The aim of partial laryngeal surgery is to perform a radical removal of cancer, reconstructing the anatomical crossing of the respiratory and digestive tracts with preservation of laryngeal function. [1-5] Despite usual favorable results, postoperative functional impairment may persist. In such cases, dysphagia and dyspnea are the most important complications and may cause recurrent aspiration pneumonia, hyponutrition, and cachexia. [1-6] The reasons for impaired swallowing recovery in partial laryngectomies can be incorrect surgery (excessive resections, loose pexies, nerve lesions), worsening of general conditions, reduced patient's compliance, and unfavorable local healing. [6] In addition to logoaedic therapy, several surgical rehabilitation procedures (cricopharyngeal myotomies, botulinum toxin injections, collagen or Polydimethylsiloxane injections, laryngeal prosthesis, etc) have been proposed to solve such problems. However, the results of these procedures are variable and persistent dysphagia/dyspnea may require permanent gastrostomy-tracheostomy or total laryngectomy, with negative functional, aesthetic, and psychological consequences for the patient. [6,7]

In case of functional failure of partial laryngectomy, we propose the use of an intralaryngeal prosthesis (NewBreez® Protip Medical, France). The NewBreez® is an intralaryngeal implantable device, designed to limit the clinical consequences of a dysfunctional larynx. It is composed of a medical silicone tube-body and a titanium cap (Figure 1). The silicone body of the NewBreez® is designed to passively fix the device in the larynx, which means no surgical attachment to surrounding tissue is necessary and the device can be easily removed if required. In addition, the tube-body preserves the patency of laryngeal lumen, thus representing an efficient treatment of postoperative laryngeal stenosis. The obvious drawback of such placement is a reduced adduction movement of the residual laryngeal structures, with consequent worsening of voice quality. The prosthesis cap protects the body lumen (thus preventing inhalation) and allows, at the same time, air passage and breathing. This valve-based system consists of an armature, fitted with a ring and connected with the silicone body, and a cap which rises after air overpressure produced during expiration and falls as a result of low pressure created during inhalation. The device is routinely used for the treatment of laryngeal dysfunction in patients affected by neurological disorders (amyotrophic lateral sclerosis, cerebral ischemia, etc). The insertion procedure lasts few seconds and is easily carried out transorally thanks to the prosthesis specific introducer, under general anesthesia. The NewBreez® is available in three different sizes of body diameter (14, 16, 18 mm). The prosthesis size is exactly selected on the basis of postoperative laryngeal diameter assessed by computed

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In particular MRI and PET have proved to be effective in the follow-up of patients submitted to local injections after laryngeal surgery [6], therefore they may be used also after NewBreez® insertion. In addition, in case of doubt about possible tumor recurrence at imaging exams, the prosthesis can be easily removed and biopsies can be performed. Severe restrictions of neck extension, relevant limitation of mouth-opening, cognitive impairment, and severe cervical hyperostosis are contraindications to NewBreez® insertion.

Even though several endolaryngeal prosthesis have been described, [7] we propose the use of the NewBreez® device in laryngeal dysfunction following partial laryngectomy and/or radiotherapy for laryngeal cancer thanks to the good results obtained in neurological patients suffering from permanent inhalation (unpublished data). A multicenter long-term study is advisable to assess the prosthesis ability to attain ab-ingestis prevention and tracheostomy closure in patients affected by inhalation/dyspnea after partial laryngectomy and/or radiotherapy.

References


