

Original Research Article

A Descriptive Study on Dysphonia in Iraq

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Abstract

A disordered voice can be defined as one that has one or more of the following characteristics: it is not audible, it is not appropriate for the gender and age of the speaker; it is not capable of fulfilling its linguistic and paralinguistic functions; it fatigues easily; it is associated with discomfort and pain on phonation. A voice disorders can be divided into organic, neurologic, and functional categories. To evaluate the distribution and causes of voice disorders. This is a cross-sectional, descriptive study, consisted of 100 patients. They were 46 males and 54 females. They had been assessed at the otolaryngology department in Al-Diwania teaching hospital, Al-Diwania city, Iraq, during the period between May 2013 to September 2015, the age range from 10-80 years. Inclusion criteria was voice disorder for 3 weeks or more. Patients were first examined by an otolaryngology specialist, this is followed by the clinical examination of the throat. Indirect laryngoscopy was done, followed by fiberoptic laryngeal video endoscopy. Imaging study was done for patients with tumoral lesions. For patients with suspected neurological problems magnetic resonance imaging of the brain and neurological consultation was done. The diagnosis then confirmed and the patients receive treatment accordingly. Most of patients with voice disorders are less than 50 years old. The prevalence of voice disorders was higher in women than in men. The commonest causes of dysphonia are organic (70%) followed by functional (24%) and neurologic dysphonia (6%). In patients with organic dysphonia the commonest cause was the Chronic nonspecific laryngitis (20%), followed by vocal cord nodules (18%) vocal cord polyp (13%) while the granuloma was the least (1%). Dysphonia is important symptom of laryngeal disorders. The highest prevalence of voice disorders was observed during the years of active life, and the majority are due to benign organic diseases.

Key words: Dysphonia, hoarseness, Iraq.

الخلاصة

اضطرابات الصوت تعرف على انها واحده أو أكثر من الخصائص التالية : أن الصوت ليس مسموعا، أنه ليس مناسباً لجنس وعمر المتكلم؛ أنه ليس قادراً على الوفاء بمهامه اللغوية ، يتعب بسهولة، ويرتبط ذلك مع الانزعاج والألم أثناء الكلام. ويمكن تقسيم اضطرابات الصوت الى العضوية، العصبية، والفئات الوظيفية . كان الهدف من الدراسة تقييم التوزيع والأسباب المحتملة لاضطرابات الصوت. هذه الدراسة وصفية مقطعية، أجريت على 100 مريض. كانوا 46 ذكر و 54 أنثى. تم تقييمهم وفحصهم في شعبة الأنف والأذن والحنجرة في مستشفى الديوانية التعليمي في الديوانية، العراق، في الفترة من مايس 2013 الى كانون الاول 2015. اعمار المرضى كانت تتراوح بين 10 الى 80 سنة. في المريض الذي نظن بوجود مشكله عصبية لديه أجرينا التصوير بالرنين المغناطيسي. وكانت معيار الاشتراك هو اضطراب في الصوت لثلاثة اسابيع أو أكثر. تم فحص المرضى لأول مرة من قبل اختصاصي طب الأنف والأذن والحنجرة، و تبعه الفحص السريري من الحلق باستعمال الفحص غير المباشر للحنجرة و تم تنظير الحنجرة باستعمال الناظور المرئي مع تسجيل الفحص بالفيديو. وقد تم اجراء التصوير للمرضى الذين يعانون من الحالات الورمية. في المرضى المشتبه انهم يعانون من مشاكل عصبية تم اجراء التصوير بالرنين المغناطيسي للدماغ واستشارة اختصاصي طب الدماغ. وبعد اكتمال التشخيص تلقى المرضى العلاج وفقاً لذلك. معظم المرضى الذين يعانون من اضطرابات الصوت هم أقل من 50 سنة. وكانت نسبة انتشار اضطرابات الصوت في النساء أكثر من الرجال . الأسباب الأكثر شيوعاً لاضطرابات الصوت هي الاسباب العضوية (70 ٪)، يليه الوظيفية (24 ٪) والعصبية (6 ٪). وفي المرضى الذين يعانون من اضطرابات الصوت العضوية كان السبب الأكثر شيوعاً هو التهاب الحنجرة المزمن غير المحدد (20 ٪) ، تليها عقيدات الحبل الصوتي (18 ٪) الزوائد اللحمية في الحبال الصوتية (13 ٪)، في حين كان الورم الحبيبي أقل (1 ٪). اضطرابات الصوت هو مظهر مهم لأمراض الحنجرة وقد لوحظ ان أعلى معدلات انتشار اضطرابات الصوت هي خلال سنوات النشاط، والأغلبية هي بسبب الأمراض العضوية الحميدة .

Introduction

A disordered voice can be defined as one that has one or more of the following characteristics: it is not audible, it is not appropriate for the gender and age of the speaker; it is not capable of fulfilling its linguistic and paralinguistic functions; it fatigues easily; it is associated with discomfort and pain on phonation[1]. A voice disorders can be

divided into organic, neurologic, and functional categories. Organic lesions are resulting from structural changes of the vocalization system [2], and are classified under the headings of, traumatic, inflammatory/ infectious, malformation and neoplastic (tumoral) etiologies. The following table show examples of organic dysphonia [3].

cause
Malformations:
External and internal laryngocele
Hemangiomas
Laryngomalacia
Congenital webs
Congenital laryngeal stenosis
vocal cord sulcus
Post traumatic:
Artenoid dislocation
Intubation granuloma
Laryngeal stenosis
Inflammatory:
Acute laryngitis
Chronic nonspecific laryngitis
Epiglottitis
Laryngeal edema
Pseudo croup
Neoplasms:
Vocal fold nodules
Reinke's oedema
cysts
Laryngeal papillomas
Contact granuloma
vocal cord polyp
Laryngeal carcinoma

In neurologic dysphonia, there is deficit that are probably caused by a lesion in the central or peripheral nervous system [2]. Both peripheral and central neurogenic disorders, may alter the voice by changing the configuration of the larynx and vocal tract. Abnormalities in vocal tract tension owing to voluntary or involuntary muscle contractions occur in neurogenic and/or functional disorders. The origins may be traumatic, neoplastic, vascular, infectious, degenerative, or idiopathic. They are often present in conjunction with disease

processes that alter not only the laryngeal musculature but also lip, tongue, and jaw control and other motor systems such as respiration[4]. Functional dysphonia refers to a voice disturbance that occurs in the absence of structural or neurologic laryngeal pathological characteristics, and may account for 10 to 40% of cases referred to voice clinics[5-7]. Functional dysphonia occurs predominantly in women, commonly follows upper respiratory infection symptoms, is frequently transient, and varies in its response to

treatment[5,8,9].The aim of this study was to evaluate the distribution and causes of voice disorders.

Materials and Methods

This is a cross-sectional, descriptive study, consisted of 100 patients. They were 46males and 54females. They had been assessed at the otolaryngology department in Al-Diwania teaching hospital, Al-Diwania city, Iraq, during the period between May 2013 to September 2015, the age range from 10-80 years.Inclusion criteria was voice disorder for 3weeks or more .Patients were first examined by an otolaryngology specialist and, after giving informed consent, demographic information was obtained, this is followed by The clinical examination of the throat.Indirect laryngoscopy was done, followed by fiberopticlaryngeal video endoscopy across the four stages including respiration, transition from respiration to sound production, phonation, and coughing. Imaging study was done for patients with

tumoral lesions. For patients with suspected neurological problems magnetic resonance imaging of the brain and neurological consultation was done .The diagnosis thenconfirmedand the patients receive treatment accordingly.

Data Analysis

All the data were analyzed using the An interactive calculation tool for chi-square tests of goodness of fit and independence, Kristopher J. Preacher, University of Kansas.P values < 0.05 indicate statistical significant.

Results

Our study include100 patients. They were 46 males and 54 females.

The clinical and demographic characteristics of these 100 patients are shown in Table 1.Figure1representthe demographic characteristics of the study population. All the data of those 100 patients according to the age groups and the clinical causes are shown in Table 2.

Table 1:Demographic characteristics of the study population(P-value=0.0168)

age	male	female	total	%
10-20	1	4	5	5%
21-30	4	13	17	17%
31-40	15	5	20	20%
41-50	12	8	20	20%
51-60	8	11	19	19%
60-70	2	7	9	9%
71-80	4	6	10	10%
total	46	54	100	100%

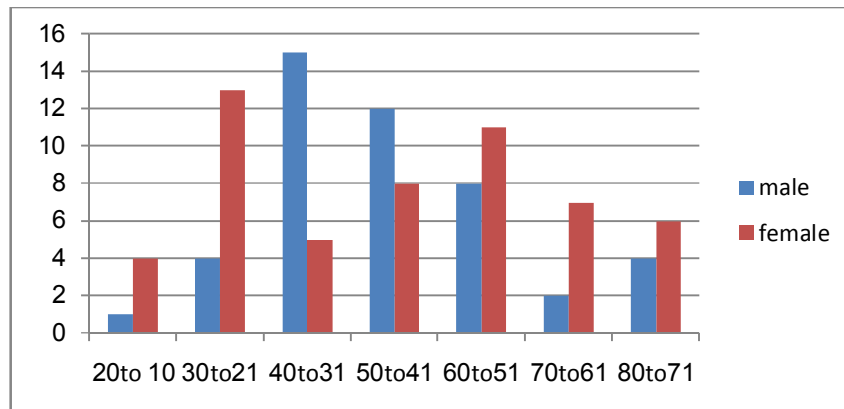


Figure1:Demographic characteristics of the study population.

Table 2: Distribution of patients according to the age groups and clinical cause.

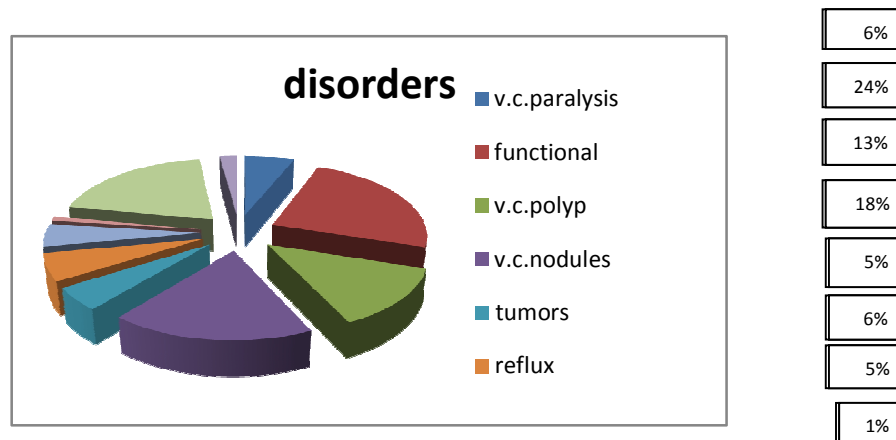
age	vocal cord paralysis	functional dysphonia	vocal cord polyp	Vocal cord nodules	tumors	reflux	Reinke'soedema	Arytenoid granuloma	Chronic nonspecific laryngitis	Chronic infections	Total
10-20	0	2	0	2	0	0	0	0	1	0	5
21-30	1	9	2	4	0	0	0	0	1	0	17
31-40	2	6	3	7	0	1	0	0	1	0	20
41-50	1	4	2	4	0	1	1	1	6	0	20
51-60	0	2	3	1	1	0	3	0	7	2	19
60-70	2	0	1	0	3	3	0	0	0	0	9
71-80	0	1	2	0	1	1	1	0	4	0	10
total	6	24	13	18	5	6	5	1	20	2	100

The distribution of the clinical causes in the study population and the distribution according to the sex of those 100 patients

are shown in table 3, and it is represented in Figures 2 and 3 respectively.

Table 3: The distribution of the clinical causes according to the sex (P value=0.03035813)

disorder	male	female	total	%
vocal cord paralysis	5	1	6	6%
functional dysphonia	8	16	24	24%
vocal cord polyp	6	7	13	13%
vocal cord nodules	11	7	18	18%
tumors	4	1	5	5%
reflux	1	5	6	6%
Reinke'soedema	0	5	5	5%
Arytenoid granuloma	0	1	1	1%
Chronic non specific laryngitis	9	11	20	20%
Chronic infections	2	0	2	2%
total	46	54	100	100%

**Figure 2:** Distribution of the clinical causes in the study population

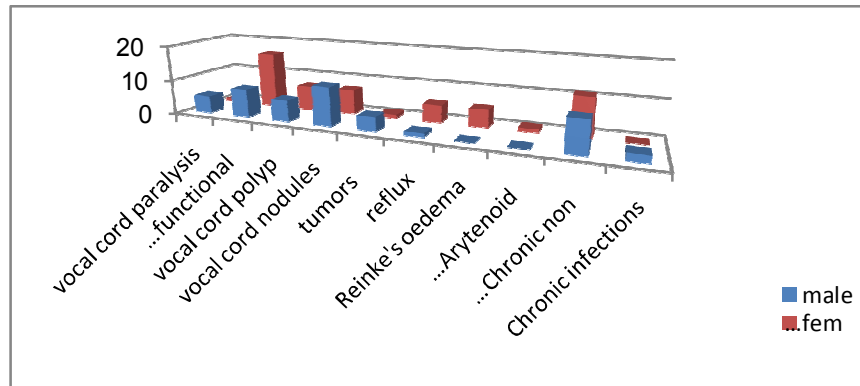


Figure 3: Distribution of the clinical causes according to the sex

The distribution of the clinical causes as three groups: organic, neurological and

functional dysphonia shown in table4, and it is represented in Figure 4.

Table 4: The distribution of the clinical causes as organic, neurological and functional dysphonia

Disorder	male	female	total	%
organic dysphonia	33	37	70	70%
Neurological dysphonia (vocal cord paralysis)	5	1	6	6%
functional dysphonia	8	16	24	24%
total	46	54	100	100%

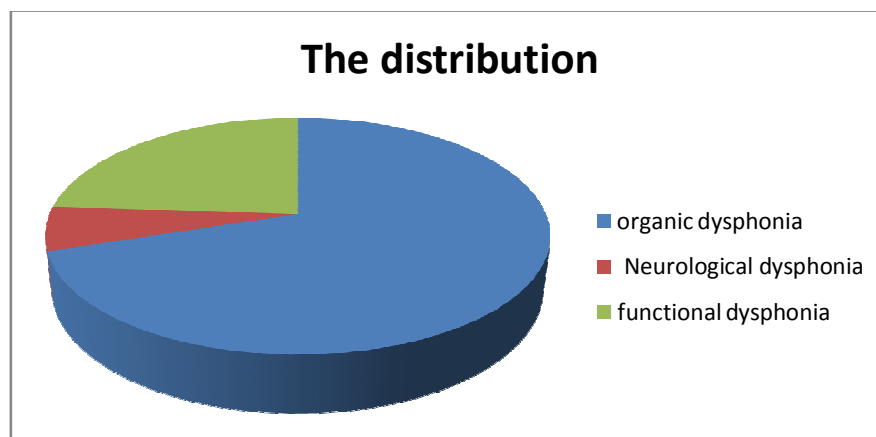


Figure 4: The distribution of the clinical causes as organic, neurological and functional dysphonia

Discussion

In our study we found that the highest prevalence of voice disorders was observed among patients aged <50 years. This agrees with the findings of Lopez et al.[10], Abtahi et al.[11], Wang et al.[12], Roy et

al.[13], Smith et al. [14] and de Medeiro et al.[15], Keyvan Kiakojoury[16]. In this study, the prevalence of voice disorders was higher in women than in men. This agrees with the findings of Dabirmoghadam et al.[17], Lee et al. [17] Roy et al. [13]

Smith et al. [20]. But, disagrees with the findings of, Abtahi et al. [11], Keyvan Kiakojoury [16] who found that the prevalence of voice disorders was higher in men than in women. In studies by Lopez et al [10] and Thibealt et al [15], no differences were found between men and women with voice disorders. In our study we found that the organic dysphonia was the commonest (70%) followed by functional (24%) and neurologic dysphonia (6%). This agrees with the findings of, Keyvan Kiakojoury [16] and Reiter [22]. But, disagrees with the findings of, Lopez et al. [10], Urruikotxea [23] and Sala [24], in which a higher prevalence was associated with functional disorders. In our study we found that in patients with organic dysphonia the commonest cause was the Chronic nonspecific laryngitis (20%), followed by vocal cord nodules (18%) vocal cord polyp (13%) while the granuloma was the least (1%). This disagrees with the findings of, Lopez et al. [10], Urruikotxea [23], and Keyvan Kiakojoury [16] who found that the prevalence of vocal nodules was higher than other types of organic disorders, and Nagata [25] who claimed that polyps are the most common structural abnormality that cause hoarseness.

Conclusion

Dysphonia is important symptom of laryngeal disorders. The highest prevalence of voice disorders was observed during the years of active life, and the majority are due to benign organic diseases.

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