Original Article

Evaluation of sexual functions in patients with chronic suppurative otitis media

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ABSTRACT

Objectives: The aim of this study is to evaluate sexual function scores in patients with chronic suppurative otitis media.

Patients and Methods: A total of 35 patients (20 male, 15 female) who had purulent discharge in one or both ears for at least three months and were diagnosed with chronic otitis media were included in the study group, while 30 volunteers (15 males, 15 females) who had no problem with their ears were included in the control group. Patients and controls underwent otolaryngology and urology examinations; female participants were asked to fill the female sexual function index and male participants were asked to accomplish the international index of erectile function. Pure tone audiometry, tympanometry and speech discrimination tests were applied on all participants.

Results: A significant difference was found between patients and controls in terms of scores for the subscales sexual desire (p=0.044), erectile function (p=0.012), and overall satisfaction (p=0.002) of the international index of erectile function in males. No significant difference was found between both groups in terms of other subscale scores (p>0.05). A significant difference was found (p<0.05) between patients and controls in terms of scores for the subscales orgasm (p=0.004), satisfaction (p=0.007), desire (p=0.020), arousal (p=0.002), and lubrication (p=0.015) in the female sexual function index. No significant difference was found (p>0.05) between both groups only in the subscale pain (p=0.450).

Conclusion: Chronic otitis media also negatively affected sexual function scores and it should also be examined from this aspect.

Keywords: Chronic otitis media; erectile function; hearing loss; orgasmic function; sexual function.

Chronic suppurative otitis media (CSOM) is a common infectious disease that is widespread in the world.[1] It is characterized by tympanic membrane perforation, hearing loss (HL) and purulent discharge from the external auditory canal (EAC) and signifies infection of the tympanic cavity and mastoid cells that lasts for at least three months.[1,2]

Previous studies investigated negative effects of otic disorders like Meniere disease, tinnitus, and HL on sexual functions.[3-5] Other studies

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conducted in the field of ear, nose, and throat also determined that there was a significant impairment of sexual functions in patients with sinonasal polyposis and an improvement after treatment.[6] Sexual functions are also negatively affected in sleep apnea syndrome and this situation regresses after treatment.[7-9] Studies on sexual functions in many chronic, metabolic and neurological diseases have been conducted and negative effects of these diseases have been reported.

Patients with CSOM usually have a foul-smelling ear discharge and HL. Thus, we think that these patients may be affected negatively in terms of sexual functions that require close contact and communication. To the best of our knowledge, this is the first study on this subject.

PATIENTS AND METHODS

The study was started after receiving an approval from the Istanbul Medipol University Ethical Committee and both written and verbal consents of all participants between February 2013 and March 2014. A total of 35 patients (20 males, 15 females), who had purulent discharge in one or both ears for at least three months and were diagnosed with chronic otitis media, were included in the study group, while 30 volunteers (15 males, 15 females) who had no problem with their ears were included in the control group. All participants were examined in the ear nose and throat and urology outpatient clinics. Excluded were patients who had chronic metabolic diseases, difficulty in breathing through the nose, long-standing perforated eardrum but no purulent discharge, body mass index above 30, urinary tract infection, previous diagnosis of sexual function disorder, used medications due to sexual problems, neurological diseases, mental retardation or psychiatric problems, lacked an active sexual life and a partner, and were younger than 20 and older than 50. Pure tone audiometry, tympanometry, and speech discrimination tests were conducted on all participants. After ENT and urology examinations, female participants were asked to fill the female sexual function index (FSFI) and male participants to accomplish the international index of erectile function (IIEF).

Scales used in the study

The FSFI was developed in 2000 in the USA by Rosen et al.[10] as a multidimensional scale of 19 items for evaluating female sexual functions or problems within the last four weeks. The scale was adapted into Turkish and validated by Aygin and Aslan[11] in 2005. The scale has six subscales-- desire, arousal, lubrication, orgasm, satisfaction, and pain. Each question is scored from 0 to 5. The 1st and 2nd question evaluate sexual desire or frequency and level of interest, the 3rd to 6th evaluate frequency and level of arousal, assurance and satisfaction, the 7th to 10th evaluate frequency and difficulty of lubrication and protection in sexual intercourse, the 11th to 13th evaluate frequency, difficulty and satisfaction of orgasm, the 14th -16th evaluate satisfaction, intimacy with partner, satisfaction in sexual intercourse and the entire life, and the 17th to 19th evaluate pain or discomfort, and level of pain during vaginal penetration.

Developed by Rosen et al.[12] the IIEF is commonly used to evaluate men with sexual complaints today. The scale was adapted into Turkish and validated by Turunç et al.[13] It contains a total of 15 questions. The 1st to 5th and 15th questions measure erectile dysfunction, the 9th and 10th measure orgasmic function, the 11th and 12th measure sexual desire, the 6th, 7th and 8th measure sexual satisfaction, and the 13th and 14th measure general satisfaction.

Statistical analysis

Statistical calculations were performed using IBM SPSS version 21.0 (IBM Corp., Armonk, NY, USA). In this study, continuous variables were given with the values of mean, median, standard deviation, max-min, and range. Shapiro Wilk test was used to examine whether or not continuous variables showed a normal distribution. Comparisons of continuous variables showing a normal distribution between two groups were conducted via independent samples t-test, whereas comparisons of variables showing no normal distribution between two groups were conducted by using Mann-Whitney U test. The correlation between continuous variables showing a normal distribution was examined via Pearson product-moment correlation coefficient (PPMCC), whereas the correlation between

variables showing no normal distribution was examined by using Spearman correlation analysis. In the study, the significance level was accepted as 95% ($p<0.05$).

RESULTS

All 35 patients (20 males, 15 females) and 30 controls (15 males, 15 females) completed the study. Among males, the average age was 32.75±5.93 years (range 24-47 years) in the study group and 32.67±7.04 years (range 24-42 years) in the control group. There was no statistically significant difference between the male study and control group in terms of average age ($p=0.970$). Among females, the average age was 35.67±6.70 years (range 22-45 years) in the study group and 35.40±9.01 years (range 24-48 years) in the control group. There was no statistically significant difference between the female study and control group in terms of average age ($p=0.927$).

Table 1 shows the comparative IIEF scores of male study and control groups. As seen in the Table, the scores for sexual desire ($p=0.044$), erectile function ($p=0.012$), and overall satisfaction ($p=0.002$) IIEF subscales were significantly different between both groups ($p<0.05$). There was no statistically significant difference between the groups in terms of the other subscale scores ($p>0.05$).

Table 2 shows the comparative FSFI scores of the female study and control groups. The scores for orgasm ($p=0.004$), satisfaction ($p=0.007$), desire ($p=0.020$), arousal ($p=0.002$), and lubrication ($p=0.015$) subscales were significantly different between both groups ($p<0.05$). No statistically significant difference was found ($p>0.05$) between the groups in terms of the scores for pain ($p=0.450$).

Table 3 shows results of correlation analysis between the HL levels in right and left ears of the male study group and IIEF scores. A negative correlation was determined ($p<0.05$) only between the IIEF scores for the erectile function subscale and the HL level of the left ear

Table 1. Comparison of study and control groups according to IIEF in men

	Study group (n=20)			Control group (n=15)			
	Mean±SD	Median	Min-Max	Mean±SD	Median	Min-Max	*p*
Orgasmic function	7.55±1.986			7.93±1.792			0.560*
Sexual desire	6.65±1.461			7.73±1.580			**0.044***
Intercourse satisfaction	10.15±2.300			11.33±1.839			0.111*
Erectile function		22.5	14-30		29.0	18-30	0.012**

IIEF: International index of erectile function; SD: Standard deviation; Min: Minimum; Max: Maximum; * Independent-samples t test p value; ** Mann-Whitney U test p value.

Table 2. Comparison of study and control groups according to FSFI in women

	Study group (n=15)			Control group (n=15)			
	Mean±SD	Median	Min-Max	Mean±SD	Median	Min-Max	*p*
Orgasm	8.80±3.278			12.20±2.624			**0.004***
Satisfaction	9.53±2.875			12.20±2.111			**0.007***
Pain	6.67±3.222			7.53±2.973			0.450*
Desire		6.0	2-8		7.0	4-8	**0.020****
Arousal		10.0	5-18		18	8-20	**0.002****
Lubrication		13	4-19		19	6-20	**0.015****

IIEF: International index of erectile function; SD: Standard deviation; Min: Minimum; Max: Maximum; * Independent-samples t test p value; ** Mann-Whitney U test p value.

Table 3. Correlation of hearing levels and IIEF scores in study group men

Hearing level	Scores of IIEF				
	Orgasmic function*	Sexual desire*	Intercourse satisfaction*	Erectile function**	Overall satisfaction**
Right ear					
r	0.052	0.355	0.276	0.261	0.263
p	0.829	0.124	0.240	0.267	0.263
Left ear					
r	-0.390	-0.264	-0.229	**-0.538**	-0.238
p	0.089	0.261	0.332	**0.014**	0.312

IIEF: International index of erectile function; * Pearson correlation analysis; ** Spearman sequence correlation; r: Correlation coefficient.

Table 4. Correlation of hearing levels and FSFI scores in study group women

Hearing level	Scores of FSFI					
	Orgasm*	Satisfaction*	Pain*	Desire**	Arousal**	Lubrication**
Right ear						
r	-0.086	0.250	-0.075	-0.024	-0.061	-0.065
p	0.760	0.369	0.791	0.931	0.829	0.817
Left ear						
r	-0.074	-0.430	-0.218	0.364	-0.145	-0.059
p	0.793	0.109	0.435	0.182	0.606	0.835

FSFI: Female sexual function index; * Pearson correlation analysis; ** Spearman sequence correlation; r: Correlation coefficient.

(r=-0.538, p=0.014). It was found that as the HL level in the left ear increased, IIEF scores for the erectile function subscale were lower. The same significant correlation was not determined in the right ear (p>0.05). No statistically significant correlation was determined between the other IIEF subscale scores and the HL levels of right and left ears in the male study group (p>0.05).

Table 4 shows the results of correlation analysis between the HL levels in right and left ears and FSFI scores in the female study group. As is seen in the table, there was no significant relationship between HL levels of right and left ears and all subscale scores of the FSFI (p>0.05).

DISCUSSION

Chronic suppurative otitis media is a disease generally characterized by foul-smelling ear discharge, HL and tympanic membrane perforation. Studies reveal that agents of CSOM mainly consist of gram-negative anaerobic bacteria. It is known that infections caused by anaerobic bacteria involve malodorous secretions.[1] In CSOM, a conductive HL may develop due to impairment of tympanic membrane integrity and possible ossicular chain disruption. In progressive stages of the disease, inflammatory infiltrates in the tympanic cavity might also affect the inner ear and establish a ground for transformation of conductive into a mixed-type HL.[2]

The present study revealed that CSOM caused a significant decrease in sexual function scores of both women and men. The correlation between the amount of HL and sexual function scores was also examined. It was determined that even though there was a significant decrease in sexual function scores of male patients with CSOM, the amount of HL showed a correlation with the decrease of sexual function scores only in the subscale of erectile function in males and no significant correlation in the other subscales.

It was observed that the amount of HL was not correlated with any subscale of FSFI in women. If we studied a larger series, we might possibly have found a significant correlation between HL levels and sexual function scores. A study by Bakır et al.[3] on 36 patients with sensorineural HL and 40 healthy voluntary male subjects reported that sexual function scores were significantly lower, and sexual dysfunction was significantly higher, in patients with HL than the control group. In this study, the correlation between the amount of HL and sexual function scores was not evaluated. Zapata and López-Escámez[4] examined sexual functions of 48 patients (26 female, 22 male) with Meniere disease. A high prevalence of sexual dysfunction was found in these patients, whose average age was 55.[4] Muluk et al.[5] compared 20 patients and controls in their study that evaluated sexual functions of patients with tinnitus. They found that patients with tinnitus had lower IIEF and FSFI scores than controls, but this was not significant.[5]

In the present study, patients with CSOM were evaluated. These patients suffered from occasional foul-smelling ear discharge and HL. A significant decrease in sexual function scores in patients with chronic otitis media was thought to be associated with both HL and malodorous ear discharge. Although previously mentioned studies showed that sexual functions were affected negatively in patients with HL alone, in the present study, the presence of both HL and foul-smelling ear discharge was thought to negatively affect intimacy during sexual activity. Most previous studies comparing sexual functions and various diseases evaluated only male patients. The present study evaluated both female and male patients and determined a significant decrease in sexual function scores in both genders (at a higher rate for women).

Similar studies were conducted in some ear, nose, and throat diseases outside of ear. Khafagy and Khafagy[7] studied erectile functions in a male patient group with OSAS. In this study, it was determined that patients with OSAS had a higher erectile dysfunction and there was an evident improvement in erectile dysfunctions after surgical treatment or CPAP treatment. The study by Günhan et al.[6] comparing 33 male patients with nasal polyps and controls determined that patients had significantly higher erectile dysfunction than controls and showed a significant improvement in evaluations in the postoperative six months.[6]

The limitation of the present study is that no biochemical hormone analyses were conducted. On the other hand, scales with established international and Turkish validity and reliability were used. We think that the study would contribute to the literature since it determined a significant decrease in sexual function scores of patients with chronic otitis media and is, to the best of our knowledge, the first such study in this field.

In conclusion, CSOM is a serious disease that can cause various complications. This study revealed that chronic otitis media also negatively affected sexual function scores and should also be examined from this aspect.

Declaration of conflicting interests

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