

Retrospective Analysis Evaluating Laryngeal Cancer after Total Laryngectomy: About 21 Cases

Nadour K*, Attifi A, Touihem N, Bellatik H, Wahbi I, Lagtoubi M, Boukhari A

Department of ENT, Military Hospital Meknes, University of Medicine Meknes, Morocco

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***Corresponding author**
Nadour K

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Abstract: This is a retrospective study over a period of 5 years, from January 2011 to December 2015, which concerns 21 cases of laryngeal cancers that have undergone total laryngectomy. The average age of our patients was 60 years old, chronic smoking is incriminated in 71% of cases with an average consumption of 40 packs / year. Ethylism was found in 23% of cases. The time between onset of clinical signs and first consultation was on average 10 months. Dysphonia was the revealing sign in 76% of patients, most often associated with dyspnea. Panendoscopy with biopsy was systematically done to all of our patients, confirming the diagnosis of squamous cell carcinoma (100%), also paraclinical imaging revealed the extension of the tumor. Stage 3 TNM were most often found at the time of the diagnosis. In our studies, all of our 21 patients underwent total laryngectomy supplemented with radiotherapy for the sterilization of the tumor bed and ganglionic areas, except one patient who presented a permeation nodule. Postoperative course was grossly simple. No recurrences were noted. The deaths of two patients were deplored.

Keywords: epidemoid carcinoma, total laryngectomy, prognosis.

INTRODUCTION

Laryngeal cancer is one of the cancers of the Upper Aerobic Digestive Tracts (VADS), a frequent localization. According to the estimate of the INCa (National Institute against Cancer), it would have affected in France in 2011 about 3230 patients [1]. Total laryngectomy (removal of the laryngeal block from the hyoid bone to the first tracheal rings) associated with a concomitant concomitant cervical recess and radio (\pm chemo) therapy is considered the standard treatment for extended laryngeal cancers (classified as T3 / T4).).

The operative sequences are usually simple. 3-year survival remains high at 67% (according to the TNM UICC Classification 2009) [2, 3]. Total laryngectomy remains a heavy and mutilating gesture requiring patient preparation, vocal rehabilitation and regular medical and surgical follow-up to ensure optimal psychosocial reintegration and to watch for possible recurrence or the appearance of a second renal. Our work, which is a retrospective study of 21 cases of patients undergoing laryngectomy, aims to compare our epidemiological, clinical and therapeutic results with data from the literature and to try to trace an evolutionary profile of laryngectomized patients.

METHODS AND MATERIALS

Our work is a retrospective study over a 5-year period from January 2011 to December 2015, which examines cases of laryngeal cancers that have undergone total laryngectomy (LT). We selected 21 cases, all histologically confirmed, based on medical records of hospitalization. All patients who had undergone laryngectomy after histopathological confirmation were included in our study, and in our study we excluded patients who refused any therapeutic

act, which numbered 1: patient who went out against medical advice. The therapeutic strategy for each patient was discussed by the head and neck team at the Multidisciplinary Collaborative Meeting (RCP). Patients were given information about the different treatment options and gave informed consent for LT treatment. For the realization of our work, we elaborated a questionnaire including the various variables necessary for our study. All anamnestic, clinical, paraclinical, therapeutic and evolutionary data were reported on synoptic charts, previously written after review of literature. Ethics: For this retrospective study, no agreement was needed on the part of the institution's ethics committee. The encrypted computer database was kept on a computer of the hospital in a secure place, accessible only with a password.

RESULTS

The study of our series focused on 21 patients, all were male (100%). The average age was 60 years with extremes of 46 years and 73 years, the most representative age group was that of 50 - 60 years. All our patients were married this said a family support postoperatively will be assured. Regarding toxic habits,

15 cases of smoking intoxication were found in our patients (71%). We noted an average consumption of 40 pack-years. Ethyl intoxication was found in 5 patients (23%) and the alcohol-tobacco association was found in 5 of our patients (23%). Oral hygiene was poor in 10 patients requiring dental care (47%). The socio-economic level is low for the majority of our patients with average to low income. None of our patients were followed for chronic laryngitis or precancerous lesions and the search for Human papilloma virus was not requested in any patient. For the investigation of associated pathologies, 3 patients had gastroesophageal reflux disease, 2 patients had chronic pneumonitis related to tobacco poisoning, 3 patients were diabetic and one patient was hypertensive. No case of a history of laryngeal cancer has been reported in the families of our patients.

In our series, the average consultation time is 10 months with extremes ranging from 3 to 36 months, making the diagnosis often made late. The reasons for consultation were dysphonia in 16 patients (76%), dyspnea in 15 cases (71%) and dysphagia in 4 patients (9%), pharyngolaryngeal discomfort in 4 patients (19%) and cervical swelling. and cervical lymphadenopathy in 3 cases (14%).

On clinical examination, indirect laryngoscopy and nasofibroscopy made it possible to objectify the tumor process and evaluate laryngeal mobility. The examination of the ganglionic areas found in 3 patients cervical lymphadenopathy 6cm high in one patient and between 3 and 6cm in two patients, bilateral lymph node involvement was noted in two patients.

All our patients underwent pan-endoscopy plus biopsy under general anesthesia after pre-anesthetic consultation. The macroscopic ulcero-burgenant appearance was the most frequently encountered and the involvement of the three laryngeal stages was noted in 9 patients (42%). Panendoscopy performed in all patients did not find a second tumor localization. The histopathological study of these biopsies showed that all patients had epidermoid carcinoma.

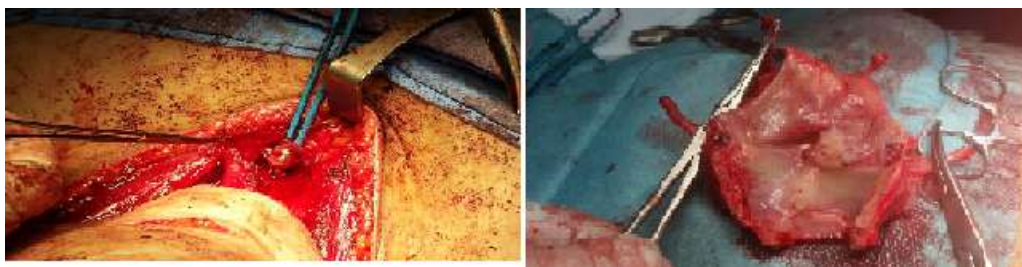
The neck and thoracic CT scan with injection of the contrast product was carried out in 21 patients making it possible to better specify the extension towards the regions difficult to exploit by the endoscopy, to classify the tumor and also to evaluate the ganglionic involvement, the three stages of the larynx were found in 9 patients (42%), affect glotto-under at 8 patients (38%) and glottic involvement at 4 patients (19%). In addition, the involvement of the pre-epiglottic space and the thyroid cartilage was noted in 5 patients. None of the patients had any invasion of the tongue base. One patient had cervical lymphadenopathy greater than 6 cm, and 2 other patients had lymphadenopathies ranging in size from 3 to 6 cm, the remaining 19 showed no evidence of ganglion involvement. Magnetic resonance imaging (MRI), a test that performs better than the CT scan for evaluating the invasion of the tongue base and oral floor, has not benefited from this examination. The chest x-ray was requested from our patients and no suspicious lung lesions were retained. Abdominal ultrasonography was performed in all patients and did not reveal abdominal lymphadenopathy or lesions in favor of liver metastases. Endoscopic exploration and imaging (CT) allowed TNM classification in our patients (board I).

Board-I: TNM Classification about our patients.

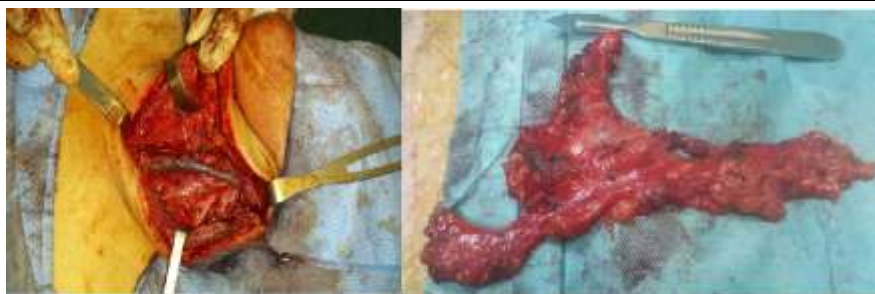
T1	0 case	N0	18 cases	M0	21 cases
T2	0 case	N1	1 case	M1	0 case
T3	15 cases	N2	2 cases		
T4	6 cases	N3	0 case		

Therapeutically, all our patients underwent total laryngectomy (picture 1) with bilateral functional lymph node dissection (zones II, III and IV) (picture-2), except for three patients with lymphadenopathies

greater than 3 cm in size, and who benefited from a modified radical lymph node dissection on the affected side.



Picture-1: Total laryngectomy



Picture-2: lymph node dissection

The anatomico-pathological study of the operative specimen, confirmed the histological type of squamous cell carcinoma in 100% of cases of which the well-differentiated type is the predominant, followed by the moderately differentiated type and finally the slightly differentiated type. The limits of excision were healthy in all our patients. Histopathological analysis of the cleaning parts showed metastatic lymph node involvement in N + patients. All the patients benefited from complementary radiotherapy after total laryngectomy allowing sterilization of the tumor bed and ganglionic areas. In general the operative sequences were simple. The psychological support is constant and the exit is authorized after perfect cicatrization of the operative wound and that everything is good (generally at d20). It should be noted that ablation of the nasogastric tube was delayed in a patient until the 26th day after the good healing of the pharyngo-tracheal fistula. Two patients presented with subcutaneous hematoma that was drained with good evolution. One patient presented with a wall infection that required prolonged antibiotic therapy with rigorous local care. None of our patients experienced local or distant recurrence of the initial lesion. The majority of our patients had minimal complications of radiotherapy such as oropharyngeal candidiasis, radiodermatitis radiomucite observed in the majority of our patients. Clinical and endoscopic monitoring is performed regularly every month for 6 months then every 3 months for 2 years then every 6 months for 5 years. A chest x-ray is systematic at 3 months and at 6 months even in the absence of a sign of appeal. In our series, the 5-year survival rate is 79% and we deplore the death of two patients (at 18 months and at 2 years). All our patients benefited from speech therapy rehabilitation with a view to voice rehabilitation in collaboration with service speech therapists, allowing laryngectomee patients to speak with another voice after the intervention. Psychological support was provided by a medical team of the psychiatric service both before and after the intervention with the collaboration of the paramedical staff (nurses, speech therapists and social worker) and addressing both the patient and his family. . Some patients had depressive-type disorders with difficulty returning to work and some difficulties with family reintegration.

DISCUSSION

Laryngeal cancer is the most common carcinoma of the head and neck [4] and accounts for 3.5% of malignant tumors diagnosed annually in the world. In the United Kingdom, it was responsible for 2190 new cases in 2005 and 800 deaths in 2006 [1]. Despite advances in radio-chemotherapy, surgery continues to play a major role in the treatment of laryngeal cancers. Although techniques for laryngeal preservation, such as endoscopic laser resection, continue to spread, total laryngectomy (TL) still remains a logical option for some selected patients in advanced pathology. This is usually epidermoid carcinoma [4].

Although the exact cause of this cancer is unknown, some risk factors are known such as smoking because the risk of larynx cancer increases up to 30 times in smokers, alcohol doubles the risk of developing cancer larynx. The combination of smoking and alcoholism may further increase this risk compared to someone with only one of these risk factors [5]. Gastroesophageal reflux causes painful burning with irritation increasing the risk of laryngeal cancer. Poor nutrition and vitamin deficiency could be a risk factor. Human papillomavirus (HPV) can also cause cancerous lesions. Mothers can transmit the virus to their children at birth. The virus attaches to the larynx and later leads to the formation of tumors called laryngeal papillomas, which can become cancerous lesions. Exposure to toxic substances: Exposure to sawdust, asbestos, and various chemicals can increase the risk of cancer. In the end vocal excesses: people who often use their voice, like singers, can develop polyps (growths) that can become cancerous if they are not removed [4]. The main symptom is dysphonia. The persistence of dysphonia, especially in a subject aged 40 or over, if he is a smoker, must have the larynx examined in the mirror to recognize the cause. The dysphonia is early and progresses insidiously. The dyspnea is later and testifies to a voluminous tumor appearing first with the effort and then continuously at rest. It is often the only sign of a carcinoma of the subglottis. Dysphagia Appears mainly in cancers of the laryngeal vestibule or very large laryngeal tumors. It is often accompanied by an odynophagia (pain on swallowing), and a reflex otalgia on the side of the tumor lesion. Cervical lymphadenopathy, apparently isolated can reveal

laryngeal cancer and must always have a complete ENT examination for cancer of the upper aero-digestive tract, especially since the subject is smoking. Rare signs Never isolated, hemoptoid sputum, foreign body sensation can lead to diagnosis [6]. Examination of the larynx Rest on indirect laryngoscopy to the mirror under good lighting. Laryngeal fibroscopy is necessary if indirect laryngoscopy is difficult. The complete check of the larynx is essential before the signs of call quoted especially if the subject is great smoker. It will specify the seat and extension, the macroscopic appearance of the tumor, the mobility of the vocal cords and arytenoids. Clinical examination is completed by palpation of cervical lymph nodes the existence of metastatic cervical lymphadenopathy worsens the prognosis and modifies the treatment modalities. Computed tomography of the larynx Allows to specify certain extensions difficult to analyze in endoscopy: the sub-glottis, the thyroid and cricoid cartilages, the pre-epiglottic lodge and the para-glottal space [4, 6]. Its sensitivity is higher than the clinical examination for cervical metastatic lymphadenopathy. The assessment is imperatively supplemented by a microlaryngoscopy in suspension under general anesthesia to make the necessary biopsies for the diagnosis and to specify the extension of the tumor. A panendoscopy allows searching at the same time a second location of the upper aero-digestive tract (pharynx, esophagus, trachea, and bronchi) very frequently associated. Investigation of pulmonary, hepatic and bone visceral metastases. PET scans are required when in doubt about visceral metastases or multiple lymph node metastases or before performing potentially mutilating surgery [7]. The general assessment appreciates the nutritional state, the respiratory functions before considering a partial laryngeal surgery, the cardiovascular, renal, hepatic state, the dental state finally [4]. At the end of this clinical and para-clinical assessment, laryngeal cancer can be classified according to the TNM classification.

Tis (tumour in situ) means the cancer is very early. It is contained in the top layer of the skin like covering of the larynx (mucosa). It has not spread into any surrounding tissue.

T1 means the tumour is only in one part of the larynx and the vocal cords are able to move normally.

T2 means the tumour which may have started on the vocal cords (glottis), above the vocal cords (supraglottis) or below the vocal cords (subglottis) has grown into another part of the larynx.

T3 means the tumour is more bulky and has caused one of the vocal cords to not move (your doctor may describe it as fixed). OR the tumour has grown into nearby areas such as the tissue in front of the epiglottis (pre-epiglottis tissues) or the inner part of the thyroid cartilage.

T4 means the tumour has grown into body tissues outside the larynx. It may have spread to the thyroid gland, windpipe (trachea) or food pipe (oesophagus).

Node (N)

Node (N) describes whether your cancer has spread to the lymph nodes.

There are 4 main N stages for cancer of the larynx - N0 to N3. N2 is split into N2a, N2b and N2c.

The important points here are:

- whether any nodes contain cancer
- the size of the node containing cancer
- which side of the neck the node containing cancer is on

N0 means that the lymph nodes don't contain cancer cells.

N1 means that one lymph node contains cancer cells on the same side of the neck as the cancer. And the node is less than 3cm across.

N2a means that one lymph node contains cancer cells on the same side of the neck as the cancer. And the node is between 3cm and 6cm across.

N2b means that more than one lymph node contain cancer cells on the same side of the neck as the cancer. But none of the nodes are more than 6cm across.

N2c means that there are cancer cells in lymph nodes on the other side of the neck from the cancer, or in nodes on both sides of the neck. But none of the nodes are more than 6cm across.

N3 means that at least one lymph node containing cancer cells is larger than 6cm across.

Metastasis (M)

Metastasis (M) describes whether the cancer has spread to a different part of the body.

There are 2 stages of metastasis – M0 and M1.

M0 means there is no cancer spread.

M1 means the cancer has spread to other parts of the body, such as the lungs [8].

Treatment can involve three means: Surgery, radiotherapy and chemotherapy.

Total laryngectomy suppresses the phonatory function of the larynx and imposes a tracheostoma. It requires the installation of a phonatory implant or the learning of an oesophageal voice. In principle, a lymph node dissection should be performed bilaterally for operated laryngeal tumors. Radiotherapy is used at a postoperative dose of 56 to 65 Gy in five to six weeks. It may be concomitantly associated with chemotherapy [6]. In the absence of lymphadenopathy, the prognosis remains better with T1 or T2 vocal cord cancer: 90% of healing at 5 years by partial laryngectomy or cobalt therapy, for cancer of the laryngeal vestibule: 60% of healing at 5 years and for subglottal cancer: 35% healing at 5 years. The presence of lymphadenopathy halves these percentages. The prognosis is often aggravated by

the frequent appearance of a second neoplastic localization of the upper aerodigestive tract and / or the appearance of a metastasis [7].

CONCLUSION

Laryngeal cancer is directly linked to chronic smoking and often associated with excessive alcohol consumption; male subjects are most often affected.

Currently infection by human papillomavirus virus plays a key role in etiopathogeny. Total laryngectomy is the basic treatment for advanced laryngeal cancers. Professional and psychosocial reintegration remains crucial in the care of the patient. The prognosis is closely linked to early diagnosis, the earlier the diagnosis, the more likely the patient is to preserve his larynx. Prevention remains the essential point to emphasize this imposes a sensibilization of the population on the danger of smoking and its incrimination in the genesis of laryngeal cancers.

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