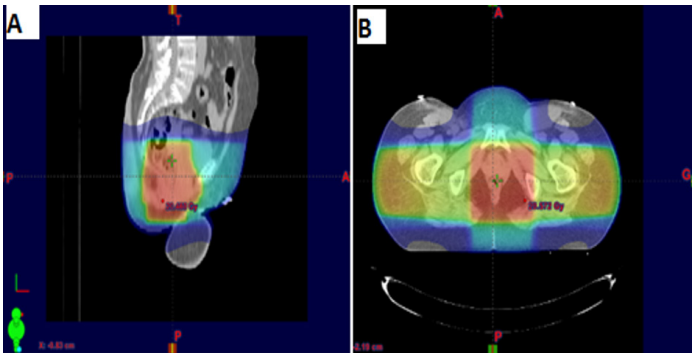

Figure 3. 3D conformational radiotherapy of the adenoide cystic carcinoma of vulv showing the dose's distribution of the Boost (A: Sagittal CT scan image; B: Axial CT scan image)

The patient has been in complete remission for 4 years with adverse effects suche as a post-radiation proctitis and lymphoedema of the two lower limbs.

DISCUSSION

Adenoid cystic carcinoma of vulva usually originates from the Bartholin's gland, but may rarely occur in the rest of the vulva. ACC constitutes only 10 % of Bartholin's gland carcinomas, which in turn, constitute only 0.1–7 % of vulval malignancies (4).

Theodor Billroth was the first to describe ACC as cylindromas in his histological studies in 1856. The incidence of ACC is not very high, in general (5). These are usually observed in the salivary gland. The average age of onset was 57.4 years old, and approximately 60% of patients are women (6). Typical symptoms are similar to those of a Bartholin's gland abscess, including a painless lump in the posterior half of the vulva with or without ulcerations and dyspareunia, abnormal bleeding, pruritus, and rarely, vulvar pain (7). Half of the cases of carcinoma of Bartholin's gland were initially clinically misdiagnosed as cysts or abscesses (8). The clinical diagnosis of a Bartholin's gland tumor includes the tumor located in the Bartholin's gland region, overlying skin intact, tumor located deep in the labia major, normal glandular elements present on histology, areas of apparent transition from normal to neoplastic elements, histological tumor type consistent with the Bartholin's gland origin and no evidence of a previous, concurrent,

or subsequent primary tumor of similar histologic type elsewhere (9). When the tumor progresses, the overlying skin may become ulcerated (10).

The preoperative diagnosis is very hard for clinicians, in general, and most cases are dependent on biopsy. The treatment aspect of this tumor was chiefly surgery or/ and coupled with radiotherapy. There is currently no consensus regarding the optimal surgical treatment for ACC of Bartholin's gland. Both simple excision and radical vulvectomy with or without lymph node dissection have been performed. According to the experience of Lelle et al, if an adequate surgical margin can be achieved, a more conservative surgical procedure with adjuvant radiationmay be reasonable (11). According to the review by Yang et al, 68.9% of patients who had a simple excision had recurrences compared with 42.9% of patients who had a radical vulvectomy. Although the information on the status of margins at the initial surgery was incomplete, the positivity of resection margin was 48% in the simple excision group and 30% in the radical vulvectomy group (12). Correspondently the cas of the patient of this presentation. Radical vulvectomy can reduce local recurrence, but it has no impact on distant metastasis.

Guidelines for postoperative chemotherapy and chemoradiotherapy are not established, despite the frequency of microscopically positive surgical resection margin relatively high. Adjuvant radiation therapy seems to lower the incidence of local recurrence in patients with positive resection margins. Rosenberg et al. (13) and Copeland et al. (14) reported the benefits of postoperative external beam radiation for patients with positive margins. Which is the case of our patient with positive margin who had received an adjuvant external beam radiation. Other adverse prognostic factor for local recurrence reported by Alsan et al. (15) is the presence of neural invasion.

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CONCLUSION

Adenoid cystic carcinoma is a rare tumor, usually part of salivary tumors of which it represents 10%. This kind of cancer is characterized by the absence of pain, destruction local structures, and a high rate of recidivism local and metastatic spread.

There is currently no consensus regarding the optimal surgical treatment. Guidelines for postoperative chemotherapy or chemoradiotherapy are not established. Adjuvant radiation therapy seems to lower the incidence of local recurrence in patients with positive resection margins, based on retrospective studies and case reports. Chemotherapy as adjuvant treatment is still under evaluation.

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MEDICAL RECORDS-International Medical Journal

Olgu Sunumu / Case Report

Extrapyramidal Syndromes such as Oromandibular Dystonia, Akathisia, Parkinsonism as a Consequence of Paroxetine Use: A Case Report

Paroksetin Kullanımının Bir Sonucu Olarak Oromandibular Distoni, Akatizi, Parkinsonizm: Bir Olgu Sunumu

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Abstract

Selective serotonin reuptake inhibitors (SSRI) are frequently used in the treatment of many psychiatric disorders such as major depressive disorder, anxiety disorder, and eating disorders. Side effects such as increased appetite, constipation, dry mouth, sedation, restlessness, sweating and sexual dysfunction due to SSRI use are frequently reported, while extrapyramidal syndromes (EPS) such as akathisia, dystonia and parkinsonism are rarely seen. There are reports of SSRIs such as fluoxetine, sertraline and fluvoxamine-induced EPS. We hereby report a 37-year-old male case of EPS such as oromandibular dystonia, akathisia, parkinsonism that developed after a chronic use of paroxetine 30 mg/day and its improvement with dose reduction. In this patient, paroxetine was discontinued as dose-reduced paroxetine was not sufficient to treat anxiety symptoms, and the use of escitalopram significantly reduced psychiatric symptoms.

Keywords: Paroxetine, akathisia, parkinsonism, dystonia, SSRI, extrapyramidal syndrome

Oz

Selektif serotonin geri alım inhibitörleri (SSGİ) major depresif bozukluk, anksiyete bozukluğu, yeme bozuklukları gibi birçok psikiyatrik hastalığın tedavisinde sıklıkla kullanılmaktadır. SSRI kullanımına bağlı iştah artışı, kabızlık, ağız kuruluğu, sedasyon, huzursuzluk, terleme, cinsel işlev bozukluğu gibi yan etkiler sıklıkla bildirilirken akatizi, distoni, parkinsonizm gibi extapiramidal sendromlar (EPS) nadiren görülmektedir. Fluoksetin, sertralin ve fluvoksamin gibi SSGİ'lere bağlı EPS bildirimleri bulunmaktadır. Burada, uzun süredir paroksetin 30 mg/gün kullanan 37 yaşındaki erkek hastada ortaya çıkan oromandibular distoni, akatizi, parkinsonizm gibi EPS yan etkilerinin doz azaltımı ile iyileşmesini sunduk. Bu hastada dozu azaltılmış paroksetin anksiyete semptomlarını tedavi etmeye yeterli olmadığı için paroksetin kesildi ve essitalopram kullanımı ile psikiyatrik semptomlar belirgin olarak azaltıldı.

Anahtar Kelimeler: Paroksetin, akatizi, parkinsonizm, distoni, SSGİ, ekstrapiramidal sendrom

INTRODUCTION

Although antipsychotic-induced extrapyramidal syndrome (EPS) has been well recognised anatomical, physiological and neurochemical, the mechanisms of antidepressant-induced EPS have not been fully understood. The first report on antidepressant-induced EPS was published in 1959, but until the widespread use of Selective Serotonin Reuptake Inhibitors (SSRI) in the 1980s, no significant studies have been conducted in this area. Epidemiological studies suggest that EPS occur in about 1 per 1000 adult patients managed by SSSRIs (1). The most commonly reported EPSs associated with SSRI use are akathisia and dystonia. Parkinsonism, tardive dyskinesia and tremor have been reported in decreasing frequency (2). There has been an increasing number of reports of the development or aggravation of movement disorders associated with

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exposure to the SSRIs such as fluoxetine, paroxetine, sertraline, fluvoxamine and citalopram (1, 2). In this case report, we present a 37-year-old male who developed EPS while using paroxetine. We discuss the clinical features, aetiology and significance of this rare clinical condition..

CASE PRESENTATION

A was 37-year-old, married, teacher, male patient was admitted to the psychiatric outpatient clinic with complaints of decreased bodily movements, slurring of speech, restlessness, contraction of chin and tongue. The patient's complaints started two weeks ago and he was admitted to the emergency department twice. It was learned that biperidene 5 mg/day intramuscular (IM) administered in the emergency department decreased complaints but resumed within 48 hours. He was using paroxetine 30 mg/day per oral (PO) for two years due to anxiety symptoms in our psychiatric outpatient clinic. She had been in remission for one and a half years and was taking the same dose of medication regularly. Her father was diagnosed with schizophrenia. General and systemic examination was within normal limits. Mental status examination revealed a decreased psychomotor activity and anxious affect. A diagnosis of generalized anxiety disorder was made according to Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) (3). The patient's thyroid and liver function tests were within normal limits. The fasting blood glucose, protein level and lipid profile were within normal limits. Chest X-ray and electrocardiogram gave normal results. The patient and relatives stated that there was no change in dietary and fluid intake in recent days. The patient had no drug use other than paroxetine. He had no systemic disease such as hypertension or diabetes mellitus. A history of smoking, alcohol and substance abuse was not available. Drug-induced EPS was considered due to SSRI use and the dose of paroxetine was reduced to 20 mg/day. The patient managed by biperidene 2 mg twice a day and propranolol 40 mg twice a day. EPS ceased two weeks after paroxetine dose reduction Biperidene and propranolol doses were gradually reduced and discontinued within one week. No additional treatment was applied for adverse effect. As the patient's anxiety symptoms persisted, escitalopram 5 mg/day was started and paroxetine dose was decreased and

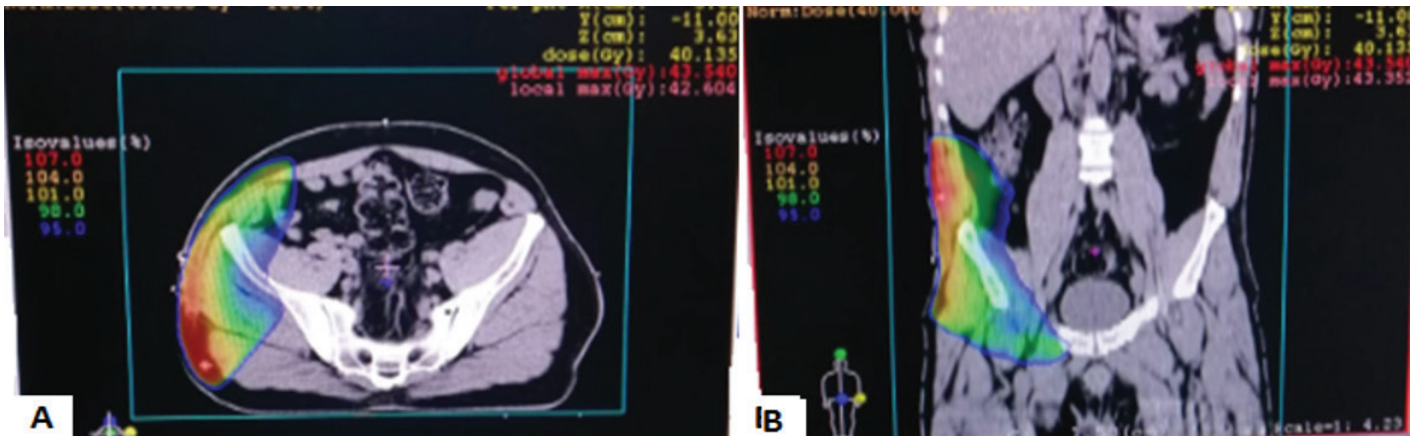

Figure 2. A= Axial tomodensitometric sections of 3 cm thick: Dose distribution of the patient's 3D radiation
B=Frontal tomodensitometric section : dose distribution of the patient's 3D radiation

discontinued. One month after the escitalopram dose was increased to 15 mg/day, the patient's anxiety symptoms improved significantly. The patients and their relatives were informed about the effects and possible side effects of the treatment. No similar side effects were reported during the follow-up of the patient. The patient and his relatives were warned about EPS due to paroxetine use and informed consent was obtained from them for their knowledges. Naranjo Adverse Dug Reaction Probability Scale (NADRPS) score of the patient was 7 (4).

DISCUSSION

Paroxetine is a SSRI and has common side effects such as constipation, dizziness, drowsiness, nausea, loss of appetite, xerostomy, as well as rare side effects such as EPS (5). This case report was evaluated as a case of EPS due to paroxetine. Because there was a temporal relationship between them, the side effect completely cured after dose reduction of the drug. Morphological factors of EPS were excluded. The NADRPS score indicates a probable association between drug use and side effect (4). The mechanism by which paroxetine could cause EPS has not been fully elucidated. However, it was speculated that a relationship with interactions between serotonergic and dopaminergic neurotransmitter systems may play a role paroxetine-induced EPS.

Meltzer et al. (6) resented the first evidence of possible pathophysiological mechanisms. They suggested an inhibition of both nigrostriatal and tuberoinfundibular dopaminergic neurons after exposure to fluoxetine (6). Dopamine cells project predominantly to the

nigrostriatal system. Nigrostriatal dopamine activity is mainly inhibitory and is balanced by the excitatory action of acetylcholine and by the inhibitory actions of γ-aminobutyric acid (GABA). Serotonin-containing neurons are known to be restricted to clusters of cells lying in or near the midline or raphe regions of the pons and upper brain stem. Moreover, the nucleus accumbens simultaneously receives dopamine projections from the ventral tegmental area and serotonin projections from the dorsal and median raphe nuclei, suggesting a dopamine-serotonin interaction at this level (1, 2).

Although specific approaches have been developed for the treatment of SSRI-induced EPS, it should be reasonable to manage these side effects in a similar way to antipsychotic-induced EPS. Particular attention should be paid to people who have reported a history of EPS due to psychotropic use. Patients should be evaluated frequently for side effects. Dose increases should also be more cautious (1). If an EPS side effect occurs, the accused drug should be discontinued or dose reduced. If these interventions fail, the drug should be replaced. The use of anticholinergic drugs for Parkinsonism is recommended. Again, anticholinergic drugs are also useful in dystonia. β-blockers can be useful in patients with akathisia and postural tremor (2). World Health Organisation (WHO) defines 'probable' as an event or laboratory test abnormality, with reasonable time relationship to drug intake. WHO also says this relationship cannot be explained by disease or other drugs, response to withdrawal clinically reasonable, rechallenge (not necessary) (7). Factors influencing patients with psychiatric disorders' compliance with medication include patient-related influences, physician-related variables, factors related to the patient's environment, treatment-related factors, and side effects. The influence of side effects has been demonstrated in patients' noncompliance with treatment. Sometimes, despite the side effects, some patients continue to be exposed to the drug. The level of functioning of the relatives of the patients, psychiatric or medical diseases which they have should be taken into consideration (8). For these reasons we have warned the patient and relatives about this side effect.

As a result, this case report suggests that physicians and relatives should be aware that paroxetine may induce EPS with a low quality of life and low compliance. Further systemic research should be conducted with respect to paroxetine-associated EPS to provide a greater understanding of both its prevalence and aetiology.

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