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Benefits of microvascular decompression
on social anxiety disorder and
health-related quality of life in patients
with hemifacial spasm

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Directed by Professor Jin Woo Chang

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Medicine, the Graduate School of Yonsei University
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ABSTRACT

Benefits of microvascular decompression on social anxiety disorder and health-related quality of life in patients with hemifacial spasm

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BACKGROUND

Hemifacial spasm (HFS), an involuntary movement disorder characterized by unilateral spasms of the muscles innervated by the facial nerve, is likely to cause social anxiety disorder due to its significant facial disfigurement and may have a significant influence on a patient's health-related quality of life (HRQoL). The goal of this study was to investigate the influence of microvascular decompression (MVD) on the severity of social anxiety symptoms and HRQoL in patients with HFS.

METHODS

Patients who underwent MVD from January to May 2015 were included in this study. Demographic data were collected before surgery. Clinical data, including the standardized measures of anxiety and depression (Hospital Anxiety Depression Scale, HADS), social anxiety (Liebowitz Social Anxiety Scale, LSAS), and the severity of HFS were assessed before surgery, 6 months after surgery. HRQoL data were collected before surgery and 6 months after surgery using the Korean version of the short form 36 (SF-36).

RESULTS

Six patients (21.4%) scored 60 or greater on the preoperative LSAS and were considered to have generalized social anxiety disorder (high-LSAS group). The duration of symptom was significantly higher in the high-LSAS group than in the low-LSAS group (7.8 ± 2.2 vs. 4.1 ± 2.6 ; $p = 0.011$). The high-LSAS group was more likely to have psychological comorbidities and had a more impaired quality of life than the low-LSAS group at preoperative evaluation. Six months after MVD, a significant improvement, compared to preoperative scores, was observed for the total LSAS score ($p=0.007$) and anxiety subscale score of HADS ($p=0.012$) in the high-LSAS group. Other significant improvements were also observed in role-emotional ($p=0.039$) and mental component summary ($p=0.024$) of the SF-36 in the high-LSAS group compared to the low-LSAS group.

CONCLUSION

This study shows that HFS patients seem to gain benefits from MVD not only for their facial disfigurement but also for social anxiety symptoms that may be associated with mental health improvements in their quality of life.

Key words: Health-related quality of life, Hemifacial spasm, Microvascular decompression, Social anxiety disorder, Leibowitz social anxiety scale.

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I. INTRODUCTION

Hemifacial spasm (HFS) is characterized by intermittent, involuntary tonic and clonic contractions of the muscles innervated by the ipsilateral facial nerve, with the contractions being asymmetrical and asynchronous. The symptoms typically occur in the orbicularis oculi muscle and then usually progress in frequency and severity and spread downward to the ipsilateral facial muscles including the platysma¹. The most common cause of HFS is compression of the facial nerve in its root exit zone by an aberrant arterial or venous loop². The disorder occurs in both genders, although it more frequently affects middle-aged or elderly women, and the condition appears to be more common in some Asian populations³⁻⁶. HFS is not a life threatening condition; however, patients with chronic facial disfigurement experience serious visual and verbal disability, social embarrassment, significant distress in social interaction, and may also develop secondary social anxiety disorders related to HFS. Previous research revealed that HFS patients have higher scores on the total Leibowitz Social Anxiety Scale (LSAS), which uses a questionnaire

to evaluate the social anxiety disorder, than control groups⁷.

Social anxiety disorder, also called social phobia, is the most common anxiety disorder. It usually has an early onset and has serious effects on social interactions and quality of life^{8,9}. It can be defined as the fear of being ashamed or humiliated in various social settings, such as speaking in public and attending with a group of unfamiliar people. It is well-known that social anxiety, which is quite common as a distinct entity, may also develop secondary to various disfiguring or disabling physical conditions, such as essential tremor, spasmodic torticollis, stuttering, acne vulgaris, and strabismus¹⁰⁻¹⁵.

Microvascular decompression (MVD) has been described as an effective and safe procedure in HFS¹⁶. Previous studies concerning the effect of surgical intervention on the health related quality of life (HRQoL) of HFS patients strongly support this procedure^{17,18}. However, to our knowledge, there are no data to determine the impact of MVD on social anxiety symptoms using standardized questionnaires that relate psychological outcomes in HFS patients. Therefore, the purposes of this study were to assess the influence of MVD on the level of social anxiety symptoms and HRQoL in patients with HFS. Other psychiatric comorbidities (i.e., generalized anxiety and depressive mood) were also evaluated.

II. MATERIALS AND METHODS

In this prospective study with 6 months of follow-up, 30 consecutive patients (10 males and 20 females; mean age: 51.6±9.0 years; age

range 34–69 years) who underwent MVD performed by a senior neurosurgeon (J.W.C.) at Severance Hospital of Yonsei University, were enrolled from January to October 2015. 28 of the 30 patients completed the 6 months of follow-up for this study; the other two patients were excluded due to their refusal to respond to the final questionnaire. Written informed consent was received from all participants after they obtained information about the study from the investigator (i.e., full explanation of the nature, purpose, and duration of the study and the right to withdraw from the study at any time, without affecting the standard of care received). Patients were included in the study if they provided informed consent and met no exclusion criteria, which consisted of concomitant movement disorders, heart failure, and pulmonary, renal, or hepatic insufficiency or malignancy. Patients were also excluded if they had cognitive impairments and could not therefore reliably answer the questions included in the quality of life questionnaire and the self-reported psychosocial assessment. The study was performed under a protocol approved by the Severance Hospital Institutional Review Board (4-2014-1090).

Demographic data (i.e., age, gender, duration of symptoms, severity score of HFS) were collected before surgery. Clinical data, including the LSAS and Hospital Anxiety Depression Scale (HADS) values, were assessed before surgery, and at 6 months after surgery. HRQoL data were collected preoperatively and postoperatively (at 6 months) using the Korean version of the Short Form 36 (SF-36). The hearing function of all patients was evaluated

before the MVD via pure tone audiometry (PTA). After the MVD, potential adverse effects and any changes in the patient`s neurological state including hearing function and physical state were assessed at visit by a neurosurgeon via clinical examination. Postoperative computerized tomography (CT) was immediately conducted to check the severe complications including intracranial hemorrhage on all patients.

The severity of HFS in each patient was consecutively determined based on the Hemifacial Spasm Scale (0=no spasm; 1=mild barely noticeable; 2=mild without, functional impairment; 3=moderate, functional impairment; 4=severe incapacitating) by a single neurosurgeon (Y.G.K.) before surgery, and at 6 months after surgery. This scale previously has been used to assess HFS or facial dystonia¹⁹.

In this study, social anxiety disorder was assessed via LSAS. The LSAS is a questionnaire developed by Liebowitz to assess the severity of fear and avoidance in social interactions (e.g., “going to party”) and performance situations (e.g., “speaking up at meeting”). It consists of 11 items related to social interaction and 13 items related to public performance. Fear or anxiety is rated on a Likert-type scale ranging from 0 (none) to 3 (severe), while avoidance is rated on a scale ranging from 0 (never) to 3 (usually; 68%–100%). A total score is calculated by summing all fear and avoidance ratings, and elevated LSAS scores reflect elevated levels of social anxiety. A self-reported Korean version of the LSAS was used in this study²⁰. The LSAS has two cut-off scores

of 30 and 60 for non-generalized and generalized social anxiety disorder, respectively, as recently reported by Mennin et al.²¹. Therefore, in this study, patients with total LSAS scores of 60 or higher were considered to have clinically significant symptoms of social anxiety.

Anxiety and depression were assessed using the HADS²². This 14-item scale provides a sub-score for symptoms of anxiety and depression separately, each scored from 0 to 21, with high scores representing more psychological symptoms. This scale has demonstrated good psychometric properties, and is effective in assessing anxiety and depressive symptoms in patients with different medical diseases and in the general population²³. Each score of 11 or more on either the depression or the anxiety subscales indicates “probable case” of depression or anxiety, with scores between 8 and 10 indicating a “possible case.”

The SF-36 is a multipurpose, generic health-status questionnaire that has been applied in studies of more than 130 diseases and conditions²⁴ and has eight dimensions that can be summated into two components: the physical component summary and mental component summary. Three dimensions (physical functioning, role-functioning, bodily pain) correlate most highly with the physical component summary and contribute most to the scoring of the physical component summary measure. The mental component correlates most highly with mental health, role-emotional, and social functioning, which contributes most to the scoring of the mental component summary measure.

Vitality, general health, and social role functionality are noteworthy correlations with both components²⁴.

Quantitative variables are expressed as mean and standard deviation (SD), and qualitative variables as frequencies. The Kolmogorov-Smirnov test was performed to test the normal distribution of the variables. All variables showed normal distributions except LSAS. Intergroup comparisons were performed using the Mann-Whitney U test and Student's t-test for continuous variables and Fisher's exact test for dichotomous variables. All data analyses were performed using SPSS version 20.0 for Windows (SPSS, Chicago, IL, US). The significance level was set at $p < 0.05$.

III. RESULTS

Of the 30 eligible patients, only 28 (93.3%) completed all follow-up visits and were thus included in the study. The mean LSAS score was 41.5 ± 26.5 (min-max: 2-125) and the prevalence of clinically significant social anxiety symptoms in this study was 21.4% ($n=6$), based on a baseline LSAS cutoff score of ≥ 60 . The mean LSAS score of high-LSAS group was 77.3 ± 23.8 (min-max: 62-125) and 31.2 ± 16.8 (min-max: 2-57) in low-LSAS group. Age, gender, disease severity, and education level did not significantly differ between the high-LSAS and low-LSAS groups. However, the duration of symptoms was significantly higher in the high-LSAS group than in the low-LSAS group (7.8 ± 2.2 vs. 4.1 ± 2.6 , $p=0.011$). Using HADS cutoff scores to identify "probable" patients with depression and general anxiety, the rates of comorbidities in the

high-LSAS group for depression and general anxiety were 33.3% and 50.0%), respectively (Table 1).

Table 1. Sociodemographics and clinical characteristics of subjects according to LSAS score.

	Total (n=28)	High LSAS ^a (n=6)	Low LSAS(n=22)	<i>p</i> -value
Age	52.3±8.8	49.8±6.0	53.0±9.4	0.606 ^d
Gender(female)	18/28(64.3%)	4/6(66.7%)	14/22(63.6%)	
Duration of symptoms (years)	4.9±2.9	7.8±2.2	4.1±2.6	0.011 ^d
Severity of symptoms	2.4±0.6	2.3±0.8	2.4±0.5	0.530 ^d
Education(years)	12.9±2.9	11.7±2.6	13.3±2.9	0.141 ^d
Comorbidity disorders				
General anxiety(HADS-A ^b ≥11)	3/28(10.7%)	3/6(50.0%)	0/22(0.0%)	0.060 ^e
Depression(HADS-D ^c ≥11)	3/28(10.7%)	2/6(33.3%)	1/22(4.5%)	0.107

Quantitative variables are expressed as mean and standard deviation.

^aLiebowitz Social Anxiety Scale

^bHospital Anxiety Depression Scale: anxiety subscale

^cHospital Anxiety Depression Scale: depression subscale

^dStatistical testing was performed using Student's t-test and the Mann-Whitney U test

^eStatistical testing was performed using Fisher's exact test

The mean anxiety subscore of HADS was 11.3 ± 4.1 (min-max: 7-19) in high-LSAS group and 4.5 ± 2.7 (min-max: 0-8) respectively in low-LSAS group. The mean depression subscore was 9.8 ± 3.5 (min-max: 6-15) in high-LSAS group and 5.1 ± 2.8 (min-max: 0-13) in low-LSAS group. Three patients of the high-LSAS group had both generalized anxiety and depression, two patients had a generalized anxiety, only one patient had a depressive mood. However, all patients of low-LSAS group had not any psychiatric comorbidities except one patient with depressive mood (HAD-depression: 13). The results of the self-reported psychological assessment that compared the high-LSAS group with the low-LSAS group during 6 months of follow-up are presented in Table 2. As shown in Table 2, the high-LSAS group had significantly higher scores in all subscales of HADS and LSAS than the low-LSAS group at baseline evaluation. The improvements observed after MVD were simultaneous in both groups in terms of all scores of study scales. However, a comparison of these two groups in terms of differences observed in their scales at 6 months after MVD indicated that the improvements of the high-LSAS group in the both assessments were significantly higher than those of the low-LSAS group except for the HADS depression subscore.

Table 2. Self-reported psychosocial assessments comparing the high-LSAS group with the low-LSAS group during 6 months of follow-up.

	High LSAS ^a (n=6)			Low LSAS (n=22)			<i>p</i> -value ^d	<i>p</i> -value ^e
	Baseline	6 Months	Difference ^c Median[(min)-(max)]	Baseline	6 Months	Difference Median[(min)-(max)]		
HADS ^b								
Anxiety	11.3±4.1	4.8±2.3	3.5[(3.00)-(16.00)]	4.5±2.4	3.2±2.7	1.5[(-7.00)-(8.00)]	<0.001	0.012
Depression	9.8±3.5	5.5±3.0	4.0[(-1.00)-(1.00)]	5.1±2.8	3.2±2.5	2.0[(-3.00)-(13.00)]	<0.001	0.283
LSAS	77.3±23.8	24.2±21.1	53.0[(13.00)-(106.00)]	31.7±16.8	18.3±14.2	12.0[(-18.00)-(43.00)]	<0.001	0.007

Quantitative variables are expressed as mean and standard deviation.

^aLiebowitz Social Anxiety Scale

^bHospital Anxiety Depression Scale

^cDifference in scales: Baseline–6 months after MVD

^dHigh-LSAS group vs. Low-LSAS group at Baseline(Statistical testing was performed using the Mann-Whitney U test)

^eHigh-LSAS group vs. Low-LSAS group at Difference(Statistical testing was performed using the Mann-Whitney U test)

Mean scores from the dimensions of the SF-36, together with standard deviations, for the two groups during 6 months of follow-up are also listed in Table 3. The patients in the high-LSAS group showed significantly greater impairment in the role-physical, vitality, role-emotional, and mental health dimensions and the mental component summary of the SF-36 at baseline. After 6 months of follow-up, improvements in HRQoL were observed in both groups. However, changes in SF-36 scores from baseline to 6 months were higher in the high-LSAS group than in the low-LSAS group; particularly, role-emotional and mental component summary were significantly higher (Table 3).

Table 3. Self-reported HRQoL comparing the high-LSAS group with the low-LSAS group during 6 months of follow-up.

	High LSAS ^a (n=6)			Low LSAS (n=22)			<i>p</i> -value ^c	<i>p</i> -value ^d
	Baseline	6 Months	Difference ^b Median[(min)-(max)]	Baseline	6 Months	Difference Median[(min)-(max)]		
Physical Functioning								0.682
Role-Physical	48.2±4.1	49.3±7.8	-1.35[(-10.50)-(6.30)]	50.8±5.7	51.4±7.7	0[(-16.80)-(12.60)]	0.157	0.088
Bodily Pain	43.8±9.4	50.0±6.3	-7.4[(-14.70)-(4.90)]	51.5±8.5	53.4±5.0	0[(-26.90)-(7.30)]	0.024	0.259
General Health	49.9±8.0	54.7±9.0	-2.35[(-21.50)-(2.30)]	51.9±11.5	54.0±10.3	0[(-32.60)-(17.70)]	0.395	0.427
Vitality	38.3±7.1	44.3±8.0	-3.65[(-14.90)-(1.00)]	46.4±10.7	48.2±8.8	-1.15[(-31.90)-(21.50)]	0.059	0.157
Social Functioning	37.5±8.1	45.8±7.9	-6.25[(-28.10)-(3.20)]	50.2±10.8	50.9±10.5	-0.5[(-40.60)-(22.00)]	0.012	0.643
Role-Emotional	40.5±10.9	50.0±6.6	-8.15[(-27.30)-(5.50)]	48.4±8.7	53.4±5.7	-0.3[(-21.80)-(10.90)]	0.100	0.039
Mental Health	36.4±13.5	52.0±4.9	-13.6[(-35.0)-(0.00)]	48.1±11.4	52.8±7.2	0[(-38.90)-(15.50)]	0.033	0.112
Physical Component	35.0±6.8	44.8±10.0	-8.45[(-22.50)-(0.00)]	49.2±10.0	52.4±9.5	-2.5[(-36.60)-(22.50)]	0.005	0.427
Summary	50.4±5.9	50.5±9.4	2.8[(-12.30)-(5.30)]	51.6±6.3	51.7±7.5	0[(-16.90)-(11.80)]	0.566	0.024
Mental Component	32.4±9.4	47.1±9.6	-13.1[(-39.0)-(-0.40)]	48.2±9.5	51.9±9.1	-2.95[(-36.00)-(12.40)]	0.003	
Summary								

Quantitative variables are expressed as mean and standard deviation.

^aLiebowitz Social Anxiety Scale

^b Difference in scales: Baseline–6 months after microvascular decompression

^c High-LSAS group vs. Low-LSAS group at baseline (Statistical testing was performed using the Mann-Whitney U test)

^d High-LSAS group vs. Low-LSAS group at difference in scale (Statistical testing was performed using the Mann-Whitney U test)

In all 28 patients, symptoms typically started with intermittent slight twitches in the periorbital muscles. The symptoms then increased in frequency and severity, and spread downward to other muscles of the face innervated by the facial nerves. One male patient underwent MVD due to recurrent spasms. Of these 28 patients, 25 (89.3%) experienced complete resolution of symptoms, and two patients recognized great improvement yet continued to experience slight spasms (Grade 1) at 6 months after MVD. Only one patient complained of remnant spasms (Grade 2) at the last follow-up visit. Each individual scores of these patients were summarized in Table 4 and compared with the complete resolution patients, the differences were not statistically significant (Table 5).

In this present study, minor complications were noted in four of 28 patients (13.3%) after MVD; three patients had transient facial weakness, which spontaneously resolved within 1 month, and one patient had cerebrospinal fluid rhinorrhea, which recovered spontaneously after absolute bed rest for 1 week. Hearing function in all patients was well preserved, and there were no cases of permanent neurological deficits or intracranial hemorrhage.

Table 4. Individual scores of the incomplete resolution patients

	Patient No 2. ;Grade 2 ^c		Patient No 13. ;Grade 1		Patient No 27. ;Grade 1	
	Baseline/ 6 months	Difference ^d	Baseline/ 6 Months	Difference	Baseline/ 6 Months	Difference
HADS ^a						
Anxiety	11/11	0	0/0	0	1/3	-2
Depression	15/14	1	2/0	2	0/1	-1
LSAS ^b	68/29	39	26/13	13	2/0	2
Physical Functioning	52.8/57.0	-4.2	57/54.9	2.1	50.7/50.7	0.0
Role-Physical	47.1/56.9	-9.8	56.9/56.9	0.0	54.4/56.9	-2.5
Bodily Pain	51.1/62.1	-11.0	55.4/62.1	-6.7	51.1/51.1	0.0
General Health	43.4/43.0	0.4	62.5/61.5	1.0	50.6/30.5	20.1
Vitality	39.6/42.7	-3.1	61.5/70.8	-9.3	61.5/39.5	22.0
Social Functioning	45.9/40.5	5.4	56.8/56.8	0.0	45.9/56.8	-10.9
Role-Emotional	40.3/55.9	-15.6	55.9/55.9	0.0	52.0/55.9	-3.9
Mental Health	24.7/30.3	-5.6	58.5/64.1	-5.6	55.6/33.1	22.5
Physical Component Summary	56.1/60.6	-4.5	57.5/57.5	0.0	51.1/50.5	0.6
Mental Component Summary	29.7/35.2	-5.5	58.0/62.8	-4.8	54.4/42.9	11.5

^aHospital Anxiety Depression Scale

^bLiebowitz Social Anxiety Scale

^cseverity at 6 months after microvascular decompression

^dDifference in scales:Baseline–6 months after MVD

Table 5. Self-reported psychosocial assessments and HRQoL comparing the incomplete resolution patients with the complete resolution patients during 6 months of follow-up

	Incomplete resolution patients(n=3)			Complete resolution patients(n=25)			<i>p</i> -value ^d
	Baseline	6 Months	Difference ^c Median[(min)-(max)]	Baseline	6 Months	Difference Median[(min)-(max)]	
HADS ^a							
Anxiety	4.3±5.8	3.7±4.0	0.0[(-2.0)-(3.0)]	6.2±3.7	3.6±2.6	3.0[(-7.0)-(16.0)]	0.280
Depression	6.0±7.8	3.3±4.9	2.0[(-1.0)-(6.0)]	6.2±2.9	3.7±2.5	2.0[(-3.0)-(13.0)]	0.944
LSAS ^b	32.0±33.4	19.7±23.7	13.0[(2.0)-(22.0)]	42.6±25.8	19.5±15.1	16.0[(-18.0)-(106.0)]	0.673
Physical Functioning	53.5±3.2	54.2±3.0	0.0[(-4.2)-(2.1)]	49.8±5.6	50.5±7.9	0.0[(-16.8)-(12.6)]	0.999<
Role-Physical	52.8±5.1	56.9±0.0	-2.5[(-9.80)-(0.0)]	49.5±9.5	52.2±5.5	0.0[(-26.9)-(7.3)]	0.477
Bodily Pain	52.5±2.5	58.4±6.4	-6.7[(-11.0)-(0.0)]	51.3±11.3	53.6±10.2	0.0[(-32.6)-(17.7)]	0.314
General Health	52.2±9.6	45.0±15.6	1.0[(0.4)-(20.1)]	43.8±10.3	47.7±8.0	-2.4[(-31.9)-(21.5)]	0.145

Vitality	54.2±12.6	51.0±17.2	-3.1[(-9.3)-(22.0)]	46.74±11.2	49.7±9.5	-1.0[(-40.6)-(15.7)]	0.780
Social Functioning	49.5±6.3	51.4±9.4	0.0[(-10.9)-(5.4)]	46.3±9.9	52.7±5.7	-5.4[(-27.3)-(10.9)]	0.433
Role-Emotional	49.4±8.1	55.9±0.0	-3.9[(-15.6)-(0.0)]	45.2±13.1	52.2±7.0	-2.0[(-38.9)-(15.5)]	0.780
Mental Health	46.3±18.7	42.5±18.8	-5.6[(-5.6)-(22.5)]	46.2±10.4	51.8±8.5	-2.9[(-36.6)-(11.3)]	0.433
Physical Component Summary	54.9±3.4	56.2±5.2	0.0[(-4.5)-(0.6)]	50.9±6.3	50.8±7.9	0.0[(-36.6)-(11.3)]	0.673
Mental Component Summary	47.4±15.4	47.0±14.2	-4.8[(-5.5)-(11.5)]	44.5±11.2	51.3±8.8	-4.2[(-39.9)-(12.4)]	0.572

Quantitative variables are expressed as mean and standard deviation.

^aHospital Anxiety Depression Scale

^bLiebowitz Social Anxiety Scale

^cDifference in scales: Baseline–6 months after MVD

^dIncomplete resolution patients vs. complete resolution patients at difference in scale(Statistical testing was performed using the Mann-Whitney U test)

IV. DISCUSSION

This study revealed that 21.4% of HFS patients had a tendency for social anxiety disorder. This result is similar to that of previous studies (Table 6), which reported similar frequencies among HFS patients by using the modified DSM-IV criteria (ignoring criterion H, which excluded social anxiety due to a general medical condition). This rate is higher than that of primary social anxiety disorder in the general population²⁵ and the frequency of social anxiety in HFS patients significantly decreased after MVD, this result was supported by the difference in total scores of LSAS. MVD in these patients also improved their HRQoL and psychological comorbidities.

1. Social Anxiety Disorder and LSAS

As mentioned above, in this study, social anxiety disorder was assessed via LSAS. The LSAS is accepted by the International Consensus Group on Depression and Anxiety as the gold standard for assessment of the clinical influence of social anxiety disorder in an individual²⁶. The LSAS has been translated into many languages²⁷⁻²⁹, and its reliability and validity have been substantiated. The Korean version of the LSAS also reports high reliability and verified validity²⁰. Although the LSAS is a screening tool and cannot replace clinician evaluation, several studies have suggested that it is a useful instrument for classifying non-anxious controls and patients with social anxiety disorder³⁰.

Table 6. Literature review of hemifacial spasm with social anxiety disorder

Series (ref. no)	Number of Patients	Age (mean±SD)	Gender (male/female)	Duration of Symptom	Severity ^a of Symptom	Frequency of Social anxiety disorder
Erguvan Tugba Ozel-Kizil et al. ¹	20	52±13.9	11/9	111.5±106.8 (months)	2.9±0.64	20%(4/20) ^b
Antonio Lucio Teixeira et al. ²	29	60.5±11.7	7/22	9.1±4.9 (years)	N/A	24.1%(7/29) ^b
Present Study	28	52.2±8.8	10/18	4.9±2.9 (years)	2.4. ±0.6	21.4%(6/28)

N/A: not available

^aassessed by the Hemifacial Spasm Scale

^bdiagnosed by a psychiatrist

2. Influence of MVD on Psychiatric Aspect

In this study, the severity of symptoms did not significantly differ between the high-LSAS and low-LSAS groups (2.3 ± 0.8 vs. 2.4 ± 0.5 , $p=0.530$); however, the mean duration of symptoms in the high-LSAS group was significantly longer than that in the low-LSAS group (7.8 ± 2.2 vs. 4.1 ± 2.6 , $p=0.011$). These results contradict those of a previous study. E.T. Ozel-Kizil et al. reported in a comparison study that the outpatients with essential tremor ($n=20$), cervical dystonia ($n=20$), HFS ($n=20$) were treated either with medication or botulinum toxin injection, in which the severity of social anxiety as rated via LSAS total scores did not correlated with the severity which assessed by Hemifacial Spasm Scale ($r=0.23$, $p=0.92$) or symptom duration ($r=0.066$, $p=0.62$)⁷. This discrepancy may be due to the fact that our patients were admitted to the hospital for a surgical procedure, MVD, which is not a first-line therapeutic modality, and patients who underwent MVD did not usually respond or show side-effects to first-line treatment (i.e., medication or botulinum toxin injection). Therefore, these patients may have had similar severities of symptoms. In the light of these facts, the symptom duration of HFS patients with similar severities may have been affected by the development of social anxiety.

Preoperative psychosocial assessments indicated that the high-LSAS group was more likely to experience problems associated with general anxiety and depressive mood than the low-LSAS group (Table 2). These

results are similar to those of previous study that reported significantly higher Hamilton Anxiety Rating Scale and Hamilton Depression Rating Scale values in patients with secondary social anxiety disorder in hyperkinesia⁷. One of the main findings in this study was the significant reductions in the severity of social anxiety symptoms and general anxiety after MVD in the high-LSAS group compared to the low-LSAS group.

Several previous studies has already reported that , MVD provided significant and prolonged improvement in quality of life for patients with HFS, as measured using a disease-specific, validated quality-of-life assessment scale^{17,18} In this study, the SF-36 was used to specifically measure HRQoL. Our results show that the role-physical, vitality, role-emotional, and mental health dimensions and the mental component summary were significantly impaired in the high-LSAS group compared to the low-LSAS group. Additionally, the role-emotional dimension and mental component summary were significantly improved after MVD (Table 3). These findings suggested that patients with HFS who have social anxiety symptoms are significantly impaired in aspects of mental health and that MVD also has a positive influence on HRQoL in these patients via mental health improvement rather than physical health enhancement.

3. Limitation of This Study

This study had several limitations. The relatively small sample size of the study participants and the short follow-up period could be considered

limitations that restricted the generalization of the results. A longer patient follow-up period would enable us to observe the long-term effects of MVD; however, we were able to observe significant improvements even after 6 months. Consequently, future longitudinal studies on a larger sample size are needed to understand the clinical characteristics of secondary social anxiety in patients with HFS and the long-term impact of MVD.

V. CONCLUSION

Our findings suggest that social anxiety symptoms were common among patients with HFS and that the presence of social anxiety symptoms has the potential to lower aspects of mental health in HRQoL. HFS patients with social anxiety symptoms seem to obtain benefits from MVD not only for facial disfigurement but also for social anxiety levels and HRQoL.

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ABSTRACT (IN KOREAN)

미세혈관 감압술이 반측성 안면 경련 환자의
사회 불안 증상 및 건강 관련 삶의 질에 미치는 이점

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배경

안면 신경에 지배를 받는 편측 안면 근육의 불수의적인 수축을 특징으로 하는 이상운동 질환인 반측성 안면 경련은 심한 안면의 손상으로 인하여 사회 불안 장애를 유발할 수 있는 가능성이 높으며 이로 인하여 삶의 질에 지대한 영향을 미칠 수 있다. 저자들은 본 연구를 통하여 미세혈관 감압술이 반측성 안면 경련 환자의 사회 불안 증상 정도 및 건강 관련 삶의 질에 미치는 영향을 알아보고자 한다.

방법

본 연구는 2015년 1월부터 5월까지 반측성 안면 경련의 치료 목적으로 미세혈관 감압술을 시행 받은 환자들을 대상으로 하였으며 인적 사항에 대한 정보는 수술 전에 조사하였으며 표준화된 불안증 및 우울증 (병원 불안-우울 척도), 사회 불안증 (Liebowitz 사회불안 척도) 그리고 반측성 안면 경련의 정도는 수술 전 그리고 수술 후 6개월뒤에 측정하였으며 삶의 질에 대한 정보 역시 short form 36 (SF-36) 한국어 버전을 이용하여 수술 전과 수술 후 6개월 뒤에 측정하였다.

결과

수술 전 시행한 Liebowitz 사회불안 척도에서 60점 이상을

받은 6명의 환자 (21.4%)를 범사회 불안장애가 있는 것으로 간주하였으며 이를 high Liebowitz 사회 불안 척도 그룹으로 나머지 환자를 low Liebowitz 사회 불안 척도 그룹으로 분류하였다. 반측성 안면 경련의 증상 기간은 low Liebowitz 사회 불안 척도 그룹에 비하여 high Liebowitz 사회 불안 척도 그룹의 환자들이 통계적으로 유의하게 길었다 (7.8 ± 2.2 vs. 4.1 ± 2.6 ; $p = 0.011$). 수술 전 시행한 검사 상 high Liebowitz 사회 불안 척도 그룹의 환자들이 low Liebowitz 사회 불안 척도 그룹에 비하여 정신과적으로 동반된 질환이 더 많았으며 삶의 질 역시 더 저하되어 있음을 알 수 있었다. 미세혈관 감압술 6개월 뒤 high Liebowitz 사회 불안 척도 그룹에서 수술 전과 비교하였을 때 Liebowitz 사회 불안 척도의 총 점수 ($p=0.007$) 및 병원 불안-우울 척도의 불안 점수 ($p=0.012$)가 통계적으로 유의하게 감소하였음을 알 수 있었으며 그 외에도 low Liebowitz 사회 불안 척도 그룹에 비하여 high Liebowitz 사회 불안 척도 그룹의 환자들이 SF-36의 감정 역할 제한 ($p=0.039$) 그리고 정신 건강 수준 ($p=0.024$) 항목에서 통계적으로 유의한 개선이 관찰되었다.

결론

본 연구를 통하여 미세혈관 감압술이 반측성 안면 경련 환자의 안면 손상 회복뿐 만 아니라 그들의 삶의 질에 있어서 정신 건강 개선과 관련된 사회불안 증상의 호전에 유익이 있음을 확인 할 수 있었다.

핵심되는 말 : 건강 관련 삶의 질, 반측성 안면 경련, 미세혈관 감압술, 사회 불안 장애, Liebowitz 사회 불안 척도