

ORIGINAL ARTICLE

Assessment of Degree of Psychological Health Involvement in Pre-laryngectomized Patients[☆]

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KEYWORDS

Total laryngectomy;
Preoperative fear;
Anxiety;
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Abstract

Introduction and objective: Several authors have found increased anxiety in patients the day before an intervention and its correlation with anxiety levels the postoperative period.

In this study, we determined a number of problems to which patients who underwent total laryngectomy often objected: the tracheostomy, being left without a voice and it being an aggressive, major surgery.

Our objective was to assess the degree of anxiety and fears of the patient prior to total laryngectomy.

Material and methods: We compared 2 groups of 20 patients who underwent operation for total laryngectomy and for other ENT pathologies.

On the day before the operation, we collected demographic and medical data and administered the Spanish versions of the Folstein Mini-Mental State Examination (MMSE) and the Goldberg General Health Questionnaire (GHQ-28). We also investigated whether the patients had any fear or fear of surgery and what that fear was.

Results: Completion of the MMSE revealed cognitive impairment in only 1 patient. We subsequently conducted the GHQ-28 and found psychological distress in 20%–25% of our cases. When the different fears in both groups were compared by χ^2 , the results were not statistically significant.

Conclusions: Total laryngectomy causes the loss of oral communication and impairs self-image, contributing to a strong emotional reaction. It is essential to have effective rehabilitation, which considers all aspects of health-sickness, such as the recovery of spoken language, social aspects, and the psychological characteristics, vital for proper comprehensive patient management.

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PALABRAS CLAVE

Laringectomía total;
Miedo preoperatorio;
Ansiedad;
Paciente quirúrgico

Valoración del grado de afectación sobre la salud psíquica en el paciente prelaringectomizado**Resumen**

Introducción y objetivos: Diferentes autores han puesto en evidencia el aumento de ansiedad en los pacientes el día anterior a una intervención y su correlación con los niveles de ansiedad en el post-operatorio.

En este trabajo estudiamos una serie de problemas que a menudo se obvian en el paciente intervenido de laringectomía total: la traqueotomía, el quedarse sin voz y el ser una agresiva e importante intervención quirúrgica.

Nuestro objetivo es valorar el grado de ansiedad y los miedos del paciente previo a la laringectomía total.

Material y métodos: Se comparan 2 grupos de 20 pacientes que fueron intervenidos de laringectomía total y de otras enfermedades de ORL.

El día anterior a la operación, recogíamos sus datos sociodemográficos y médico-quirúrgicos, y se les aplicaba el Mini-Examen Cognoscitivo (MEC) de Folstein y el Cuestionario de Salud General de Goldberg (GQH-28) en sus versiones españolas. Exploramos si tenían algún temor o miedo ante la intervención y en qué consistía ese miedo.

Resultados: Tras la realización del MEC, sólo un paciente presentó deterioro cognitivo. Posteriormente realizábamos el GHQ-28 y nos encontramos con un malestar psicológico entre el 20 y el 25% de los casos. Al comparar mediante el χ^2 los diferentes miedos en los 2 grupos los resultados no son estadísticamente significativos.

Conclusiones: La laringectomía total provoca la pérdida de la comunicación oral y la distorsión de la autoimagen, lo que contribuye a una fuerte alteración emocional. Es necesaria una rehabilitación efectiva, que considere todos los aspectos relacionados con el proceso salud-enfermedad desde antes de la cirugía como la recuperación del lenguaje hablado, los aspectos sociales y sus características psicológicas, las cuales son vitales para el adecuado manejo integral del paciente.

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Introduction

Despite the latest advances in medicine and surgical techniques, surgery still represents a stressful event for many patients. It involves concerns regarding hospitalisation, not awakening from anaesthesia, pain, illness, recovery, separation from family, economic and employment status, physical dependence and death, among others. These doubts may give rise to a number of emotional responses: anxiety, stress, and depression, which have important consequences when they are very intense, making postoperative recovery slower and more complicated.

For years, authors such as Spielberger et al.¹ have shown increased levels of anxiety in patients the day before surgery. Leigh et al.² have shown that patients who were informed by the anaesthetist and the surgeon prior to surgery had significantly lower levels of anxiety than those who were not informed. Johnston³ notes the persistence in the postoperative period of high levels of anxiety that are correlated with the levels of preoperative anxiety.

The disease, hospitalisation, surgery, and anaesthesia represent a threat to physical integrity for most people, a change in social status and a modification of the usual conditions of life.

In situations that cause anxiety in the subject, there is an activation of the central nervous system, as well as a neuroendocrine and autonomic activation. These 3 systems carry out feedback steadily, thus increasing, maintaining,

or reducing anxiety. Cardoso et al.⁴ found significant differences between the level of cortisol in saliva related to anxiety and patient recovery.

A high degree of anxiety or stress in the patient can affect the response to anaesthetic drugs, blood pressure, or heart rate. It can also delay the healing of wounds, weaken the immune system, and prolong the postoperative period.⁵⁻⁷

The international development of surgical psychoprophylaxis shows how patients who receive counselling before an operation use fewer postoperative analgesics, decrease their levels of anxiety and distress, heal more quickly, and have a shorter postoperative period (the admission period is reduced by an average of 2-3 days). Patients consequently show a sense of comfort and control of the situation.⁵⁻⁷

This article assesses psychological distress and the presence or absence of cognitive impairment related to the personality and fears of patients about to undergo ENT surgery.

Material and Methods

We compared 2 groups of 20 randomly selected patients who were to undergo surgery due to ENT pathology. The first group were to undergo total laryngectomy exclusively and the second, other operations such as direct laryngoscopy and biopsy, septoplasty, stapedectomy, radical mastoid, and submaxillectomy (Table 1).

Table 1 Total Laryngectomy Versus Other Surgeries.

Surgical Groups	Number of Patients, n
<i>Group I: laryngectomized</i>	20 (100%)
<i>Group II: non-laryngectomized</i>	
Laryngeal microsurgery	10 (50%)
Septoplasty	4 (20%)
Stapedectomy	2 (10%)
Radical mastoid	3 (15%)
Submaxillectomy	1 (5%)
<i>Total patients, n</i>	40

The 20 patients in Group I (total laryngectomy) were male (100%), while in Group II (other ENT surgeries), 9 (45%) were male and 11 (55%) were female.

We should note that the absence of women in the group of laryngectomy patients is due to the low incidence of this pathology in women. The different surgeries of the control group were randomly selected within the programmed interventions.

The mean age of the laryngectomized group was 57.8 years, with an age range between 48.3 and 71.8 years. In Group II, the mean age was 42.7 years (range, 27.2–77.1 years).

Regarding the employment situation, there was a predominance of employed patients in both groups. In terms of marital status, in Group I there was a predominance of single patients (40%), while the predominance was of married patients (70%) in Group II (Table 2).

In the group of laryngectomy patients, there was a history of anaesthesia in 100%, since all had previously received laryngeal microsurgery. In the other group, there was a history of anaesthesia in 62%.

To quantify the prevalence of psychological distress detected due to the surgery and to avoid biases that could distort the results, we established exclusion criteria from the sample: presenting a prior oncological process, being diagnosed with a psychiatric or neurological illness, taking any psychotropic medication, being illiterate, and having

some important sensory deficit that prevented the patient from completing the questionnaire.

It is important to note that when the surgery was scheduled, all patients signed an informed consent form endorsed by SEORL for such intervention. This form explained the surgery in detail, as well as its expected risks and benefits.⁸

The day before surgery, patients were visited and the reason for the study was explained, and their cooperation was requested. They were explicitly told that their participation was voluntary and that any information collected would have a purely statistical treatment. If they agreed, they were asked to sign an informed consent for participation in the study.

We proceeded to collect socio-demographic data and carry out the following psychometric tests: Mini-Mental State Examination (MMSE) and Goldberg's 28-question General Health Questionnaire (GHQ-28).

The MMSE is a test designed to assess the intellectual function of a patient (Appendix A). It was derived from the original instrument by Folstein and Folstein⁹ in the USA, and standardised in our environment by Lobo et al.¹⁰ It is short, simple test, which explores in about 5 min the cognitive areas of orientation, memory setting, recent memory, capacity for concentration and attention, object identification, verbal and written orders, abstraction, writing and construction. The maximum possible score is 35 points. We considered (following the validation criteria of the test) 27 points as the cut-off to identify patients with probable disruption of cognitive functions. All those who were below 27 (<27) were not administered the GHQ-28.

Once the MMSE was passed, patients were questioned about their fears or apprehensions regarding the operation, with the response being free. Different fears appeared in both Groups I and II (Table 3).

The GHQ-28 is a self-administered 28-item test (Appendix B). It consists of 4 subscales that measure: *a*) somatic symptoms of psychological origin (items 1–7); *b*) anxiety (items 8–14); *c*) social dysfunction (items 15–21); and *d*) depression (items 22–28). The 28 items are evaluated using a Likert response format (better, same, worse, or much worse than usual). The scoring system consists of giving 2 values (0 or 1) to the response categories following the sequence 0, 0, 1, 1. The total score ranges between 0 (no discomfort) and

Table 2 Employment and Civil Status of Patients Undergoing ENT Surgery.

	Group I (n=20) (Laryngectomized)	Group II (n=20) (Other ENT Surgeries)
<i>Employment status</i>		
Employed	11 (55%)	13 (65%)
Retired by disability	1 (5%)	2 (10%)
Retired	3 (15%)	1 (5%)
Unemployed	5 (25%)	4 (20%)
<i>Total</i>	20 (100%)	20 (100%)
<i>Civil status</i>		
Single	8 (40%)	4 (20%)
Married	6 (30%)	14 (70%)
Widowed	6 (30%)	2 (10%)
<i>Total</i>	20 (100%)	20 (100%)

Table 3 Preoperative Psychological Fear by the Type of Surgery.

	Laryngectomized	Other ENT Surgeries	Total Surgeries
<i>Postoperative period</i>	6 (30%)	2 (10%)	8 (20%)
Losing voice	5 (25%)	0 (0%)	5 (12.5%)
<i>Nothing</i>	4 (20%)	8 (40%)	12 (30%)
<i>Not waking up</i>	2 (10%)	7 (35%)	9 (22.5%)
Operating theatre	1 (5%)	1 (5%)	2 (5%)
Hospital	1 (5%)	0 (0%)	1 (2.5%)
Waking up during the intervention	1 (5%)	0 (0%)	1 (2.5%)
Cancer	0 (0%)	1 (5%)	1 (2.5%)
Anaesthesia	0 (0%)	1 (5%)	1 (2.5%)
<i>Total</i>	20 (100%)	20 (100%)	40 (100%)

28 (maximum degree of psychological distress). In the version adapted by Lobo et al., the recommended cut-off is 5/6 for the total scale score. Above these values, we would be facing a probable psychiatric case.^{11,12}

Statistical analysis was performed using the SPSS program version 15.0 for Windows XP. Descriptive statistics were used for conventional data and the test of comparison of proportions or χ^2 for qualitative variables. Sample differences were considered statistically significant when P reached values under .05 ($P<.05$).

Results

Listening

Of the total sample, the prevalence of cognitive deficits when performing the MMSE was 2.5% (1 patient). More than 60% of patients had a score over 32 points.

In Group I, only 4 (20%) cases of 20 male laryngectomy patients had psychological distress (for the cut-off ≥ 6 on the GHQ-28), while 16 (80%) did not have this discomfort.

In Group II, the prevalence of psychological distress was 25% (5 patients), while 15 (75%) patients in this group did not express it (cut-off < 6 on the GHQ-28). By genders and for the same cut-off point, women had a prevalence of psychological distress of 20% versus 5% in men.

It was in Group II that we found 1 patient with cognitive deficit (after completing the MMSE). This patient was, therefore, excluded from the study and another patient was randomly introduced.

We found different preoperative psychological fears according to the type of surgery (Table 3). We compared the 3 most common types of anxiety or fear (fear of the postoperative period, no fear, and fear of not waking up) in the 2 groups, using the χ^2 test.

We observed that fear of the postoperative period appeared in 6 patients (30%) in the laryngectomy group; in contrast, in the control group, this fear appeared in 2 patients (10%). In Group II, 8 patients (40%) did not fear anything, while in the laryngectomy group the number was less, 4 patients (20%). Lastly, not waking up worried 7 patients (35%) in Group II and 2 patients (10%) in the laryngectomized group.

While there were differences between the cases of both groups, given the low number of patients in each sample,

the study was not significant enough to yield a conclusive value.

However, if we observe the subjective outcome of the sentiments expressed by the kind of fear felt, it is striking that there is no overlap between the maximum score of one or the other.

In Group II, 40% were not worried about anything and 35% were afraid of not waking up. In contrast, in the laryngectomy group, 30% were concerned about the postoperative period and 25% about losing their voice.

Psychological distress (GHQ-28) in the laryngectomy group (20%) was lower than in Group II (25%). However, the most common fears that arose in the first group (postoperative period and loss of voice) were more important than those in Group II (no fear and fear of not waking up) and would impact on the quality of life of patients.

Loss of speech was the most important stress factor to be noted in these patients.

Discussion

Our results cannot be compared with those from other studies focusing on preoperative anxiety and fear because they used different methodologies and different instruments to assess psychopathology. However, if we consider the subjective data of the feelings that the patient had before surgery, these are similar to those published in international medical literature.

In the present study, assessing the GHQ-28 data, we observe a prevalence of psychological distress between 20% and 25%, which is lower than that reported by other authors.^{5,13,14} The highest figures of preoperative anxiety (measured with the state-trait anxiety inventory [STA]) were found by Moerman et al.¹³

Overall, our results are somewhat lower than those reported by most authors. These lower prevalence levels could be justified by the inclusion and exclusion criteria used and by the method used in 2 phases (with screening to rule out cognitive disorders). The use of standardised psychometric instruments of prestige in international psychosomatic medicine publications could also have had an influence.

The presence of any surgery is a major determinant of psychological distress, especially in males. Removal of the larynx not only causes total loss of voice, but is also accompanied by other disorders among which are: anosmia,

loss of taste, decreased cough reflex, decreased capacity for physical effort, modification of life habits, respiratory, digestive and deglutition disorders, work limitation, loss of self esteem, and psychical depression.¹⁵⁻¹⁷

Loss of speech is the most important stress factor in the case of the laryngectomy group. Mc Neil et al.¹⁸ show the importance of speech in a study in which patients were given a choice between radiotherapy techniques with lower survival rates that allowed them to preserve voice, versus surgery with a better prognosis but with the loss of speech. Over 20% of individuals were willing to shorten their average life expectancy in order not to be deprived of the power of speech. In a study conducted on the quality of life in treated patients with laryngeal cancer (Nazar et al.¹⁹ and Terrer et al.²⁰), the quality of life was generally better in those who followed the organ preservation protocol (CT + RT). These two techniques have similar survival rates, but a significant discrepancy in the quality of life of patients.

In our study, only 25% of laryngectomy patients (Group I) were afraid to lose their voice. We believe that this is due to the explanation prior to surgery, during which the possible options for further communication were discussed in detail, as well as to the support of the association of laryngectomy patients, who visited patients before surgery.

Patients in the study about to undergo total laryngectomy did not present a fear of cancer. We think this is due to the aggressiveness of surgery and its possible complications. At the time of the survey, patients were more afraid of surgery and the postoperative period than of the disease itself.

Empirical studies show that the psychosocial recovery of laryngectomized patients depends on their premorbid adjustment (well-adjusted individuals in the preoperative period recover better than poorly-adapted ones) and personality (traits such as nervousness, susceptibility, inactivity, and introversion).^{14,15}

Our results should be viewed with a certain degree of caution because they are preliminary data. Similar studies

on larger samples, as well as with other control mechanisms to avoid result biasing, are needed.

In conclusion, the most striking part of the study is the observation of the subjective difference when facing surgery and its results in the 2 study groups. There is evidence that psychosocial recovery of laryngectomy patients depends on their premorbid adaptation and their personality.

The existence of adequate preoperative counselling to reduce anxiety in patients would be interesting. It would accelerate rehabilitation and improve patient quality of life.

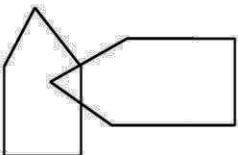
Rehabilitation should start from the time a diagnosis is made, and continue during the postoperative hospital period and post-hospital phases until full autonomy of the patient is achieved, including social reintegration and recovery of oral communication. It should be carried out by a qualified, trained multidisciplinary team that treats these patients. As is evident from patients with laryngeal cancer, treatment should include not only issues related to medical or surgical treatment, but also rehabilitation as a necessary and basic complement, to increase welfare and quality of life in patients with this disease.

We believe that all patients about to be subjected to aggressive surgery should be informed of their diagnosis and be evaluated by a psychologist to yield a psychosocial diagnosis, considering the risk factors for inadequate post-operative adaptation. In addition, the social environment of the individual should be considered, as should any networks offering support when coping with the treatment and monitoring. Assessing the need for specific therapy aimed at reducing the degree of anxiety and controlling emotional reactions and possible depression caused by the diagnosis would also be valuable.

Conflict of Interests

The authors have no conflicts of interest to declare.

Appendix A. Cognitive "Mini-Mental State Examination" (MMSE)

Paciente.....	Edad.....	
Ocupación.....	Escolaridad.....	
Examinado por.....	Fecha.....	
ORIENTACIÓN		
• Dígame el día.....fecha	Mes.....Estación.....Año.....	5
• Dígame el hospital (o lugar).....	planta.....ciudad.....Provincia.....Nación.....	5
FIJACIÓN		
• Repita estas tres palabras ; peseta, caballo, manzana (hasta que se las aprenda)	3	
CONCENTRACIÓN Y CÁLCULO		
• Si tiene 30 ptas. y me va dando de tres en tres ¿cuantas le van quedando ?	5	
• Repita estos tres números : 5,9,2 (hasta que los aprenda). Ahora hacia atrás	3	
MEMORIA		
• ¿Recuerda las tres palabras de antes ?	3	
LENGUAJE Y CONSTRUCCIÓN		
• Mostrar un bolígrafo. ¿Qué es esto ?, repetirlo con un reloj	2	
• Repita esta frase : "En un trigal había cinco perros"	1	
• Una manzana y una pera ,son frutas ¿verdad ?	2	
¿qué son el rojo y el verde ?	2	
• ¿Qué son un perro y un gato ?	3	
• Coja este papel con la mano derecha dóblelo y póngalo encima de la mesa	1	
• Lea esto y haga lo que dice : CIERRE LOS OJOS	1	
• Escriba una frase	1	
• Copie este dibujo	1	
		
<i>Puntuación máxima 35.</i> <i>Punto de corte Adulto no geriátricos 24</i> <i>Adulto geriátrico 20</i>		

Appendix B. Goldberg's "General Health Questionnaire" (GHQ-28) – Lately:

A. Síntomas somáticos.

1. ¿Se ha sentido perfectamente bien y en plena forma?

Mejor de lo habitual Igual que lo habitual Peor que lo habitual Mucho peor que lo habitual

2. ¿Ha tenido la sensación de que necesitaba un reconstituyente?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

3. ¿Se ha sentido agotado y sin fuerzas para nada?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

4. ¿Ha tenido sensación de que estaba enfermo?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

5. ¿Ha padecido dolores de cabeza?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

6. ¿Ha tenido sensación de opresión en la cabeza, o que la cabeza le va a estallar?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

7. ¿Ha tenido oleadas de calor o escalofrío?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

B. Ansiedad e Insomnio.

1. ¿Sus preocupaciones le han hecho perder mucho sueño?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

2. ¿Ha tenido dificultad para seguir durmiendo de un tirón toda la noche?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

3. ¿Se ha notado constantemente agobiado y en tensión?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

4. ¿Se ha sentido con los nervios a flor de piel y malhumorado?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

5. ¿Se ha asustado o ha tenido pánico sin motivo?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

6. ¿Ha tenido la sensación de que todo se le viene encima?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

7. ¿Se ha notado nervioso y "a punto de explotar" constantemente?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

C. Disfunción social.

1. ¿Se las ha arreglado para mantenerse ocupado y activo?

Más activo que lo habitual Igual que lo habitual Menos que lo habitual Mucho menos

2. ¿Le cuesta más tiempo hacer las cosas?

Más rápido que lo habitual Igual que lo habitual Más tiempo que lo habitual Mucho más

3. ¿Ha tenido la impresión en conjunto de que está haciendo las cosas bien?

Mejor que lo habitual Aproximadamente lo mismo Peor que lo habitual Mucho peor

4. ¿Se ha sentido satisfecho con su manera de hacer las cosas?

Más satisfecho Igual que lo habitual Menos Satisfecho que lo habitual Mucho menos satisfecho

5. ¿Ha sentido que está jugando un papel útil en la vida?

Más de lo habitual Igual que lo habitual Menos que lo habitual Mucho menos que lo habitual

6. ¿Se ha sentido capaz de tomar decisiones?

Mejor que lo habitual Igual que lo habitual Menos que lo habitual Mucho menos

7. ¿Ha sido capaz de disfrutar sus actividades normales de cada día?

Mejor que lo habitual Igual que lo habitual Menos que lo habitual Mucho menos

D. Depresión Grave.

1. ¿Ha pensado que usted es una persona que no vale para nada?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

2. ¿Ha venido viviendo la vida sin esperanza?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

3. ¿Ha tenido el sentimiento de que la vida no merece la pena?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

4. ¿Ha pensado en la posibilidad de "quitarse de en medio"?

No en absoluto Me parece que no Se me ha cruzado por la mente Claramente lo he pensado

5. ¿Ha notado que a veces no puede hacer nada por que tiene los nervios desquiciados?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

6. ¿Ha notado que desea estar muerto y lejos de todo?

No en absoluto No más de lo habitual Bastante más que lo habitual Mucho más

7. ¿Ha notado que la idea de quitarse la vida le viene repetidamente a la cabeza?

Claramente, no Me parece que no Se me ha cruzado por la mente Claramente lo he pensado

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