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A single center experience

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BACKGROUND: *In our study we evaluated from an oncological and psychological point of view, a group of patients who had previously undergone total laryngectomy and candidates for the placement of a vocal prosthesis, which allows to recover the voice using the air that passes from the trachea to the esophagus, thus vibrating a segment of the cervical esophagus. For the placement of the prosthesis and the oncological follow-up, we used the support of videoendoscopy, to exclude any recurrence or secondary tumors. At the same time, we subjected patients to a psychological evaluation before and after the implantation of the prostheses, to understand the behavioral changes in the two phases, and the possible achievement of the result of total autonomy, social reintegration, and recovery of oral communication, in the post-surgical phase.*
METHODS: *We performed a complete esophagogastroduodenoscopy and psychological evaluation on 42 patients who had previously undergone a total laryngectomy, before proceeding to the creation of a tracheoesophageal fistula and the placement of a phonatory prosthesis. After six months, we re-evaluated the same patients, both from an oncological and psychological point of view.*
RESULTS: *At the preimplantation control of the prosthesis, in endoscopy we detected three neoplastic relapses that did not allow the placement of a prosthesis, and four patients who had grade B esophagitis according to the Los Angeles classification, in the remaining 35 patients there were no complications. At the psychological evaluation, most of the patients had psychosocial disorders, with phenomena of anxiety and depression. At the check-up six months after implantation, none of the patients had relapses, and the voice prosthesis was not fully functional in a single patient. From a psychological point of view, voice recovery has significantly improved relationships both in the family and in the social sphere.*
CONCLUSIONS: *Our experience has confirmed the interesting and advantageous use of videoendoscopy in patients undergoing total laryngectomy and candidates for the placement of a tracheoesophageal vocal prosthesis, in the evaluation of neoplastic relapses and secondary lesions of the esophagus. The role of the psychologist both in the pre and post prosthetic phase is fundamental in assessing the discomfort of these patients by helping them solve some problems such as isolation and anxiety.*

KEY WORDS: Anxiety, Depression, Total laryngectomy, Voice prosthesis

Introduction

Total laryngectomy involves the complete sacrifice of the organ and the execution of a permanent tracheostomy. Total laryngectomy, which is usually performed in association with functional or destructive or bilateral depletion of the lymph nodes, involves, once the larynx is removed, the need to reconstruct the pharyngo-esophageal continuity, and then to provide for a tracheotomy. The immediate and most obvious consequence of total laryngectomy is the loss of voice. Fortunately, it is possible to return the voice to the laryngectomies by inserting a tracheoesophageal vocal prosthesis.

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In our study we analyzed the use of flexible videoendoscopy in patients undergoing total laryngectomy, candidates for the placement of the tracheo-esophageal vocal prosthesis, which is realized by creating a tracheoesophageal fistula in which the prosthesis is positioned, which acts as a unidirectional valve, allowing the recovery of the voice. Fistula can also be created after a long time after the operation, the technique has minimal morbidity and a high percentage of positive results. The most used prostheses are the so-called residential ones that are replaced on average every 5-6 months.
The use of flexible video endoscopy in oncological follow-up carefully evaluates the hypopharyngeal-esophageal-gastric district for relapses or secondary tumors, which, according to a review of the literature, can develop in this district in more than 10% of patients operated on for laryngeal neoplasms.
Endoscopy has the advantage of being able to assess the compliance of the hypopharyngo-oesophageal segment before the application of the prosthesis, excluding post-surgical scar stenosis or after radiotherapy, and to highlight lesions of the esophageal mucosa from gastroesophageal reflux in patients with hiatal hernia and / or cardial incontinence. The use of video endoscopy after the application of the prosthesis allows to evaluate the correct positioning and length of the prosthesis itself, the closure or stenosis of the fistula due to malposition or extrusion of the prosthesis, to diagnose the cause of malfunction, due to the presence of mucous granulations, of variable prosthetic infusion, of bacterial colonization of the valve mechanism, of physiological wear.
In this study we did not neglect the evaluation of the psychological aspects of laryngectomized patients, who consider the loss of the voice, due to the removal of the vocal cords, the central problem after surgery, together with the fear of being alone and excluded from any social relationship. The role of the psychologist for these patients appears fundamental, in fact he must be able to make a psychosocial diagnosis and consider the risk of a post-surgical failure of adaptation. In addition, it must include psychotherapy to reduce anxiety and possible depression.

Materials and Methods

In the years 2019-2020 we followed 42 patients, 36 males and 6 females, aged between 48 and 72 years, who underwent total laryngectomy. We performed a complete esophagogastroduodenoscopy and psychological evaluation, on all patients, before proceeding to the creation of a tracheoesophageal fistula and the placement of a vocal prosthesis.
After six months, we re-evaluated the same patients, both from an oncological and psychological point of view. Esophagogastroduodenoscopy was performed, using an Olympus video gastroscope, to exclude the presence of pathologies that contraindicated the placement of the prosthesis.
Provox2 or Bloom Singer vocal prostheses were applied to selected patients undergoing tracheoesophageal fistula. In all prosthesis placement procedures, endoscopy has been used to support the correct placement of the prosthesis, opening and functioning. After total laryngectomy and loss of voice and before implantation of the prosthesis, all patients were evaluated, regarding the psychological aspects of voice loss, with a psychological health questionnaire consisting of 26 closed-ended questions on a Likert scale. The main purpose of the questionnaire was to understand if the patient, after surgery with consequent loss of voice, had been able to relate to people, and how he evaluated the quality of his life. After six months, we re-evaluated the same patients, both from an oncological and psychological point of view.

Results

At the preimplantation endoscopic control of the prosthesis, 3 patients who had a local recurrence or secondary localization in the esophagus were excluded from the placement; in four patients it was not possible to proceed due to the presence of a hiatal hernia and / or cardiac incontinence with grade B esophagitis according to the Los Angeles classification.
In the remaining 35 patients, in whom there were no complications, 27 Provox2 prostheses and 8 Bloom Singer prostheses were applied. At the psychological evaluation, most of the patients had psychosocial disorders, with isolation even in the family environment, and phenomena of anxiety and depression. The results obtained confirmed a high percentage of patients, about 70%, who confirmed a general discomfort, especially related to the modification of their body and the inability to communicate with other people. At post-prosthetic endoscopic control after 6 months, minor complications were found, two patients presented an inflammatory reaction at the site of the fistula, resolved with medical therapy, one patient had a progressive deterioration in speech function, which endoscopic control proved to be caused by too short prosthesis.
The psychological evaluation showed a clear improvement in psychological conditions, many patients said they imagined a future quality of life certainly better than that prior to the placement of the prosthesis. Voice recovery has significantly improved relationships both in the family and in the social sphere.

Discussion

Vocal prostheses are certainly an important method to allow laryngectomized patients to improve their quality of life, both for the physical and functional aspects (voice

recovery), and for the psychological aspects (anxiety, depression). The success of the method is linked to various factors, such as the careful selection of patients, from the motivational point of view, and the oncological follow-up for the evaluation of the hypopharyngeal-esophageal-gastric district. For this last aspect we have considered the use of flexible videoendoscopy, which allows a better evaluation.

Conclusions

Our experience has confirmed the interesting and advantageous use of flexible esophagogastroduodenoscopy, in patients undergoing total laryngectomy and candidates for the placement of a tracheo-esophageal vocal prosthesis, in the evaluation of any relapses and secondary neoplastic lesions of the esophagus. Fundamental is the role of pre- and post-prosthetic psychological evaluation, as it is able to make a psychosocial diagnosis, considering the well-founded risk of poor post-surgical adaptation. In addition, the use of psychotherapy, in particular cases, can decrease the incidence of anxiety and possible depression. Surely the recovery of the voice with the vocal prosthesis can return a better quality of life to patients.

Riassunto

Nel nostro studio abbiamo valutato da un punto di vista oncologico e psicologico un gruppo di pazienti precedentemente sottoposti a laringectomia totale e candidati al posizionamento di una protesi fonatoria, che permette di recuperare la voce utilizzando l'aria che passa dalla trachea all'esofago, facendo vibrare un segmento dell'esofago cervicale. Per il posizionamento della protesi e il follow-up oncologico, abbiamo utilizzato il supporto della videoendoscopia, per escludere eventuali recidive o tumori secondari. Contestualmente, abbiamo sottoposto i pazienti ad una valutazione psicologica prima e dopo l'impianto delle protesi, per comprendere i cambiamenti comportamentali nelle due fasi, e il possibile raggiungimento del risultato di totale autonomia, reinserimento sociale e recupero della comunicazione orale, nella fase post-chirurgica.

Metodi. Abbiamo eseguito un'esofagogastroduodenoscopia completa e una valutazione psicologica su 42 pazienti che erano stati precedentemente sottoposti a laringectomia totale, prima di procedere alla creazione di una fistola tracheoesofagea e al posizionamento di una protesi fonatoria. Dopo sei mesi, abbiamo rivalutato gli stessi pazienti, sia dal punto di vista oncologico che psicologico.

Risultati. Al controllo preimpianto della protesi, in endoscopia abbiamo rilevato tre recidive neoplastiche che non hanno consentito il posizionamento di una protesi, e quattro pazienti che presentavano esofagite di grado B secondo la classificazione di Los Angeles, nei restanti 35 pazienti non si sono verificate complicanze. Alla valutazione psicologica la maggior parte dei pazienti presentava disturbi psicosociali, con fenomeni di ansia e depressione. Al controllo sei mesi dopo l'impianto, nessuno dei pazienti ha avuto recidive e la protesi fonatoria non era completamente funzionante in un singolo paziente. Da un punto di vista psicologico, il recupero della voce ha notevolmente migliorato le relazioni sia in famiglia che nella sfera sociale.

Conclusioni. La nostra esperienza ha confermato l'interessante e vantaggioso utilizzo della videoendoscopia in pazienti sottoposti a laringectomia totale e candidati al posizionamento di una protesi fonatoria tracheoesofagea, nella valutazione delle recidive neoplastiche e delle lesioni secondarie dell'esofago. Il ruolo dello psicologo sia nella fase pre che post protesica è fondamentale nel valutare il disagio di questi pazienti aiutandoli a risolvere alcuni problemi come l'isolamento e l'ansia.

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