Treatment of glottic carcinoma with anterior commissure involvement is under debate. Treatment spectrum includes surgery, open or endoscopic, and radiotherapy. Since similar results are reported in the literature, preferences depend on experience and skill of the person responsible for treatment. Our objective is the analysis of scientific data published in Medline, CancerLit, Cochrane Register, and EMBASE, between 1996 and 2007.

Twenty-five articles matched our selection criteria. None was a controlled randomized, double-blind trial, clinical guidelines, or a meta-analysis. Eleven were historical, 7 clinical trials, 6 review articles, and 1 was a Cochrane review. There is no scientific data to support recommendations for the most effective treatment in patients with squamous cell carcinoma of the anterior commissure. The available evidence is level 5, with a D recommendation grade.


INTRODUCTION

The anterior commissure (AC) is a key area for the assessment of laryngeal cancer, from both a therapeutic standpoint and in terms of prognosis and functional sequelae. Primary AC tumours are rare, but glottic tumours involving the commissure are not infrequent and overshadow both the possibilities of a cure and the functional sequelae. Its anatomical characteristics make it a vulnerable point for the dissemination of cancer, therefore its correct assessment, difficult to achieve clinically, is important to understand the true extension of the tumour, as well as to evaluate the prognosis, as its involvement is related to a reduction in local control of the illness, despite the fact that the tumour may be anatomically small. The clinical appearance of an initial stage does not necessarily translate to an incipient cancer.

There is no unanimity on the treatment of tumours affecting the AC, but several surgical options, open or endoscopic, and radiotherapy are available. The high ratio of cures in the initial stages of laryngeal cancer, including most of the tumours affecting the AC, implies an assessment of results based on survival as well as the impact of functional sequelae.

The purpose of this article is to review the current status of therapeutic options for laryngeal cancer involving the AC, comparing open or endoscopic surgical treatments and radiotherapy, analyzing the scientific evidence indices for each.
METHOD

The scientific literature published between 1995 and 2007 has been reviewed as collected in MEDLINE, EMBASE, CancerLit, and the Cochrane Register of Controlled Trials.

The search query was for randomized controlled studies comparing surgery, both open and endoscopic, and radiotherapy.

The study population was patients with a histologically confirmed diagnosis of epidermoid carcinoma of the larynx with involvement of the AC. Types of treatment: open surgery, endoscopic surgery using laser and radiotherapy.

The following variables were sought in the trials: survival, relapses, morbidity, voice quality and quality of life.

The electronic search on MEDLINE used the following categories: with abstract, between 1996 and 2007, in English, Spanish, French, Italian or German, randomized controlled study, clinical trial, double blind trial, meta-analysis, review articles, clinical practice guidelines, and with the following terms: anterior commissure, larynx neoplasm, cancer, radiotherapy, surgery, laser, transoral, endolaryngeal, hemilaryngectomy.

Description of the Studies Found

The above search criteria found 25 articles, none of which met the criteria of randomized controlled trial, double blind trial, meta-analysis or clinical practice guidelines. Those found were 11 descriptive studies, 7 clinical trials, 6 review articles and a Cochrane Review\textsuperscript{16}.

According to the Cochrane review, which studied the use of radiotherapy compared with open surgery or endolaryngeal surgery (with or without laser) for the treatment of early-stage carcinoma of the larynx (T1, T2), there is still uncertainty about the comparative benefits and the social costs of the different treatment modes. The implementation of a randomized prospective study comparing various treatment modes is difficult, as many professionals assume similar survival rates, 100% at 5 years in T1 after surgery, and 91.7% after radiotherapy, but the functional sequelae are more marked in surgery. On the other hand, the only randomized prospective study is impaired by methodological and analytical flaws\textsuperscript{17}.

According to this study, the use of endoscopic surgery reduces the functional sequelae, as well as the morbidity and the length of hospital stay, with the associated savings in resources. The implementation of a randomized prospective study measuring voice quality, quality of life, costs, complications, and morbimortality may require an international programme, due to the small number of cases at each individual institution\textsuperscript{18}.

As for the results of the Cochrane review, the recommendations given in the articles published are only based on their authors’ opinions and, therefore, have a level 5 for scientific evidence and a recommendation grade D, according to the Oxford Centre for Evidence-Based Medicine (CEBM).

DISCUSSION

The AC of the larynx is the area connecting the 2 vocal cords with the thyroid cartilage. If we were to attempt to find in the literature a widely-accepted definition of this anatomical structure, it would be a wasted effort despite the term being used in the classification of the UIICC and the AJC\textsuperscript{18}. Most of the studies aim to identify the weak points through which tumours affecting the AC can extend into other levels of the larynx (supraglottis, subglottis), cartilage or extralaryngeal structures\textsuperscript{19-22}, although not all of them agree on the role of the AC as a weak spot or barrier in cancer of the larynx. Where there is no doubt is that tumours affecting the AC behave differently from other tumours in the glottic region and require more exhaustive diagnostic procedures. A specific classification for AC in glottic tumours (AC0: no invasion; AC1: infiltration on one side only; AC2: infiltration only partially crossing the midline; AC3: infiltration of the entire AC on both sides of the midline) correlates with the prognosis for patients in terms of local control at 3 and 5 years\textsuperscript{2}. However, over and above the need to modify or increase the TNM classification, something that may be more of a complication than a simplification\textsuperscript{23,24}, experience has shown that tumours affecting the commissure are usually larger in extension than initially suspected on clinical examination\textsuperscript{23,24}.

Clinical evaluation of the lesion depending on whether it has an infiltrating or non-infiltrating morphology implies different behaviour\textsuperscript{1}. Whereas in the latter case, the tumour is usually limited to the glottic plane, in the first the tumour is often deeply invasive, reaching other planes of the larynx and behaving as a true anterior transglottic tumour\textsuperscript{1}. Studies with magnetic resonance do not improve the detection rate of infiltrating lesions obtained with the use of computerized tomography, which gives excellent anatomic detail of the larynx and the adjacent structures. The slices are normally axial, but coronal and sagittal slices are also possible with magnetic resonance.

Cartilage has a low density in computerized tomography, unless it is calcified, as usually occurs in elderly patients. In magnetic resonance it gives a high signal because of the fatty core. The mucosae of the subglottis and the AC must be no thicker than >1 mm in magnetic resonance. In magnetic resonance imaging, the vocal cords give a low-level signal (ligament), whereas the bands give an intense signal (they contain fat)\textsuperscript{25,26}.

Early endoscopic treatment of glottic tumours by CO\textsubscript{2} laser is today the procedure most commonly used in our setting, although there is still some debate on the subject. The driving force behind this technique, W. Steiner, introduced the option of fragmented resection of the tumour, with control of surgical margins, as an alternative to open surgery. In his experience, the surgeon’s skill in obtaining adequate exposure and orientation of the tumour is the key to preventing relapse\textsuperscript{27}. The use optional subjects small calibre laryngoscopes and the external manipulation of the laryngeal skeleton improve visibility, as does the partial resection of the anterior area of the ventricular bands. Resection of the anterior portion of the ventricular bands must be done with caution in view of their
importance in the vocal rehabilitation phase. The tumour must be resected with magnification and direct vision. The insertion of the vocal cord in the thyroid cartilage is completely resected together with the surrounding perichondrium. If there is sub-glottic growth under the cricothyroid membrane, if necessary, is also completely resected. In difficult cases, a biopsy must be made after 6-8 weeks to ensure there is no relapse. Steiner et al. report local control at T1a with involvement of the tumour. The cricothyroid membrane, if necessary, thyroid cartilage to ensure inclusion of the full extension perichondrium. If there is sub-glottic growth under the completely resected together with the surrounding delays and hinders healing.

In the opinion of Pearson et al., open surgery, unlike endoscopic surgery, approaches the tumour blind, as the surgeon must, before entering the larynx, cut open the skin, separate the prelaryngeal muscles and section the thyroid cartilage following anatomical references, before then resecting the tumour with worse magnification and in poorer light. According to this author, open surgery is a meticulous procedure that does not allow adaptation to the specific situation of each patient. For Pearson, the functional outcome is impaired when treatment is effected after a relapse following radiotherapy, which occurred in over 50% of his patients. Prior radiotherapy hinders histological diagnosis, as well as the imaging assessment, at the same time as it
delays and hinders healing. Partial or conservative surgery, where the goal is the resection of the lesion without the need to have a permanent tracheostome, is a safe and well-contrasted procedure. As in the case of endoscopy, it requires an awareness of the technique and some experience, something that is more and more difficult to acquire due to the greater trend towards
disposable surgery and organ-sparing techniques as well as the greater morbidity (speech and swallowing) related with it. Such an approach is indicated in those cases where, due to experience, anatomical conditions or availability, the patient is not a candidate for endoscopic treatment.

Most of the studies carried out in the last few years, on a total of 1,785 patients, into the impact of AC involvement in disease control for patients with T1 and T2 tumours treated with radiotherapy coincide. With the exception of 2 studies that did not find any relationship, the involvement of the AC is one of the poorest prognostic factors in the multifactorial analyses.

Voice quality has been extensively evaluated and the studies coincide. Radiotherapy is the procedure that has the least repercussion on voice quality.

CONCLUSIONS

There is currently insufficient scientific evidence to recommend any treatment as the most effective for AC tumours. The treatment of a patient with a cancer involving the AC must be individualized in the light of the size, extension, age, general health and anatomical conditions of the patient, as well as the expertise and abilities of the therapeutic team in the various treatment options.

REFERENCES
