암재활

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OP4-2-4

Comparison of unilateral and bilateral lymphedema in the lower limb after gynecologic cancer surgery

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Introduction

Lymphedema in the lower limb after gynecologic cancer surgery may occur unilaterally or bilaterally, unlike lymphedema that occurs in the upper limb. If the bilateral lymphedema occurs in the lower limb, the quality of life of the patient will deteriorate. Therefore, it is necessary to predict whether lymphedema will occur bilaterally in patients who underwent gynecologic cancer surgery. In this study, we compared the three groups in which lower limb lymphedema occurred after gynecologic cancer surgery.

Method

This study included patients admitted to the Department of Rehabilitation Medicine at O Hospital from 2006 to 2018. Patients with the insufficient medical record were excluded. A total of 110 patients were included in this study and we retrospectively analyzed the patients. Patients with unilateral lymphedema were classified as group A, and patients with bilateral were classified as group B. Patients who were initially unilateral and progressed bilaterally were classified as group C. Group A and B were compared and group A and C were compared. We compared the age, cancer type, stage, BMI, radiation therapy, chemotherapy, genitalia swelling, and lymphangitis in each patient group using crossover analysis and confirm the significance using Pearson's chi-square test and Fisher’s exact test. Multivariate logistic regression analysis was performed to identify associated factors for bilateral lymphedema.

Result

In this study, 71 patients with unilateral lymphedema, 27 patients with bilateral, and 12 patients with initially unilateral and then progressed bilaterally. The mean age was 52.65±11.83. Cervical cancer, ovarian cancer, and endometrial cancer were 72, 24, and 14, respectively. 49 patients received radiation therapy and 82 patients received chemotherapy. There were 59 patients with lymphangitis history and 48 patients with genital swelling(Table 1). Cancer type, stage, and genital swelling were found to be significantly different in the comparison of group A and B. In multivariate logistic regression analysis, cancer stage and genital swelling were associated with bilateral lymphedema(Table 2-3). Radiation therapy and lymphangitis were significantly different in the comparison of group A and C and were associated with bilateral progression in logistic regression analysis(Table 2-3).

Conclusion

In this study, bilateral lymphedema patients were more likely to have higher cancer stage and ovarian cancer than unilateral patients. It is thought that ovarian cancer patients have debulking surgery even if the cancer stage is high. Most patients in group C had radiation therapy and infection history, suggesting that these two factors affect bilateral progression. Patients with unilateral lymphedema who received radiation therapy should note that lymphedema can worse bilaterally. In addition, to prevent lymphedema progressing to bilateral, infection prevention methods should be taught to patients with unilateral lymphedema.

Table 1. Patient characteristics

Characteristics	N
Age(yr)	52.65±11.83
Location of lymphedema	
Group A	71
Group B	27
Group C	12
Type of cancer, N (%)	
Cervical cancer	72 (65.5)
Ovarian cancer	24 (21.8)
Endometrial cancer	14 (12.7)
Cancer stage	
Stage Ⅰ	60
Stage Ⅱ	24
Stage Ⅲ	15
Stage Ⅳ	11
BMI (kg/m2)	24.11±3.62
Radiation therapy, N	
Yes	49
No	51
Chemotherapy, N	
Yes	82
No	28
Lymphangitis, N	
Yes	59
No	51
Genital swelling,N	
Yes	48
No	62

Values are mean ± standard deviation or number.

Table 2. Univariate analysis of group A and B, group A and C

Characteristics	Group A	Group B	P value	Group A	Group C	P value
Age			0.806			0.811
≥55 years	27	11		27	5	
<55 years	44	16		44	7	
Type of cancer, N (%)			*0.010			0.599
Cervical cancer	49 (69.0)	13 (48.1)		49 (69.0)	10 (83.3)	
Ovarian cancer	11 (15.5)	12 (44.4)		11 (15.5)	1 (8.3)	
Endometrial cancer	11 (15.5)	2 (7.4)		11 (15.5)	1 (8.3)	
Cancer stage			**0.000			0.913
Stage Ⅰ	47	6		47	7	
Stage Ⅱ	15	6		15	3	
Stage Ⅲ	6	8		6	1	
Stage Ⅳ	3	7		3	1	
BMI (kg/m2)			0.707			0.435
≥23	45	16		45	9	
<23	26	11		26	3	
Radiation therapy, N			0.906			**0.005
Yes	28	11		28	10	
No	43	16		43	2	
Chemotherapy, N			0.058			0.793
Yes	50	24		50	8	
No	21	3		21	4	
Lymphangitis, N			0.580			**0.008
Yes	36	12		36	11	
No	35	15		35	1	
Genital swelling,N			**0.002			0.084
Yes	23	18		23	7	
No	48	9		48	5	

*p<0.05, **p<0.01

Table 3. Multivariate analysis of group A and B, group A and C

Characteristics(Group A and B)	Adjusted OR	95 % CI	P value
Age ≥ 55 years	1.064	0.334-3.391	0.916
Type of cancer	0.664	0.250-1.763	0.411
Cancer stage	3.044	1.594-5.811	**0.001
BMI (kg/m2) ≥23	1.071	0.342-3.351	0.906
Radiation therapy	1.553	0.465-5.182	0.474
Chemotherapy	1.064	0.228-4.962	0.938
Lymphangitis	0.652	0.216-1.969	0.448
Genital swelling	3.897	1.237-12.276	*0.020
Characteristics(Group A and C)	Adjusted OR	95 % CI	P value
Age ≥ 55 years	1.299	0.267-6.329	0.746
Type of cancer	0.653	0.181-2.363	0.516
Cancer stage	2.141	0.759-6.039	0.150
BMI (kg/m2) ≥23	4.307	0.599-30.999	0.147
Radiation therapy	16.593	1.961-140.376	**0.010
Chemotherapy	0.158	0.018-1.380	0.095
Lymphangitis	15.007	1.285-175.264	*0.031
Genital swelling	3.537	0.733-17.067	0.116

OR: Odds ratio, CI: Confidence interval

*p<0.05, **p<0.01