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Original articles

Speech-language disorders and access to the speech therapists in cases of death from lip, oral cavity and oropharyngeal cancer: a retrospective study

Alterações fonoaudiológicas e acesso ao fonoaudiólogo nos casos de óbito por câncer de lábio, cavidade oral e orofaringe: um estudo retrospectivo

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ABSTRACT

Purpose: to identify the speech-language disorders and access to speech therapist during the course of the disease, the death cases from lip, oral cavity and oropharynx cancer, in Olinda residents - PE, in 2012 and 2013.

Methods: a descriptive, retrospective study whose population consisted of deaths from lip, oral cavity and oropharynx cancer, residents in Olinda, reported to the Mortality Information System and occurred in 2012 and 2013 with full assistance provided by SUS. The information was obtained from interviews with key informants in each case. To do this, the principles of Verbal Autopsy protocol were used. The percentage differences were tested by Chi-square with Yates' correction statistical test, or in cases where occurrence was less than five remarks, it was used the Fisher's Exact Test, with □ = 5%.

Results: of the 18 deaths investigated, in 55.6%, the cancer suspicion was through self-examination, diagnosis was given exclusively by medical professionals, and tongue and oropharynx appear as tumor site of major occurrence. All the cases showed any change in stomatognathic functions, 88.9% in speech, 83.3% in chewing and swallowing and 77.8% in the voice. In 27.8% there was an indication for speech therapy treatment, and of these, all reported access to a professional in the Health System.

Conclusion: these results confirm that stomatognathic functions showed changes in high proportions, and despite this, few people received indication for speech therapy treatment. However, everyone that was indicated, reported access to this professional.

Keywords: Mouth Neoplasms; Stomatognathic System; Communication Disorders

RESUMO

Objetivos: identificar as alterações fonoaudiológicas e o acesso ao fonoaudiólogo durante o curso da doença, nos casos de óbito por câncer de lábio, cavidade oral e orofaringe, nos residentes de Olinda – PE, em 2012 e 2013.

Métodos: estudo descritivo, retrospectivo, cuja população foi composta pelos óbitos por câncer de lábio, cavidade oral e orofaringe, residentes em Olinda, notificados ao Sistema de Informação sobre Mortalidade e ocorridos nos anos de 2012 e 2013, com assistência integralmente realizada pelo SUS. As informações foram obtidas em entrevistas realizadas com os informantes-chave de cada caso. Para tal, foram utilizados os princípios do protocolo da Autópsia Verbal. As diferenças percentuais foram testadas por meio do teste estatístico Qui- quadrado corrigido de Yates, ou nos casos em que a ocorrência foi inferior a cinco observações, usou-se o Teste Exato de Fisher, com □=5%.

Resultados: dos 18 óbitos investigados, em 55,6%, a suspeita de câncer foi por meio da realização do auto-exame, o diagnóstico ocorreu exclusivamente por profissionais médicos, e a língua e a orofaringe aparecem como sítio tumoral de maior ocorrência. Todos os casos apresentaram alguma alteração nas funções estomatognáticas, sendo 88,9% na fala, 83,3% na mastigação e deglutição e 77,8% na voz. Em 27,8% houve a indicação para o tratamento fonoaudiológico, e destes, todos referiram acesso ao profissional no sistema único de saúde.

Conclusão: os resultados deste trabalho ratificam que as funções estomatognáticas apresentaram alterações em proporções elevadas, e a despeito disso, poucas pessoas receberam indicação para o acompanhamento fonoaudiológico. No entanto, todos que foram indicados, referiram acesso a este profissional.

Descritores: Neoplasias Bucais; Sistema Estomatognático; Transtornos da Comunicação

INTRODUCTION

The oral cancer is known as a malignant tumor located in the oral cavity, lips and oropharynx, which has as its main features the appearance of lesions that do not heal, superficial and painless ulcerations and stains which may be whitish or reddish. Smoking, alcohol use and poor oral hygiene are important risk factors for the disease[1,2].

The oral cancer is categorized among the head and neck cancers (HNC), being the sixth position as the most common tumor worldwide. In Brazil, it is the sixth type of cancer that has more incidence, occupying the fourth position in the Northeast. This type of cancer affects over 11,000 new Brazilians every year, it is the most serious disease that affects the mouth, causing 4,891 deaths in 2010, 3,882 men and 1,009 women, and ranking third in the reasons of incidence / mortality among neoplasias[2]. In Brazil, the higher occurrence of these cancers have been reported in the tongue, accumulating 32% of cases, followed by oropharynx (18.5%) and mouth floor (12.4%), and squamous cell carcinoma is the most common histologic type[3].

The individual may have trouble at speaking, eating, severe weight loss and cervical lymphadenopathy. These changes, added to facial modification and emotional disorders caused by the disease, significantly impair the quality of life of these people. Cancer treatment is performed by means of surgery, chemotherapy and/or radiotherapy and the indication is made according to the location of the tumor[1,2,4].

In general, the treatment has side effects, immediate or delayed, which vary according to the dose and intensity of the applied radiation, leading to skin and mucosal changes, organs atrophy, and other morphological and functional changes as laryngeal fibrosis and bilateral vocal cords immobility. Chemotherapy, in turn, causes gastrointestinal and sensory changes and neurotoxicity, depending on the exposure time and plasma concentration. Voice disorders and dysphagia may be sequelae of surgical treatment and/or irradiation[5-8].

Combined treatments of radiation and chemotherapy, with or without surgical resection, generate positive results in the treatment of the disease while preserving the mouth and laryngeal structures. Some forms of radiotherapy, such as modulated radiotherapy and brachytherapy, conduct the radiation in a localized manner, allowing better preservation of exposed areas[9].

But, the preservation of these organs not always becomes a treatment that actually protects all functions. In general, specific order changes are observed in communication and swallowing[2,10]. By the choice of treatment and assistance given, the speech therapy contributes to broaden the communicative capabilities, respecting the expectations and limits of the disease[7].

Based on the above, this research aims to identify the speech-language disorders and access to speech therapist during the course of the disease, the death cases from lip cancer, oral cavity and oropharynx, in Olinda residents - PE, in 2012 and 2013.

METHODS

This is a descriptive, retrospective study with a quantitative approach, developed in Olinda, in the metropolitan area of Recife, state of Pernambuco.

This research was approved by the Ethics Research Committee of the Higher Education Foundation of Olinda (FUNESO), under the number CAAE 21394913.9.0000.5194 and under the advice of number 420224/2013.

The municipality is composed of 32 districts and a population of 397,268 inhabitants[11-13] and participates in the planning, organization and evaluation of early detection actions of oral cancer by municipal policy of oral health, enabling access to the cancer care network under the scope of the Unified Health System - SUS, through inter-municipal pact with Recife, capital city of Pernambuco[13-15].

The study population consisted of all deaths from cancer of the lips, oral cavity and oropharynx, residents in Olinda, reported to the Mortality Information System (SIM), which occurred in the years 2012 and 2013 with assistance fully held by the Unified Health System. The years 2012 and 2013 were selected for data collection as the period for the study because they were the last two years with data closed by the information system.

The information was obtained from interviews with key informants in each case identified by active search at their residences through the addresses recorded in the Declarations of Death in SIM database, in which all involved in the study agreed to participate by signing the Informed Consent (IC). The choice to work with cases of death from this cause occurred after some questions: the cases were reported in the SIM with the necessary personal data to search, and the possibility of making the study group become homogeneous, considering that all had the same basic cause of death, coded according to the International Classification of Diseases - ICD from C00 to C10[16].

By having the home addresses of these deaths, it was drawn a route for home visits according to the distribution and proximity of the cases using the feature of Google Maps® version 2014, respecting their usage policies. After the identification of the place of residence, it was sought to identify if the area was covered by the Family Health Strategy (FHS) or Community Health Workers Strategy (CHWS) and in such cases, the teams of the FHS / CHWS were put in action to collaborate with the identification of the individual and his residence.

The visit to selected addresses followed the following process: when the residence was closed, it was visited again twice, on different days and times in order to confirm the absence of residents on site. This confirmation was made through the consultation of side and front neighbors. This confirmation was made by consulting the side and front neighbors.

Of the 38 deaths from lip cancer, oral cavity and oropharynx recorded in SIM in 2012 and 2013, six had addresses non-existent or not located in the municipality registered in the death certificate (DO); in three of them, the address did not match the patient; in eight cases, the site was closed or the residence had been sold and the neighbors did not have the contact of the family; there was one refusal to answer the questionnaire; and in two cases, the patients had not had the treatment exclusively by SUS, so, they did not fit the inclusion criteria of the study, 18 cases remained to be studied.

The individuals who had other co-morbidity, reported by key informants in response to the interview, which could cause changes in communication (neurological, cognitive or sensory disorders) would be excluded, but no case fulfilled this criterion.

Data collection took place between January and July of 2014, through a semi-structured data collection instrument, developed exclusively for this study. The executor staff has been trained for the application, in meetings with experts in speech therapy for patients with oral cavity and pharynx cancer. In addition, the pilot version of the instrument has been applied in two cases so that adjustments were made to ensure clarity in the questions. To investigate the changes during the course of the disease and the indication of speech therapy, the principles of Verbal Autopsy (VA) protocol were used, which is already validated and used in Brazil and in several countries[17]. This protocol was implemented in Brazil by the Ministry of Health, in order to retrieve information, collected from one or more key informants on health data and the trajectory of the disease, in order to reconstruct the cause of death.

The interviewee, or key informant, according to the VA method, must have lived with the deceased during the circumstances or the illness that led to death, preferably, must have been the caretaker of the person who died, a member of the nuclear family, independent of the relationship, the person who witnessed the death and / or resided in the same household of the deceased, and be able to provide the information requested with clarity[17].

The results were described by analyzing absolute and relative frequency. The data processing and analysis were performed by using the EpiInfo version 3.04, and Bioestat, version 5.0. The percentage differences were tested using the statistical test Chi-square with Yates' correction, with $\alpha = 5\%$, or in cases where the event was less than five observations, the Fisher's exact test was used, also with $\alpha = 5\ \%$.

RESULTS

Of the 18 cases of death due to lip, oral cavity and oropharynx cancer investigated, 55.6% of key informants were members of the nuclear family (spouses and / or children) and in 72.2% the answers were provided by a one key informant ($p < 0.001$). In 55.6% of cases, suspicion of lip, oral cavity and oropharynx cancer happened through the implementation of self-examination ($p < 0.001$), the diagnosis only occurred by medical professionals, with tongue and oropharynx equally placed as tumor site with ratio of 33.33%; in 83.3%, a specific treatment was performed ($p < 0.001$) (Table 1).

Table 1. General characteristics of deaths from oral cancer studied. Olinda/PE, 2012-2013

Variable	N	%	x^2	p-valor (*)
Informant Key Relationship				
Spouses and children	10	55,6	22,2	p<0,001
Parents and siblings	4	22,2		
Other family members	4	22,2		
Suspected lip, oral cavity and oropharynx cancer				
Self exam	10	55,6	24,1	p<0,001
Professional	5	27,8		
Family	3	16,7		
Diagnosis of lip, oral cavity and oropharynx cancer				
Doctor	18	100,0	–	–
Other professionals	0	0		
Tumor location site				
Tongue	6	33,3	–	–
Oropharynx	6	33,3		
Other parts of the mouth and / or unspecified	6	33,3		
Specific treatment held				
Yes	15	83,3	44,3	p<0,001
No (advanced disease)	3	16,7		
Total	**18**	**100,0**		

Source: Data collected by researchers through verbal autopsy protocol
(*)Chi-square test or Fisher's exact (occurrence <5 observations) corrected by Yates with statistical significance of $p \leq 0.05$

Among the individuals who have had some specific treatment indication for cancer, isolated and / or combined, 72.2% took chemotherapy (p <0.001), 66.6% radiotherapy (p = 0.012) and 27.8% were submitted to any surgical intervention (p <0.001). All cases showed some changes in stomatognathic functions, and 88.9% in speech (p <0.001), 83.3% in chewing and swallowing (p <0.001), 77.8% in the voice (p <0.001) 72.2% in the sucking through straw (p <0.001), 27.8% in hearing (p <0.001) and 22.2% had altered cognition (p <0.001). Regarding the performance of additional procedures, it was observed that 72.2% had gastrointestinal probe (p <0.001), 5.6% gastrostomy (p <0.001) and 22.2% were submitted to a tracheostomy procedure (p <0.001). In five cases (27.80%), there was the indication for speech therapy, and all who received indication for speech therapy, referred access to this professional (Table 2).

DISCUSSION

By analyzing the data related to the information provision, there was a predominance of a single key informant and mostly spouses and children, a factor that is related to the occurrence of this type of cancer in individuals over the age of 40, married and with children[18-20]. Pernambuco and Vilela[21], in a study on mortality from larynx cancer, indicate a higher prevalence among married individuals, however it was not found reference that relates the occurrence of death to the marital status of the individual, which is a more relevant information when aspects of quality of life are evaluated.

The results found in this study reported that the occurrence of suspected cancer in the lip, oral cavity and oropharynx, occurred mostly during self-examination of the oral cavity, confirming the importance of this practice and suggesting the expansion of oral health preventive actions. Moraes highlights the importance of holding periodic examinations and educational activities directed to the population, to identify possible lesions in the early stages of the disease, as cancer in this area is usually painless and difficult to visualize[22]. However, much of the population is only attentive to any anatomical abnormalities in the mouth when the lesion is showing deformities, function impairment or bad smell in the site.

Therefore, the National Cancer Institute states that there is no scientific evidence to prove that self-examination is effective as a preventive measure against oral cancer as the general population has difficulty in discerning potentially malignant lesions of normal

Table 2. Speech-language disorders and indication for speech therapy in cases of death due to lip, oral cavity and oropharynx cancer. Olinda/PE, 2012-2013

Variable	N	%	x^2	p-valor (*)
Type of Specific Treatment (Isolated and / or associated)				
Chemotherapy	13	72,2	18,6;	p<0,001
Radiotherapy	12	66,6	11,1	p=0,012
Surgical	5	27,8	19,7	p<0,001
Changes in Communication				
Yes	18	100,0	_	_
Changed Functions After Diagnosis and / or Treatment (Isolated and / or associated)				
Speech	5	27,8	19,71	p<0,001
Speech	16	88,9	60,53	p<0,001
Voice	14	77,8	30,9	p<0,001
Chewing	15	83,3	40,3	p<0,001
Swallowing	15	83,3	44,3	p<0,001
Sucking	13	72,2	19,71	p<0,001
Cognition	4	22,2	30,8	p<0,001
Additional Procedures				
Gastrointestinal probe	13	72,2	72,1	p<0,001
Tracheostomy	4	22,2		
Gastrostomy	1	5,6		
Indication for Speech Therapy				
Yes	5	27,8		
No	11	61,1	38,7	p<0,001
No answer	2	11,1		
Access to Speech Therapy				
Yes	5	27,8		
No	11	61,1	38,7	p<0,001
No answer	2	11,1		
Total	**18**	**100,0**		

Source: Data collected by researchers through verbal autopsy protocol
(*)Chi-square test or Fisher's exact (occurrence <5 observations) corrected by Yates with statistical significance of $p \leq 0.05$

anatomic areas, but self-examination allows the view of lesions in early stages, reducing the chance of the disease's development and worsening[2].

For the study population, tongue and oropharynx appear as the main location sites of the tumor. This situation can occur because these areas are more exposed to risk factors for oral cancer, such as smoking, alcohol drinking and Human Papilloma Virus infection (HPV), favoring the development of lesions, especially in these anatomical sites[2,23].

It was possible to verify that in most cases there was a specific treatment, isolated or associated with other treatment, less than a third of the population was submitted to any surgery due to lesions in advanced stage. The therapeutic compounds which can be applied, isolated or in combination, for the treatment of oral cancer are surgery, radiotherapy and chemotherapy[2,24,25].

The indication of therapy is done according to the location, tumor clinical staging and clinical conditions of the individual, however the methods of treatment for head and neck cancer can cause significant esthetic and functional impairments[2,25].

In general, high percentages of speech-language disorders in the cases studied were observed, especially speech and chewing. It is known that the procedures adopted for the specific treatment of oral cancer can cause unwanted and / or irreversible effects to the stomatognathic system, such as xerostomia, fibrosis of irradiated tissues, necrosis of bone or cartilage tissue,

loss of teeth, trismus, dysphagia, dysphonia, changes in speech, ageusia or hypogeusia and tooth decay, affecting the functions of speech articulation and difficulty in swallowing saliva and food[19,21,26].

Researches claim that the total or partial resection of phono-articulatory structures are responsible for changing the articulation of sounds and voice that significantly affect the intelligibility of these subjects' speech. The voice assumes a doughy, dull and hypernasal feature in addition to the commitment of various speech sounds, caused by articulatory imprecision, which increased with marked trismus, impair speech[24,26].

Tumors that arise in the oral cavity have anatomical obstacles such as bones and peripheral nerves, which make the surgery difficult, leading to the choice of radiotherapy as a therapeutic conduct. However, large irradiation doses are necessary in an attempt to eradicate the tumor. Among the post-radiation reactions, there are records of jaw and teeth osteoradionecrosis, otitis media or external, trismus, fibrosis, endocrine dysfunction, laryngeal edema and even vocal fold immobility, decreased swallowing reflex and pharyngeal peristalsis, which can remain for up to two years. But the chemotherapy, indicated before or after tumor resection, and isolated / combined with radiotherapy, it can result in sucking and swallowing food difficulties, whose degree of difficulty will be determined by the type of treatment used and applied dosage, nature and extent of the necessary resection[7,26,27].

For the occurrence of a considerable decrease of tumor mass, the patient needs various doses of chemotherapeutic agents for a long time, making the blood concentration of the drugs to rise, destroying the neoplastic cells, and simultaneously the healthy ones, leading to side effects and unwanted changes in the structures responsible for communication. Mendes[23] describes several methods that can be used in the rehabilitation of oral functions that are impaired, they are speech therapy, reconstructive surgeries or the use of oral prostheses.

Regarding the execution of additional procedures, many require gastrointestinal probe, and a reasonable proportion of tracheostomy. People in advanced stage of disease or out of therapeutic possibilities, tend to lose the function of some anatomical structures, as for the size and location of the tumor, as well as the specific type of treatment held[26].

Functions such as feeding and communication are impaired, further worsening the patient's situation. Changes in swallowing, chewing and sucking are commonly reported in literature[28] and were ratified in this study, with the need to perform additional procedures that re-establish these activities, but the use of some devices ends up leading to implications in communication. Calheiros and Albuquerque highlight the importance of observing which structures the tumor has already affected, as well as the presence of devices such as feeding or tracheostomy tube, by checking the degree of commitment of feeding and communication functions[7].

After diagnosis and early treatment for lip, oral cavity and oropharynx cancer, about one-third received indication for monitoring in Speech Therapy and, in all cases in which it was indicated, there was a report of access to this professional. As stated above, the methods used for tumor treatment and the type of reconstruction used can cause musculoskeletal, cartilaginous and glandular injury in the areas of incidence of treatment, reflecting on changes in stomatognathic functions and in the face, so that most of these individuals would require speech therapy.

Because of speech-language disorders in these cases, the speech therapist has an important role in leading and guiding the cases. It is up to the speech therapist to contribute in order to maximize swallowing, adapt it and / or safely preserve the pleasure of oral feeding, as well collaborate with the patient to the restoration or adaptation of communication, oriented for the speech and / or swallowing rehabilitation process, which will use the remaining structures and compensatory functions, aimed at a greater social and family integration.

Strategies to develop communication, either through the (re) adaptation of oral language as well as the establishment of a non-verbal effective communication, ensures a better quality of life and improves interrelation with their families and staff[7,26,27].

However, it is observed that the speech therapy indication was limited to less than a third of the population studied. This occurrence may be related to advanced disease, with some individuals receiving palliative care, and therefore, some therapeutic proposals become unviable. Complications from the specific treatment, especially chemotherapy, such as immunosuppression, indisposition and side effects such as nausea and vomiting, discourage the patient to seek follow-up of other professionals involved indirectly in the treatment of the disease.

But it also stands out that this low indication can be related to the lack of knowledge of the speech therapist professional practice in the care in cases of lip, oral cavity and oropharynx cancer. Or the short supply of this professional in the Unified Health System (SUS).

Additionally, Oliveira et al.[29] claim that the use of health services is associated with the supply characteristics and the people's behavior about the morbidity and the services. The search pattern can vary according to sex, age, social groups, and the use may depend on the health problems and disease severity, specific procedures and geographic areas in which the patient or the service are[29,30].

Thus, the access to speech therapy service is also another complicating factor for the entry and maintenance of the therapy, since most users is SUS-dependent and therefore the high demand of patients, with the low supply of professionals[28,29] leads to extend the waiting time to begin the speech therapy. This situation can be worsened when the service offered is in a place distant from the patient's residence, poor conditions for displacement and the centralization of the assistance given. The speech therapy promotes facing the disease, with regard to the feeding and communication process, as well as it assists in readjusting their new conditions resulting from post-therapy. Thus, the discussion on the person's care line cancer is encouraged among the professionals involved in that public health care, in order to provide adequate follow-up in their functional rehabilitation, affecting the quality of life of the individual and his family, and in important social functions.

Additionally, it is registered the potential use of VA principles in health area researches. In the performed search, no scientific evidence with the use of this strategy in Speech Therapy was found. From the data available in health information systems, it is possible to access personal information such as name and address, and rebuild the paths of health and illness of people from retrospective studies using these principles. Thus, it constitutes a potential strategy to be used in Speech Therapy researches.

Finally, some elements that can be a methodological limitation to the study are acknowledged, such as the imprecision of the addresses registered in SIM, which made difficult to find the residences and reduced the size of the study population, and the possibility of temporal bias existence of key informants' memory, considering it is a retrospective study, whose death occurred in the years 2012 or 2013 and the data collection in 2014. However, for this study contextualization strategies of illness time and death of individuals were adopted in order to minimize the effects of temporal issue, providing greater security in data collection, as well as the years with the most current data in the Mortality Information System were used.

CONCLUSION

The results of this study allow to conclude that the tongue and the oropharynx were the main primary tumor sites found among subjects who died of this type of cancer, and that speech-language functions have changes in high proportions.

Nevertheless, few people received indication for speech therapy in the disease course, suggesting possible obstacles in the continuity of care to the person with lip, oral cavity and oropharynx cancer. However, all of those who received indication mentioned access to the professional.

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