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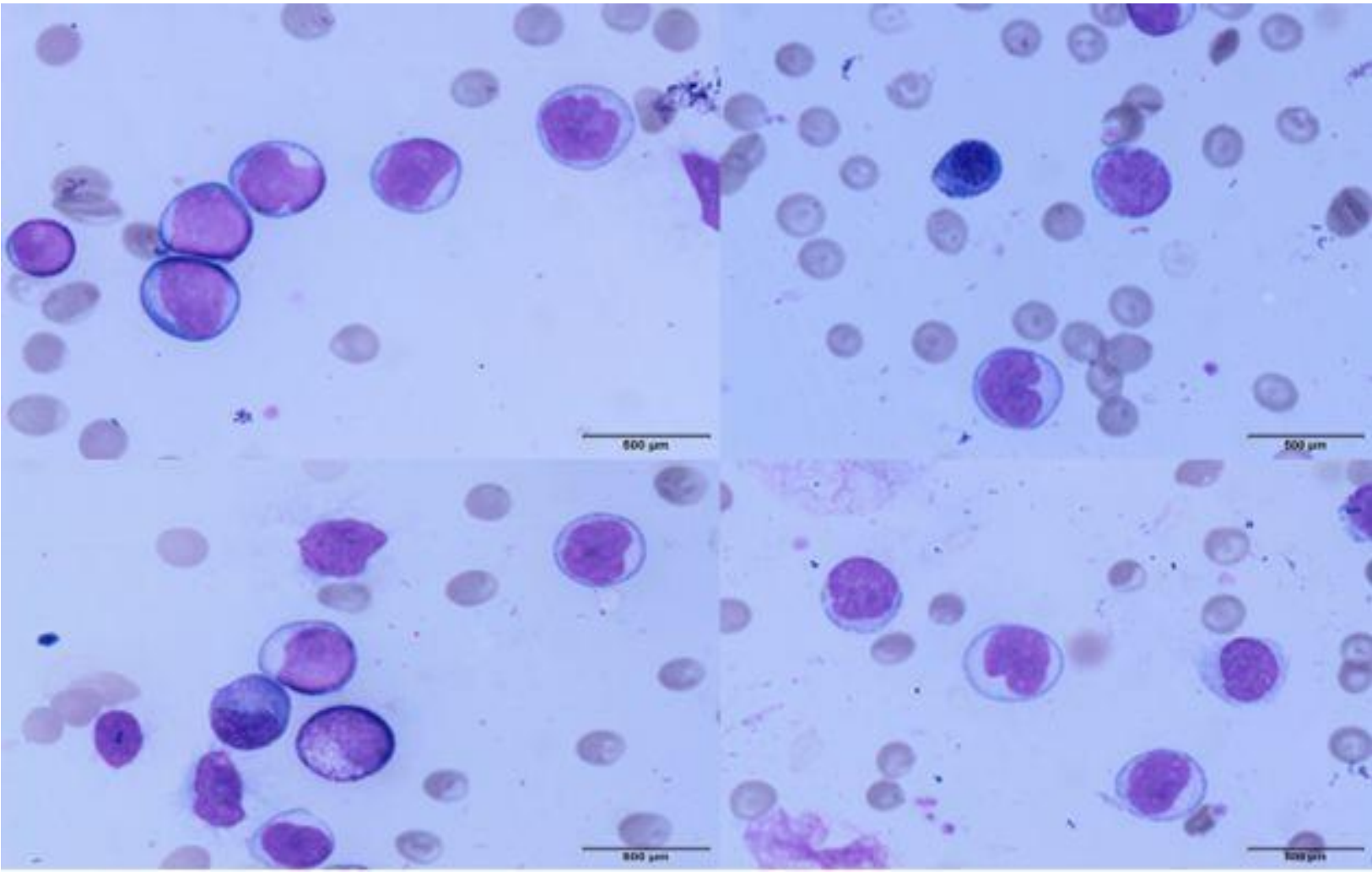

- **The effects of progressive relaxation method on the patients applied total knee arthroplasty**
- **The problems of patients with stoma and its effects on daily living activities**
- **Waldenstrom macroglobulinemia presenting as plasma cell leukemia associated with hyperviscosity syndrome**

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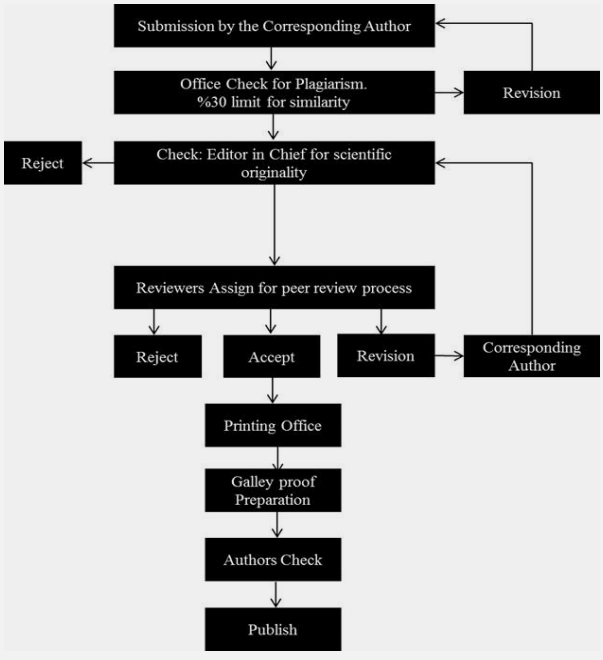

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Research Article Doi: 10.17546/msd.483939

The effects of progressive relaxation method on the patients applied total knee arthroplasty

Halise Çınar[1], Rahşan Çam[2]

Abstract

Objective: The aim of this quasi-experimental study is to depict the effects of progressive relaxation method on the patients who were applied total knee prosthesis.

Material and Methods: The findings of the study were obtained from the patients who applied to Adnan Menderes University Research and Practice Hospital, Clinic of Orthopedics and Traumatology with the diagnosis of gonarthros in October 2014–February 2015.Sample of the study was consisted of 80 patients; 40 in experimental group and 40 in control group. The study findings were collected via patient information forms which showed the patients' introductive information, and via Visual Analogue Scale in which independent variables of stable-ongoing anxiety inventory were investigated.

Results: According to the results, experimental group patients' age mean was analyzed as X=62.27±7.98, and control group patients' X=62.35±9.80. 70% of the experimental group patients were female, and 75% of the control group patients were female, 50% of the patients in the experimental group were found to have any chronicle ilness; 62.5% of them had operation experience in the past; 60% used adjuvant tools; 62.5% used their own techniques to overcome the pain when emerged; and body-mass index mean was X=27.62±3.75. 67.5% of the patients in the control group were found to have any chronicle illness; 60% of them had operation experience in the past;76.2% used adjuvant tools;72.5% used their own techniques to overcome the pain when emerged; and body-mass index mean was X=29.57±5.10.

Conclusion: It is considered that progressive relaxation method which was applied to patients has a positive effect on decreasing the post-operative pain and anxiety.

Keywords: Knee Arthroplasty, Progressive Relaxation, Pain, Anxiety

Introduction

Knees are the biggest joints of the body that carry the weight of the body, that support various movements such as standing, crouching, walking, running and jumping, that are exposed to the highest force in the body, and that provide stabilization with bones, ligaments, peripheral muscles and meniscus (1). Total knee arthroplasty (TKA) is the replacement of articular surface (tibial, femoral and patellar joint surfaces), which is degenerated due to rheumatoid arthritis, osteoarthritis, posttraumatic arthritis, and other nonspecific arthritis and thus causes complaints such as severe pain and dysfunction, with prosthesis made with metal and plastic (1). TKA surgery is among the major surgical operations. Patients may experience anxiety before and after this operation. Anxiety is a universal experience and can take place in every person's life. It is an unpleasant state of emotive concern or worry and is defined as the tension and affection that the one feels under threat (2,3,4).

Most of the patients experience different levels of anxiety and fear before surgery. Preoperative anxiety has been reported in 60-80% of the patients to undergo surgical intervention. They experience severe pain in the postoperative period (5). With the beginning of human thinking, pain has become primary among the main problems that human beings have on the mind and this problem has been one of the most important interests of humankind up to the present (6). Pain is the primary postoperative complaint. Postoperative pain is an acute pain that starts with surgical trauma, decreases gradually and terminates with tissue healing (7). Postoperative pain causes anxiety in particular and affects the mental state of elderly patients (8). Unrelievable severe pain makes rehabilitation and healing process difficult and causes a prolonged hospitalization and thus leads to increased health care costs (8).

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It has been reported that the incidence of pain in patients who have undergone surgery demonstrates a broad distribution in Turkey changing from 30% to 97% (9). It is known that important surgeries, especially in fields such as Orthopedics and Traumatology, General Surgery and Cardiovascular Surgery, cause fear of death in patients and that this fear changes to general anxiety and postoperative pain afterward (10,11). Due to the frequently seen postoperative pain in patients, non-pharmacological treatment methods are used as well as pharmacological treatments. Progressive relaxation techniques which are developed by Edmund Jacobson are used as a non-pharmacological treatment method, especially in orthopedics and traumatology clinics and physical therapy and rehabilitation clinics. With this technique, 16 different muscle groups of the body can make stretching and relaxation movements. Studies have shown that the progressive relaxation technique relieves pain and anxiety in patients.

The aim of this research the effects of progressive relaxation method on the patients applıed total knee arthroplasty

Materials and Methods

The research is a quasi-experimental study conducted to investigate the effect of progressive relaxation method on pain and anxiety in patients who have undergone Total Knee Arthroplasty (TKA) between October 2014 and February 2015 at Orthopedics and Traumatology Clinic of Adnan Menderes University Practice and Research Hospital.

The universe of the research consisted of female and male patients who applied to the Orthopedics and Traumatology Clinic, who volunteered to participate in the research, who were at the age of 18 years and over, who were mentally healthy, who did not have any problem related to seeing, hearing and speaking, who knew Turkish, who have been diagnosed with gonarthrosis and who were going to undergo total knee arthroplasty, and who were at least literate in terms of educational status. G-power analysis was used for the calculation of the sample size. In the calculation made with G-Power program, the sample size was determined as 64 by accepting the effect size as 0.3, the margin of error (α) as 0.05, power (1-β) as 0.80 and it was determined as 76 at a minimum with 1.2 was calculated with 1.2 design effect. According to the results of the G-Power analysis, the sample size was planned to consist a total of 80 patients, 40 in the control group and 40 in the experimental group.

Data Collection Tools

The data of the research were collected between October 01, 2014 and February 15, 2015, at ADU Practice and Research Hospital. The research data were collected using patient introduction form prepared by the researcher. Patient introduction form included 19 open-ended questions about the sociodemographic characteristics of the patients included in the experimental and control groups (age, sex, marital status, educational status, job/occupational status, income status, place of residence, health insurance, body mass index, chronic disease, continuously used medication, past surgery experience, the use of assistive device during the disease and the methods used for coping with pain). In addition, there were sections that included the State-Trait Anxiety Inventory (STAI) and Visual Analogue Scale (VAS) measurements made and recorded preoperatively and on postoperative 1st and 2nd-days. In order to prevent the interaction between the patients in the experimental and control group, the data were collected first from the control group and then from the experimental group. Primarily, the patient introduction form was applied to the patients in the control group in the preoperative period. Then, the state-trait anxiety levels of the patients were determined and the preoperative pain scores of the patients were calculated according to the VAS pain scale. State levels and VAS pain scores of the patients were calculated on the postoperative 1st-day. On the postoperative 2nd-day, routine applications continued in the clinic. The state anxiety levels and VAS pain scores of the patients were calculated. For the selection of the experimental group patients, the patients who met the sample selection criteria were selected. The patients who were suitable for the research were informed about the study and a written informed consent form was taken from each patient volunteered to participate in the study. The patient introduction form was applied to the patients who were hospitalized for TKA surgery in the preoperative period and they were informed about the research. The preoperative state-trait anxiety levels of the patients were determined and their pain scores were calculated according to VAS. Progressive relaxation technique was first explained practically by the researcher to the patients. A brochure on progressive relaxation techniques prepared by the researcher was given to the patients and they were asked to do the exercises. The points which the patients had difficulty or did not understand were re-explained practically. On the postoperative 1st-day, progressive relaxation techniques were re-explained to remind them and state anxiety levels and VAS pain scores after approximately 1 hour from the exercises were calculated. State anxiety levels and VAS pain scores were calculated on the postoperative 2nd-day.

Ethical Consideration

A written clinical research permission was obtained from Adnan Menderes University Practice and Research Hospital and the written approval was obtained from Adnan Menderes University Medical Faculty Non-Invasive Clinical Trials Ethics Committee. The purpose of the study, the fact that there was no risk and the fact that there would be no any harmful procedure were explained to each patient in the experimental group and the control group, and a written informed consent form was obtained from each patient.

Statistical Analyses

In the evaluation of the data, the descriptive statistical methods (percentage calculations, mean, standard deviation) were used. In addition, in the Kolmogrov-Simirnov test conducted to determine normal distribution in the analyses, preoperative TAI was determined as 0.043, preoperative SAI as 0.002, postoperative 1st-day SAI as

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0.000, postoperative 2nd-day SAI as 0.006, preoperative VAS as 0.000, postoperative 1st-day VAS as 0.000, and postoperative 2nd-day VAS as 0.001. Nonparametric analyses were preferred since they were not suitable to a normal distribution (Mann Whitney U test, Wilcoxon test, and Spearman Correlation). The data obtained from the study were analyzed using SPSS (Statistical Package for Social Sciences) for Windows 18 (SPSS Inc., Chicago, IL, USA). The license number of SPSS is 10241440. A p value of <0.05 and 95% confidence interval was accepted as significant.

Strengths and Limitations

The fact that only volunteer patients were involved in the study and that the research was conducted at only one hospital, within a specific period of time, were the primary limitations of this study. Secondly, as another limitation, data were restricted to being collected within the period of time set for the master's thesis.

Results

The mean age of the patients in the control group was 62.35±9.80 and the age range was between 33 and 85 years. It was determined that of the patients, 75% (30) were female, 55% (22) were primary school graduates, 50% (20) were not employed, and 55% (22) were living in a district. The mean age of the patients in the experimental group was 62.27±7.98 and the age range was between 31 and 81 years. It was determined that of the patients, 70% (28) were female, 47.5% (19) were primary school graduates, 50% (20) were not employed and 40% (16) were living in a district. In this respect, it was seen that both groups were similar to each other in terms of sociodemographic characteristics and that there was no sociodemographic difference between the groups that could affect the research results (p>0.05).

It was found that 67.5% (27) of the patients in the control group had a chronic disease and that 74.1% (20) of the patients who had a chronic disease were diagnosed with hypertension. 60% (24) of the patients were found to have a past surgical experience. It was determined that 52.5% (21) of the patients were using an assistive device and that 76.2% (16) of the users were using a cane. It was found that 75% (30) of the patients were continuously using a medication and that 66.7% (20) did not use painkillers. It was determined that 72.5% (29) of the patients had a coping method in the presence of pain and that 33.3% (10) of the patients used painkillers as a coping method. When the BMI distributions of the patients were examined, 25% (10) were between 18.5 and 24.9 kg/m2 (normal weight), 20% (8) were between 25 and 29.9 kg/m2 (overweight), and 55% (22) were between 30 and 39.9 kg/m2 (obese). The mean BMI was found as 29.57±5.10 and BMI ranged from 19.59 to 39.96.

It was found that 50% (20) of the patients in the experimental group had a chronic disease and that 65% (13) of the patients who had a chronic disease were diagnosed with hypertension. 62.5% (25) of the patients were found to have a past surgical experience. It was determined that 60% (24) of the patients were using an assistive device and that 54.2% (13) of the users were using a cane.

It was found that 77.5% (31) of the patients were continuously using a medication and that 54.8% (17) were using painkillers. It was determined that 62.5% (25) of the patients had a coping method in the presence of pain and that 54.8% (17) of the patients used painkillers as a coping method. When the BMI distributions of the patients were examined, 22.5% (9) were between 18.5 and 24.9 kg/m2 (normal weight), 50% (20) were between 25 and 29.9 kg/m2 (overweight), and 27.5% (11) were between 30 and 39.9 kg/m2 (obese). The mean BMI of the patients in the experimental group was found as 27.62±3.75, and BMI ranged from 20.81 to 35.11. In this respect, it was seen that both groups were similar to each other in terms of health status characteristics except the presence of osteoporosis, cancer and heart disease (p<0.05), and that there was no difference between the groups in terms of health status except osteoporosis, cancer and heart disease, which could affect the results of the study (p>0.05).

When preoperative SAI and TAI mean scores of the patients in the control and experimental groups were compared, there was no statistically significant difference found between the SAI and TAI mean scores of the control and experimental groups (p<0.05). When postoperative 1st-day SAI mean scores were compared, the SAI mean scores of the patients in the control group were found to be significantly lower than those of the patients in the experimental group (12.090; 0.001). When postoperative 2nd-day SAI mean scores were compared, the SAI mean scores of the patients in the control group were found to be significantly lower than those of the patients in the experimental group (9.110; 0.003).

Preoperative VAS mean scores of the patients in the control group were found to be statistically significantly lower than those of the patients in the experimental group (12.064; 0.001); however, it was determined that postoperative 1st and 2nd-day VAS mean scores of the patients in the experimental group were statistically significantly lower than those of the patients in the control group (22.302; 0.000: 32.716; 0.000).

When the preoperative SAI mean score and the postoperative 1st-day SAI mean score of the patients in the experimental group were compared, the postoperative 1st-day SAI mean score was found to be statistically significantly higher than the preoperative SAI mean score (-3.039; 0.002). When the preoperative SAI mean score and postoperative 2nd-day SAI mean score were compared, there was no statistically significant correlation found between the postoperative 2nd-day SAI mean score and the preoperative SAI mean score (-0.082;0.412). When the postoperative 1st-day SAI mean score and postoperative 2nd-day SAI mean score were compared, the postoperative 2nd-day SAI mean score was found to be statistically significantly lower than the postoperative 1st-day SAI mean score (-2.171;0.030).

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When the preoperative and postoperative 1st and 2nd-days VAS mean scores of the patients in the experimental group were compared, it was determined that the postoperative 2nd-day VAS mean score of the patients was statistically significantly lower than postoperative 1st-day VAS mean score (-4.967;0.000) and preoperative VAS mean score (-5.539;0.000). When the preoperative and postoperative 1st-day VAS mean scores were compared, the postoperative 1st-day VAS mean score of the patients was found to be statistically significantly lower than the preoperative VAS mean score (4.292;0.000).

There was a positive, moderate correlation between the preoperative SAI mean score and the postoperative 1st-day SAI mean score of the control group (0.454;0.003). There was no statistically significant correlation found between the preoperative SAI mean score and the postoperative 2nd-day SAI mean score of the control group (0.292;0.068). There was no statistically significant correlation found between the preoperative SAI mean score and the preoperative TAI mean score of the control group (0.171;0.292).

There was no statistically significant correlation found between the preoperative SAI mean score and preoperative, postoperative 1st and 2nd-days VAS mean scores of the control group (-0.040;0.809: -0.067;0.681: 0.282;0.078). There was no statistically significant correlation determined between the postoperative 1st-day SAI and the postoperative 2nd-day SAI mean score (0.278;0.082). There was no statistically significant correlation found between the postoperative 1st-day SAI mean score and preoperative TAI mean score of the control group (0.094;0.564).

There was no statistically significant correlation found between the postoperative 1st-day SAI mean score and preoperative, postoperative 1st and 2nd-days VAS mean score of the control group (0.243;0.131: -0.125;0.441: 0.029;0.861). There was no statistically significant correlation determined between the postoperative 2nd-day SAI mean score and the preoperative TAI mean score (0.016;0.920).

There was no statistically significant correlation found between the postoperative 2nd-day SAI mean score and the preoperative, postoperative 1st and 2nd-days VAS mean scores of the control group (-0.001;0.997: -0.183;0.259: -0.112;0.490). There was no statistically significant correlation determined between the preoperative TAI mean score and the preoperative VAS mean score (0.247;0.124). There was a positive, moderate correlation found between the preoperative TAI mean score and postoperative 1st-day VAS mean score of the control group (0.336;0.034).

There was a positive, moderate correlation determined between the preoperative TAI mean score and the postoperative 2nd-day VAS mean score of the control group (0.390;0.013).

There was no statistically significant correlation determined between the preoperative VAS mean score and the postoperative 1st and 2nd-days VAS mean scores (-0.194;0.229: -0.177;0.274). There was a positive, moderate correlation found between the postoperative 1st-day VAS mean score and the postoperative 2nd-day VAS mean score (0.789;0.000).

There was a positive, significant correlation found between the preoperative SAI mean score and the postoperative 1st-day SAI mean score of the experimental group (0.517;0.001).

There was no statistically significant correlation determined between the preoperative SAI mean score and the postoperative 2nd-day SAI mean score of the experimental group (-0.242;0.132). There was no statistically significant correlation found between the preoperative SAI mean score and the preoperative TAI mean score of the experimental group (-0.304;0.057).

There was no statistically significant correlation found between the preoperative SAI mean score and the preoperative, postoperative 1st-day VAS mean scores of the experimental group (-0.037;0.820: 0.293;0.067). There was a positive, moderate correlation determined between the preoperative SAI mean score and the postoperative 2nd-day VAS mean score of the experimental group (0.318;0.045). There was no statistically significant correlation found between the postoperative 1st-day SAI mean score and the postoperative 2nd-day SAI mean score (-0.128;0.431).

There was a negative, moderate correlation determined between the postoperative 1st-day SAI mean score and the preoperative TAI mean score of the experimental group (-0.459;0.003). There was no statistically significant correlation found between the postoperative 1st-day SAI mean score and the preoperative, postoperative 1st and 2nd-days VAS mean scores of the experimental group (0.003;0.986: 0.123;0.450: 0.292;0.068).

There was a positive, moderate correlation determined between the postoperative 2nd-day SAI mean score and the preoperative TAI mean score (0.491;0.001). There was no statistically significant correlation found between the postoperative 2nd-day SAI mean score and the preoperative, postoperative 1st and 2nd-day VAS mean scores of the experimental group (0.095;0.559: 0.209;0.195: -0.121;0.458).

There was no statistically significant correlation determined between the preoperative TAI mean score and the preoperative, postoperative 1st and 2nd-day VAS mean scores (-0.002;0.992: -0.007;0.956: -0.277;0.084).

There was no statistically significant correlation found between the preoperative VAS mean score and the postoperative 1st and 2nd-day VAS mean scores (0.129;0.427: 0.205;0.205). There was no statistically significant correlation determined between the postoperative 1st-day VAS mean score and the postoperative 2nd-day VAS mean score (0.290;0.070).

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Table 1. Distribution of the Patients in Control and Experimental Groups According to Their Health Status Characteristics

Health Status Characteristics	Control Group (n=40)		Experimental Group (n=40)		x^2
	N	%	n	%	
Presence of a Chronic Disease					
Yes	27	67.5	20	50	2.527
No	13	32.5	20	50	0.112
Chronic Diseases					
Diabetes (n=47)	7	25.9	6	30	0.95 0.758
Hipertension (n=47)	20	74.1	13	65	0.452 0.501
Asthma (n=47)	6	22.2	8	40	1.736 0.188
Other (osteoporosis, cancer, heart diseases)	7	25.9	13	65	7.176 0.007
History of past surgery					
Yes	24	60	25	62.5	0.503
No	16	40	15	37.5	0.818
Use of assistive device during disease					
Yes	21	52.5	24	60	0.457
No	19	47.5	16	40	0.499
Type of assistive device used during disease					
Cane (n=45)	16	76.2	13	54.2	2.371
Other (Crutch, leading string)	5	23.8	11	45.8	0.124
Presence of continuously used medication					
Yes	30	75	31	77.5	0.069
No	10	25	9	22.5	0.793
Use of analgesics					
Yes	10	33.3	17	54.8	2.858
No	20	66.7	14	45.2	0.091
Use of coping methods in the presence of pain					
Yes	29	72.5	25	62.5	0.912
No	11	27.5	15	37.5	0.340
The coping method used in the presence of pain					
Use of painkiller (n=54)	10	33.3	17	54.8	2.858 0.091
Resting (n=54)	9	31	13	52	2.444 0.118
Other (Physical therapy application, exercising (n=54))	7	24.1	7	28	0.104 0.747
Body Mass Index (BMI)					
18.5-24.9 kg/m^2 (normal weight)	10	25	9	22.5	
25-29.9 kg/m^2 (overweight)	8	20	20	50	
30-39.9 kg/m^2 (obese)	22	55	11	27.5	
	X±SD	Range	X±SD	Range	
	29.57±5.10	19.59 39.96	27.62±3.75	20.81 35.11	

*Chi-square (X2)

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Table 2. Comparison of Preoperative Trait Anxiety Inventory (TAI), Preoperative and Postoperative 1st and 2nd-day State Anxiety Inventory (SAI) and VAS Mean Scores of the Patients in Control and Experimental Groups

Inventories	Control Group (n=40) Mean±SD	Experimental Group (n=40) Mean±SD	U p
PreoperativeTAI	50.07±5.07	50.10±3.28	0.108 0.743
Preoperative SAI	45.87±4.08	46.52±3.59	0.390 0.532
Postoperative1st-day SAI	45.55±4.90	48.25±1.59	12.090 **0.001**
Postoperative2nd-day SAI	44.92±4.37	47,02±2.66	9.110 **0.003**
PreoperativeVAS	4.90±2.45	6.57±1.35	12.064 **0.001**
Postoperative 1st-day VAS	6.70±1.72	4.65±1.76	22.302 **0.000**
Postoperative 2nd-day VAS	5.00±1.82	2.50±1.15	32.716 **0.000**

*Mann Whitney U (U)

Table 3. Comparison of the Preoperative and Postoperative 1st and 2nd-day State Anxiety Inventory (SAI) and VAS Mean Scores of the Patients in the Experimental Group

Groups	Mean ± SD	Z p
Preoperative SAI Postoperative 1st-day SAI	46.52±3.59 48.25±1.59	-3.039 **0.002**
Preoperative SAI Postoperative 2nd-day SAI	46.52±3.59 47.02±2.66	-0.082 0.412
Postoperative 1st-day SAI Postoperative2nd-day SAI	48.25±1.59 47.02±2.66	-2.171 **0.030**
Preoperative VAS score Postoperative 1st-dayVAS score	6.57±1.35 4.65±1.76	-4.292 **0.000**
Postoperative 1st-dayVAS score Postoperative 2nd-dayVAS score	4.65±1.76 2.50±1.15	-4.967 **0.000**
Preoperative VAS score Postoperative 2nd-dayVAS score	6.57±1.35 2.50±1.15	-5.539 **0.000**

*Wilcoxon Test (Z)

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Table 4. The Correlation Between Preoperative Trait Anxiety Inventory (TAI), Preoperative, Postoperative 1st and 2nd-days State-Trait Anxiety Inventory (STAI) and VAS Mean Scores of The Patients in Control Group

	Preoperative SAI **r** **p**	Postoperative 1st-day SAI **r** **p**	Postoperative 2nd-day SAI **r** **p**	Preoperative TAI **r** **p**	Preoperative VAS **r** **p**	Postoperative 1st-dayVAS **r** **p**
Postoperative 1st-day SAI	0.454 **0.003**					
Postoperative 2nd-day SAI	0.292 0.068	0.278 0.082				
Preoperative TAI	0.171 0.292	0.094 0.564	0.016 0.920			
Preoperative VAS	-0.040 0.809	0.243 0.131	-0.001 0.997	0.247 0.124		
Postoperative 1st-day VAS	-0.067 0.681	-0.125 0.441	-0.183 0.259	0.336 **0.034**	-0.194 0.229	
Postoperative 2nd-dayVAS	0.282 0.078	0.029 0.861	-0.112 0.490	0.390 **0.013**	-0.177 0.274	0.789 **0.000**

*Spearman Correlation (r)

Table 5. The Correlation Between Preoperative Trait Anxiety Inventory (TAI), Preoperative, Postoperative 1st and 2nd-days State-Trait Anxiety Inventory (STAI) and VAS Mean Scores of The Patients in Experimental Group

	Preoperative SAI **r** **p**	Postoperative 1st-day SAI **r** **p**	Postoperative 2nd-day SAI **r** **p**	Preoperative TAI **r** **p**	Preoperative VAS **r** **p**	Postoperative 1st-day VAS **r** **p**
Postoperative 1st-day SAI	0.517 **0.001**					
Postoperative 2nd-day SAI	-0.242 0.132	-0.128 0.431				
Preoperative TAI	-0.304 0.057	-0.459 **0.003**	0.491 **0.001**			
Preoperative VAS	-0.037 0.820	0.003 0.986	0.095 0.559	-0.002 0.992		
Postoperative 1st-day VAS	0.293 0.067	0.123 0.450	0.209 0.195	-0007 0.965	0.129 0.427	
Postoperative 2nd-day VAS	0.318 **0.045**	0.292 0.068	-0.121 0.458	-0.277 0.084	0.205 0.205	0.290 0.070

*Spearman Correlation (r)

Discussion

In this study, control and experimental groups were compared in terms of some variables reported in the literature (12,13,14,15) indicating the effect of progressive relaxation method on pain and anxiety. Nurses use various methods such as changing the patient's position, hot-cold application, massage, relaxation techniques as well as medications in order to relieve the pain after diagnosing it (1). In the study conducted by Yıldırım, it was seen that "standing up, walking and exercising" increased the pain by 98.6% while "the use of analgesic medication" (65.3%) and "hot-cold application with analgesic medication" (24.7%) reduced the pain. In the study conducted by Akyol, it was found that 38.4% of the patients who have undergone total knee arthroplasty had a reduced pain through analgesic medication, 29.2% through resting and 13.3% through lying.

In addition, it was noticed that those patients decreased their physical activities to reduce pain and to protect the joint and muscle. In the study conducted by Büyükyılmaz, it was seen that changing position increased the pain in 78.7% of orthopedic patients, and that analgesic medication reduced the pain in 95.3% of the patients. In the study conducted by Yıldırım, it was found that exercise increased the pain. In our study, on the other hand, exercising reduced the pain in 28% (7) of the patients and it was noticed that the patients used this method as a coping method when they had pain. In addition, it was seen in other studies that patients mostly use painkillers when they have pain (16,17,18).

Concerns related to anesthesia and surgical intervention are known to cause anxiety in the preoperative period (19).

It is reported that 60-80% of patients to undergo surgical intervention have preoperative anxiety (20). Cimili stated that the prevalence of preoperative anxiety symptoms was between 10% and 30% and that the most important cause of anxiety in orthopedic patients was the unrelievable/unreducable pain (21). In the study conducted by Büyükyılmaz, it was determined that mean preoperative state anxiety score was 59.27±5.55 in the control group and 57.20±5.57 in the experimental group. On the other hand, the trait anxiety score was found as 44.43±3.75 in the control group and 42.33±6.02 in the experimental group. In addition, it was reported that there was no significant difference between the control and experimental groups in terms of anxiety characteristics ($p>0.05$). It was noticed that the anxiety levels of the patients in the experimental group decreased after the relaxation exercises and that this change was highly significant between all the measurements performed before and after exercising. In the study conducted by Turhan in order to investigate the correlation between preoperative and postoperative anxiety in patients who were going to undergo an elective surgical operation and patient satisfaction, the preoperative anxiety score of the patients who participated in the study was found to be 44.32±11.12 and the postoperative anxiety score was found to be 38.28±9.14. When the preoperative and postoperative state-trait anxiety scores of the patients who participated in the study were examined according to the unit, the preoperative state-trait anxiety score of the patients who have undergone orthopedic surgery was determined to be 39.31±8.96, and the postoperative state-trait anxiety score was found to be 39.38±10.12. In the study conducted by Taşdemir et al. in order to compare the preoperative and postoperative anxiety levels of patients who were preoperatively informed using State-Trait Anxiety Inventory Test, the preoperative anxiety score of the patients was found as 40.6±11.23 and postoperative anxiety score was found as 37.5±10.28. In this study, there was a statistically significant decrease in the anxiety levels between the preoperative period and postoperative period (12,15,22). The results of our study were different than the results of other studies. In some studies, it was seen that the level of anxiety increased (12,22), whereas the level of anxiety decreased in some studies (15,23,24). The fact that the level of anxiety was found to be higher on the postoperative 1st-day than on the preoperative period in our study may be due to the fear and trauma experienced by the patients during the operation.

Pain is a commonly seen and long-lasting problem in orthopedic diseases (1). In the study conducted by Yavuz titled "non-pharmacologic interventions in postoperative pain management and comparison of analgesic practice method and routine analgesic method according to patients' own pain assessment", it was seen that there was a statistically significant decrease in the pain level of patients as a result of 2-day follow-up. In the study conducted by Rejeh et al. to investigate the effect of systematic relaxation techniques on anxiety and pain in older patients undergoing abdominal surgery, VAS pain scores of the patients were controlled 4 times: in the preoperative period and postoperative 15th minute, 6th hour and 12th hour. It was found that the preoperative VAS pain score was 6.96±1.62 in the control group and 7.08±1.59 in the experimental group. In the control group, VAS pain score was found to be 5.35±094 at the postoperative 15th minute, 4.77±0.73 at the postoperative 6th hour, and 3.64±0.45 at the postoperative 12th hour. In the experimental group, VAS pain score was found to be 4.12±1.83 at the postoperative 15th minute, 2.74±1.50 at the postoperative 6th hour, and 1.88±0.85 at the postoperative 12th hour. It was seen that the pain levels of the patients were low in the studies conducted (26,27). Likewise, in our study, non-pharmacological methods applied to patients reduced the pain. Therefore, it is seen that the progressive relaxation technique is effective on pain. In the study conducted by Rejeh et al., it was determined that the preoperative anxiety score of the patients was 6.16±1.17 in the experimental group. In addition, the anxiety score of the experimental group was determined to be 5.77±1.41 at the postoperative 15th minute, 3.48±0.80 at the postoperative 6th hour and 2.45±0.61 at the postoperative 12th hour. In the study conducted by Yazar, there was no statistically significant difference between the preoperative trait anxiety scores and the trait anxiety scores in the morning of the surgery according to the groups ($p>0.05$). There were statistically significant decreases in the preoperative morning trait anxiety scores compared to the preoperative scores in the control group ($p<0.01$). There were statistically significant decreases in the preoperative morning trait anxiety scores compared to the preoperative scores in the experimental group ($p<0.05$) (24,25,26). Our study findings are compatible with the finding of studies conducted. Progressive relaxation technique applied is thought to be effective on the fact the postoperative 1st-day state anxiety score was lower than that in the preoperative period. There was no statistically significant correlation between the postoperative 2nd-day SAI mean score and the preoperative SAI mean score. This may be due to the fact that the patients stood up on the 2nd-day. In the study conducted by Yıldızeli Topçu to investigate the effect of relaxation exercise on pain in patients who underwent upper abdominal surgery, it was found that patients who applied relaxation exercise had a lower pain level. In the study conducted by Sjöling et al. to assess the effect of training about pain experience given to patients to undergo total hip arthroplasty surgery on postoperative pain, it was found that patients in the experimental group experienced less pain during the 3-day follow-up. Good et al. (2002) reported that systematic relaxation applied to 102 female patients who underwent abdominal surgery was effective in relieving postoperative pain (28,29,30). It is seen that our findings are compatible with the findings of the studies conducted. It can be said that progressive relaxation technique is effective on pain.

Patients who experience anxiety at high levels are more sensitive to pain (31,32). In the study conducted by Demir and Arslantaş, it was seen that there was no statistically significant difference between the state anxiety mean scores of the individuals before the application and that there was a statistically significant correlation between the state anxiety mean scores after the application. In the study conducted by Büyükyılmaz, it was seen that pain and state anxiety levels of the experimental group were significantly

lower than those of the control group in the evaluation made after relaxation exercises and back massage applied to the experimental group on postoperative days. In the study conducted by Pellino et al., there was no statistically significant difference between experimental and control groups in terms of mean pain severity and anxiety scores during the 3-day follow-up period; however, the use of opioid drugs on 2nd-day was less in the experimental group (11,21). When the studies conducted were examined, there were no differences in the pain and anxiety levels of the patients between the control and experimental groups in the preoperative period; however, there were differences in the postoperative days. In some studies, it was observed that pain and anxiety levels of the patients in the experimental group decreased during the postoperative days (12,28,33,34,35), whereas there was no difference found in the mean pain and anxiety scores between the experimental and control groups in the study conducted by Pellino et al. In our study, the mean anxiety scores were found to vary according to days.

Conclusion

It is thought that progressive relaxation method has a positive effect on decreasing postoperative pain and anxiety in patients who underwent total knee arthroplasty.

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Waldenstrom macroglobulinemia presenting as plasma cell leukemia associated with hyperviscosity syndrome

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Abstract

Objective: Waldenstrom macroglobulinemia (WM) is a rare indolent neoplastic disease characterized by a wide range of clinical presentations related to the direct tumor infiltration. The disease is characterized by monoclonal immunoglobulin M protein in the serum and infiltration of bone marrow with lymphoplasmacytic cells.

Case report: We, herein, present an unusual case of WM. A 77-year-old woman admitted to the hospital with fatigue, anorexia, and fever. She had white blood cell elevation and splenomegaly. The patient had no peripheral lymphadenopathy. A large number of plasmablast-like cells were seen in the peripheral blood smear. Laboratory studies revealed a white blood cell count of 54.8 × 103/µl, hemoglobin level of 8.2 g/dl and platelet count was 120 × 103/µl. The diagnosis of WM was established after immunohistochemical analysis of the patient's bone marrow that revealed the presence of a lymphoid/lymphoplasmacytoid-like bone marrow infiltrate along with an elevated serum IgM level. The patient responded to the chemotherapy both clinically and serologically. This case is unusual since numerous plasmablast like cells were seen in peripheral blood smear like plasma cell leukemia at the admission to the hospital.

Conclusion: This is the case report of a patient with Waldenstrom macroglobulinemia presenting like plasma cell leukemia in the first admission adding to the spectrum of clinical presentations seen in this disease. This adds to the wide variety of clinical presentations of Waldenstrom macroglobulinemia.

Keywords: Monoclonal gammopathy, Plasma cell leukemia, waldenstrom Waldenstrom macroglobulinemia

Introduction

Waldenstrom macroglobulinemia (WM) is an unusual lymphoplasmacytic lymphoma characterized by an extensive range of clinical presentations related to direct tumor infiltration. The disease is characterized by monoclonal immunoglobulin M protein in the serum and infiltration of bone marrow with lymphoplasmacytic cells (1).

Most commonly it presents with cytopenias, hepatosplenomegaly, lymphadenopathy, constitutional symptoms and hyperviscosity syndrome. The highest incidence of WM occurs among older individuals, with a median age at diagnosis in the 60s (2). The etiology of WM is unknown. No obvious causative or predisposing factor has been identified. Both somatic mutations and chromosomal abnormalities have been identified in the malignant B cells of WM.

A recurrent mutation of the MYD88 gene (MYD88 L265P) is present in the most majority of patients with WM (3, 4). There is no standard therapy for the treatment of WM.

While various drugs and combinations have demonstrated clinical benefit in prospective trials, these have not been compared directly in randomized trials. For patients who are symptomatic therapeutic strategies for WM should be based on individual patient and disease characteristics, including the age, suitability as a candidate for autologous stem cell transplantation, hyperviscosity, and comorbidities.

Case report

A 77-year-old woman admitted to the hospital with the symptoms of fatigue, anorexia, fever, and blurred vision. She could not walk for 2 weeks because of weakness and neuropathy. She had white blood cell elevation and splenomegaly (20 cm). A large number of plasmablast-like cells were seen in the peripheral blood smear (figure 1). Laboratory studies revealed a white blood cell count of 54.8 × 103 /µl, hemoglobin level of 8.2 g/dl and platelet count was 120 × 103/µl. Serum creatinine was 0.9 mg/dl and calcium was 9 mg/dl.

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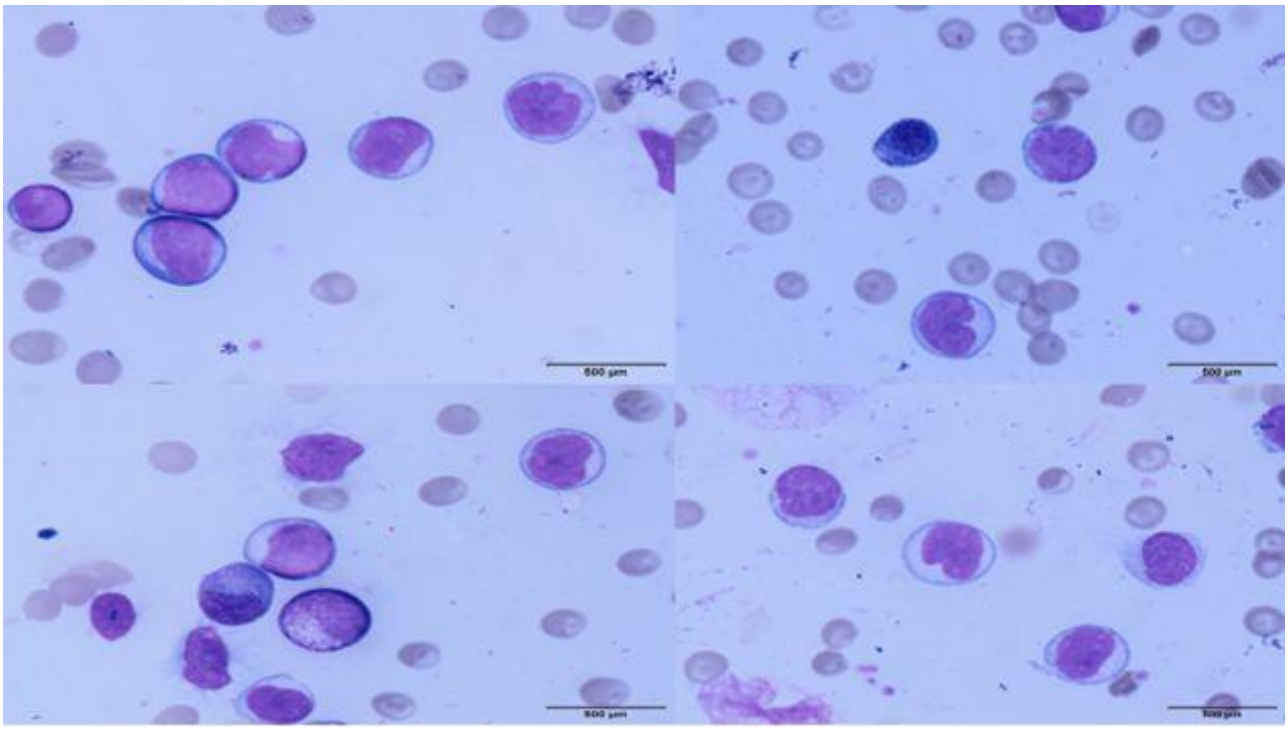

Figure 1. Peripheral blood smear was suggestive of normocytic anemia and numerous plasmablasts like cells (when evaluating peripheral smear at the time of admission hospital)

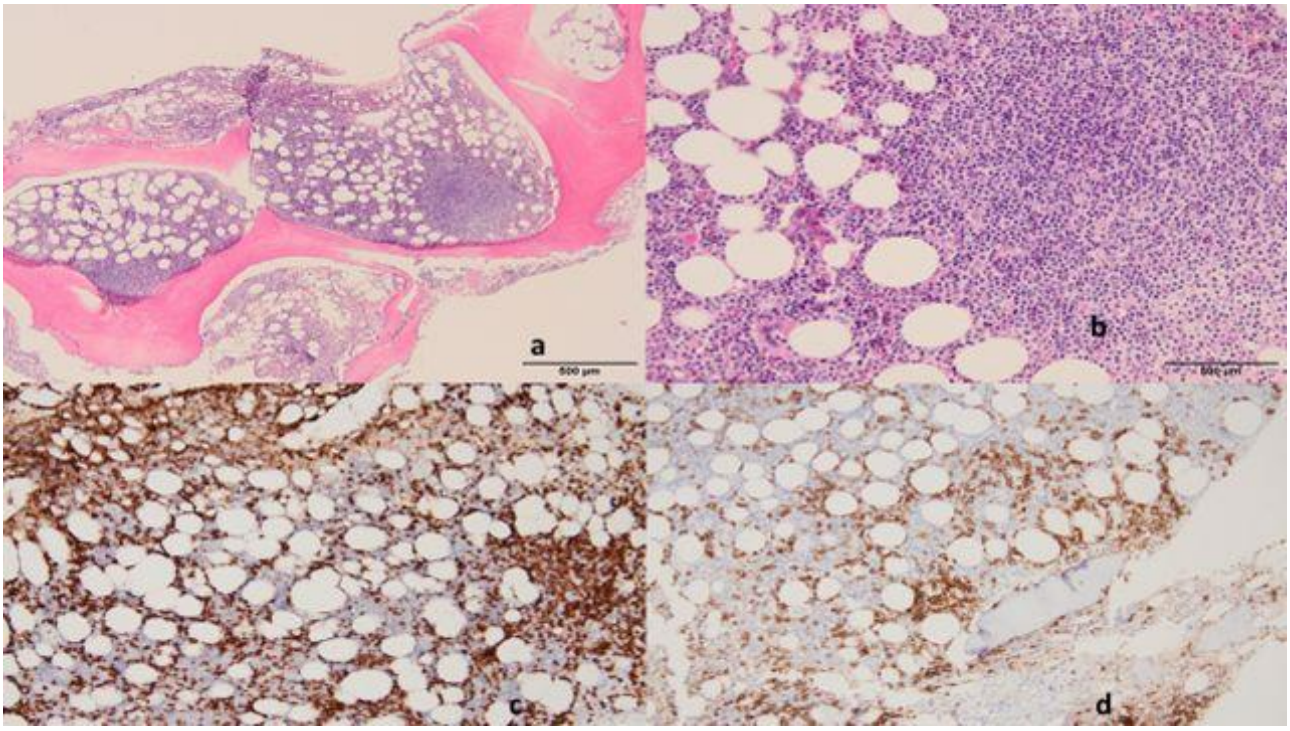

Figure 2. Marrow was infiltrated by lymphoplasmacytoid cells on bone marrow biopsy. Her bone marrow biopsy showed a massive proliferation of small lymphocytes (of all nucleated cells), admixed with plasmacytoid lymphocytes and plasma cells. (Figure 2a and 2b) Small lymphocytes were highlighted with CD20 (Figure 2c), and plasma cells with CD138 stains (Figure 2d.)

The serum protein electrophoresis revealed a homogeneous band in the gamma globulin area, which on immunoelectrohoretic studies corresponding to an IgM-kappa immunoglobulin. Plasma immunoglobulin concentrations: IgG 457 mg/dl (normal range:700-1600), IgA 66 mg/dl (normal range:70-450), IgM 15000 mg/dl (normal range:40-230).

The neoplastic lymphoplasmacytoid cells express CD19, CD20, CD22 and FMC7 in the flow cytometry. CD5, CD10, CD11c, CD56 and CD23 were negative. Chromosomal analysis showed a karyotype of 47, XX+12(40)/46, XX (10).

Axonal polyneuropathic involvement was found in sensory and motor fibers in EMG to assess neuropathy. Papilla edema was observed on ophthalmoscopic examination. Due to hyperviscosity syndrome of patients plasma exchange was performed. Bone marrow examination showed diffuse infiltration by small lymphoid cells. These cells were identified as plasma cells or lymphoplasmacytoid cells.

The diagnosis of WM was established after immunohistochemical analysis of the patient's bone marrow that revealed the presence of a lymphoid/lymphoplasmacytoid like bone marrow infiltrate along with an elevated serum IgM level. In the patient's follow-up rituximab, bortezomib and dexamethasone were administered by 3 courses. A cycle of therapy consisted of bortezomib 1.3 mg/m2 on days 1, 4, 8, 11 subcutanous; dexamethasone 40 mg on days 1, 4, 8, and 11 peroral; and rituximab 375 mg/m2 on day 1 intravenously (5).

The patient responded both clinically and serologically to the chemotherapy. Total IgM in the serum decreased from11500 mg/dl to 5210 mg/dl. Her white blood cell was decreased 54.8 × 103/µl to 5.8 × 103/µl. With the proper therapy she could walk, her neuropathy was decreased. The patient's vision improved and papilla edema disappeared on ophthalmoscopic examination. The patient received 6 courses of chemotherapy.

Discussion

Dao et al. presented four cases of sarcomatous or leukemic types of WM. They are characterized by tumoral and compressive localizations of lymph node or spleen, or by a hyper-leukocytosis with many circulating abnormal cells. These cells are different from the lympho-plasma cells regularly observed in WM, and can be assimilated to malignant immunoblasts (6). In this case, the cells seen in peripheral smear were different lympho-plasma cells. A large number of plasmablast-like cells were seen in peripheral smear. The reported case here described WM presenting with hyperleukocytosis and its response to chemotherapy. This case was presented as plasma cell leukemia at the time of admission to the hospital. Because a large number of plasmablast-like cells were seen in the peripheral blood smear.

The diagnosis of WM was made based on the presence of inter- trabecular bone marrow infiltration by atypical lymphocytes showing plasma cell and plasmacytoid differentiation along with elevated serum IgM. With chemotherapy, the white cell was decreased from 54.8 × 103 /µl to 5.8 × 103 /µl and patient's complaints regressed.

Conclusion

This is the case report of a patient with Waldenstrom macroglobulinemia presenting like plasma cell leukemia in the first admission adding to the spectrum of clinical presentations seen in this disease. This adds to the wide variety of clinical presentations of Waldenstrom macroglobulinemia.

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Author's Contributions: RÇ, EA, İCH; Planning the research, patient examination and treatment: **EAS**; Blood cell analysis and imaging: **RÇ;** preparing the article and revisions

Ethical issues: All Authors declare, Originality and ethical approval of research. Responsibilities of research, responsibilities against local ethics commission are under the Authors responsibilities.

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The problems of patients with stoma and its effects on daily living activities

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Abstract

Objective: This study was conducted to determine the problems of individuals with stoma and its effects on the daily life activities

Material and Methods: The study was conducted individuals with at least one month's stoma, agreed to participate in the study, over the age of 18 years, between January 1 and June 1, 2016 in individuals attending a General Surgery Clinic of a University. In the study, used survey form was prepared by the researchers in the direction of the literature.

Results: The mean age of patients was 56.67±11.07 and 70.4% were male. When social lives of the individuals were examined after stoma, it was found that 22.2% of them prevented the daily activities of the stoma, 14.8% of them had changed in their family, friends and neighbors relations, The 7.42% were embarrassed due to stoma, The 27.8% of them went to liquid beverage restriction, The 16.7% have decreased appetite due to smell. No statistically significant difference was found between the sexes, pre-stoma education status, stoma type and stoma duration according to daily life activities, nutritional status, mental status, dressing and social life (p> 0,005).

Conclusion: It has been determined that stoma influences social life together with mental problems at individuals and restricts their daily activities.

Keywords: Stoma, Nursing, Quality of Life

Introduction

Stoma is the anastomosis of gastrointestinal tract organs (1,2). The term stoma means mouth in Greek language (1, 2, 3). Stoma are called as permanent and temporary stoma according to the anastomosis time while they are called as colostomy, ileostomy, urostomy according to the organ which they are anastomosed (3). The most common causes of anostomosis are bowel cancers and inflammatory bowel diseases (2, 4).

Stoma affect the patients' quality of life although they help them to continue their lives (5, 6, 7). There are some physiological problems in persons having stomata such as leakage, infection, odor, fatigue, deterioration of sleep pattern, pain, retraction in the stoma area (8, 9). In the period after stoma surgery, bleeding, fistula, bowel obstruction, prolapsus may be seen. In the study performed of Özaydın et al, it was determined that the most common complications in patients with stoma were prolapsus, odor and skin irritations (10).

The physiological changes caused by the anostomosis may psychologically affect the individuals.

The body image and self-confidence of the patients are as a result of stoma. However, individuals with stoma experience some psychological problems such as anxiety, a decrease in self-esteem, a desire to stay alone, introversion and social withdrawal may occur (3, 11).

Moreover, lifestyle changes of patient such as resignment, the reduction of working hours and getting away from friends may observe (1).

This study was carried out to determine the problems of patients with stoma and its effects on daily living activities.

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Material and Methods

This descriptive study was carried out in the general surgery clinic of an university hospital in İzmir between the 1 January 2016 and 1 June 2016. The sample of the study consisted of 54 patients who were in the general surgery clinic at the time of the study, who were over 18 years of age, who had a stoma duration of at least one month.

A personal identification form was used by the researchers for data collection. This form was prepared by the researchers by searching the literature on the subject in order to collect data about the sociodemographic and daily activities of the patients. The form consisted of a total of 50 questions while 4 of them were open-ended. 12 of the questions in the form were related to sociodemographic data while 38 of the questions in the form were related to daily life activities. The data were collected by face to face interview method. Each interview lasted about 20 minutes.

Research data were analyzed via the SPSS (Statistical Package for Social Sciences) program for Windows 25.0 SPSS (Inc., Chicago, IL, USA). Descriptive statistics were used to evaluate the research data.

Ethics committee approval was obtained from Ege University Nursing Faculty Scientific Ethics Committee (Date:07.12.2015, No: 27344949 / 145). The aim and procedures of the study were explained to the patient with stoma and participants were informed that their participation in the study was voluntarily.

The limitation of this study is that it is a cross-sectional study; therefore, the results are limited in terms of revealing the cause–effect relationship. The results of this study cannot be generalized to all patients with stoma.

Results

The mean age of the participants was 56.67±11.07 years. The mean duration of anastomosis was 7.6±18.20 months while minimum and maximum durations of anastomosis were 1 month and 96 months, respectively. Table 1 shows the sociodemographic characteristics and stoma stories of the individuals (Table 1).

When the social life of patients with stoma was examined, it was found that 53.7% of them had difficulty in performing their religious duties due to stoma; 50% of them had restricted their exercises; 46.3% of them had difficulty in going up stairs; 63.0% of them had sleep problems with the fear of stoma detriment. It was also found that 51.9% of the patients who were included in the study rearranged their feeding hours due to stoma; 27.8% of them had a food / beverage restriction; 55.6% of them had difficulties in bathing; 53.7% of them changed their clothing style; 51.9% of them had difficulties in choosing clothes (Table 2).

When the data about the stoma care of the participated patients were examined, it was found that 38.9% of the patients did their own stoma care; 66.7% of them felt safe during care. During the care, the patients mostly had difficulties related to the placement of stoma adapter in the skin (27.3%), the attachment of the stoma bag to the adapter (27.3%) and skin cleaning (22.7%). The most common problems related to the stoma area were found to be redness (25.9%), leakage (25.9%) and odor (24.1%). It was also found that 24.1% of patients with stoma experienced psychological problems; the most common psychological problems were fear (37.5%), low self-esteem (25%) and the adoption to stoma (20.8%) (Table 2).

In the study, when stoma training status and type of stoma were compared with their problems of stoma care having problems during daily activities and the change in mood, there was no statistically significant relationship between parameters ($p>0.005$) (Table 3).

Additionaly, there was no statistically significant difference between the change in family/friend/neighbor relationships and the participants in terms of stoma duration, the fear of gassing, the statuses of being ashamed because of the stoma, the visibility of stoma in the clothing, the change in the way of dressing, the change in mood and the change in family/friend/neighbor relationships ($p>0.005$) (Table 4).

Table 1: Demographic Characteristics of Patients with Stoma and Their Distribution According to Stoma History

Demographic Characteristics and Stoma History			
Gender	Male	38	70.4
	Female	16	29.6
Marital Status	Married	48	88.9
	Single	6	11.1
Education	Primary Education	30	55.6
	High School	18	33.3
	University	6	11.1
Type of Stoma surgery	Colostomy	38	70.4
	Ileostomy	16	29.6
Surgical Type	Elective	34	63.0
	Emergency	20	27.0
Type of Stoma	Temporary	32	59.3
	Permanent	22	40.7
Total		54	100

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Table 2: The effect of daily living activity on patients with stoma

Daily Living Activities		n	%
Social Life*	Difficulty in performing their religious duties	29	53.7
	Restricted their exercises	27	50.0
	Difficulty in going up stairs	25	46.3
Fooding*	Feeding Time Arrangements	28	51.9
	Rearranged their feeding hours	27	50.0
	Food / beverage restriction	15	27.8
	Change of appetite	12	16.7
Hygiene*	Difficulties in bathing	30	55.6
	Changed their clothing style	29	53.7
	Difficulties in choosing clothes	28	51.9
Problems of Stoma Care*	Placement of stoma adapter in the skin	6	27.3
	Attachment of the stoma bag to the adapter	6	27.3
	Skin cleaning	5	22.7
	Apply Stoma Powder	4	18.2
	Change of stoma bag	4	18.2
	Remove the stoma adepter	3	13.6
	Apply paste surrounding the stoma	3	13.6
	Measuring of stoma adepter	2	9.1
	Cutting of stoma adepter	2	9.1
Stoma Problems*	Diarrhea	20	37.0
	Leakage	14	25.9
	Redness	14	25.9
	Odor	13	24.1
	Gas	12	22.2
	Bleeding	10	18.5
	Disruption of the blood supply stoma	7	13.0
	Constipation	5	9.3
	Hernia	5	9.3
	Prolapsus	2	3.7
	İnfection	1	1.9
Psychological Problems*	Fear	9	37.5
	Low self-esteem	6	25.0
	Adoption to stoma	5	20.8
	Getting away from friends/family	4	14.8

* The respondents were selected more than one answer

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Table 3: The effect of stoma training status and stoma types on the stoma care, daily living activities and physiological factor s

		Stoma Training Status				Type of Stoma			
		Yes n(%)	No n(%)	X^2	p	Temporary n(%)	Permanent n(%)	X^2	p
Problems of Stoma Care Stoma	Yes	19(45.2)	23(54.8)	1.658	0.320	6(27.3)	16(72.7)	2.854	0.098
	No	3(25.0)	9(75.0)			16(50.0)	16(50.0)		
Problems of Daily Liiving Activities	Yes	12(48.0)	13(52.0)	0.075	0.500	11(50.0)	11(50.0)	0.001	0.609
	No	15(51.7)	14(48.3)			16(50.0)	16(50.0)		
Psychological Problems	Yes	13(52.0)	12(48.0)	1.078	0.411	9(40.9)	13(59.1)	0.118	0.783
	No	11(3.9)	18(62.1)			15(46.9)	17(53.1)		

Table 4: The change of family/friend/neighbor relationships on patients with stoma

		The change in family/friend/neighbor relationships			
		Yes n (%)	No n (%)	X^2	p
Types of Stoma	Temporary	12(41.4)	17(58.6)	1.153	0.283
	Permanent	15(56.0)	11(44.0)		
Fear of Gas	Yes	15(57.7)	11(42.3)	0.687	0.407
	No	13(46.4)	15(53.6)		
Being ashamed because of the stoma	Yes	14(53.8)	12(46.2)	1.153	0.283
	No	11(39.3)	17(60.7)		
The appearance of the stoma from clothing	Yes	15(57.7)	11(42.3)	0.321	0.571
	No	14(50.0)	14(50.0)		
Changed their clothing style	Yes	15(57.7)	11(42.3)	2.639	0.104
	No	10(35.7)	18(64.3)		
Experienced psychological problems	Yes	12(46.2)	14(53.8)	0.059	0.808
	No	12(42.9)	16(57.1)		

Discussion

Colostomy is a common treatment modality for the management of gastrointestinal problems but it affects the daily living activities of individuals (2, 3, 11, 12). Social lives of patients with stoma can be affected by the experienced problems such as leakage around the stoma, stoma dressing, hernia formation and edema (13). When the patients' social life after the stoma was examined, 53.7% of the patients were not able to perform their religious duties due to stomata; 50% of them were not able to make exercise due to stomata; 46.3% of them had difficulty during going up stairs; the daily activities of 22.2% of them were disrupted by stoma. In the study of Nasvall et al. (2017), it was determined that the physical activity of the patients was significantly affected after stoma (13). In the literature, it was stated that the activities such as walking and cycling are important for the patients with stoma and stoma do not disrupt social life (14). Therefore, the importance of increasing physical activities should be emphasized to the patients with stoma during discharge training and physical activity should be encouraged by providing emotional support to patients.

The lack of gas control and odor due to stoma causes nutritional changes in individuals. Patients with stoma avoid eating various fruits and vegetables, especially milk and anxiety also causes a decrease in appetite of patients (13, 15). It was determined that 51.9% of the patients rearranged their meal times due to stoma; 27.8% of them had fluid and food restriction; 16.7% of them had a change in their appetite. Similarly, other studies found that individuals had nutritional problems in the early stages of ostomy (7, 8, 12, 15, 16). Nutritional training should be provided to ensure the diet of patients with stoma. Karadağ et al. (2003) recommended that no change in meal times, the addition of snacks, low and frequent feeding for bringing bad smell and gas under control in patients with stoma (17). They also recommended that the stoma bag is removed and the adapter cover is closed for preventing the smell-dependent appetite loss in patients with stoma.

In patients with stoma, It is stated that individuals' choice of clothes and their perception of body is affected depending on changes in stoma, weight and body appearance (7, 8).

In this study, it was found that 53.7% of the patients changed their clothing style after stoma procedure while 51.9% of them had difficulties in choosing clothes. In similar studies, it was similarly found that the patients with stoma had difficulty in choosing clothes; they were depressed and embarrassed (7, 8, 18, 19). The integration of family members in the training, emphasizing the importance of their social support to patients can be effective in ensuring positive body perception in patients.

In patients with stoma, skin problems develop as a result of the placement difficulty of the adapter in the skin and related leakage (2). The participants mostly experienced difficulties in the placement of stoma adapter in the skin (27.3%), attachment of the stoma bag to the adapter (27.3%), skin cleaning (22.7%) during stoma care. The most common problems related to the stoma area were redness (25.9%), leakage (25.9%) and smell (24.1%). In other studies, it was found that the individuals with stoma mostly experienced smell, leakage, pain and hernia problems (2, 12, 16, 19, 20). It is stated that the use of modern stomatal devices in the reduction of stoma related problems, the determination of the stoma place with the patient before the operation and the follow-up of the patient by the stoma care nurse may be effective in reducing the problems (2, 20). In the prevention of problems such as leaking, bleeding and infection, the maintenance of the ideal weight, cutting of the adapter with appropriate diameter, covering stoma area of the remaining gaps with support products, following aseptic rules during care are also effective method (21, 22).

Trying to adapt to a new order brings along emotional challenges. Psychological problems such as changes in body perception, fear, anxiety, deterioration in sexual functions and social withdrawal are frequently experienced due to stoma (1). In the study, it was determined that 37.5% of the patients with stoma experienced fear; 25% of them had lack of self-confidence; 20% of them were not able to adapt to stoma; 14.8% of them experienced deterioration in family relationships. Dabirian et al. (2011) found that the individuals had problems with their family members after ostomy. Identifying the physical and emotional needs of the patients, providing counseling and gaining their independence by patients in a short time can help them to adopt their new lives (12, 23). It is thought that following of patients with stoma by stoma care nurse after discharge and providing expert support for patients with psychological problems can be effective in reducing the problems experienced by patients.

The limitation of this study is that it is a cross-sectional study; therefore, the results are limited in terms of revealing the cause–effect relationship. The results of this study cannot be generalized to all patients with stoma.

Conclusion

As a result of the study, social life of the patients with stoma was affected; results also indicate that their daily life activities such as nutrition, physical activity, personal hygiene were restricted; they experienced difficulties in stoma care and psychological problems. According to the results of the study, it is recommended that trainings should be given to patients to support their daily life activities; patients should be followed-up of after discharge; the problems of patients should be determined and related support should be provided.

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Author's Contributions: EO, TY: Research concept and design; data collecting, analysis and interpretation of data. **EO, TY:** Preparation of article, and Revisions. All authors approved the final version of the manuscript

Ethical issues: All Authors declare, Originality and ethical approval of research. Responsibilities of research, responsibilities against local ethics commission are under the Authors responsibilities.

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