Laryngotracheal stenosis (LTS) is a non-specific term implying the presence of airway compromise involving the larynx, trachea or both. This is usually the result of scarring secondary to tracheotomy, previous surgery, radiation therapy, direct trauma, post-surgical complications or various etiologies. LTS can be categorized into three main types: traumatic stenosis, post-intubation stenosis and idiopathic stenosis. Patients with LTS require multiple procedures to restore physiological respiration and 77.1% of patients were decannulated after surgical treatment. There is no significant correlation between decannulation and gender, etiology, site of stenosis or surgery. The likelihood of decannulation is significantly associated only with age of the patient and number of the surgeries performed.

METHODS AND MATERIALS

We retrospectively reviewed the medical charts of a group of 70 patients with laryngotracheal stenosis treated at the Department of Otolaryngology, Audiology and Phoniatrics, Sapienza University of Rome from January 1998 to December 2016. Data collected for each patient included age, sex, etiology, diagnostic and therapeutic procedures, number of surgeries performed. The cause of many stenoses was idiopathic in 36 cases and post-tracheotomy in 11 cases; 6 patients presented autoimmune diseases, laryngocoelemie or laryngopharyngeal reflux. Stenoses involved the neck in 28 patients previously submitted to surgical treatment. Regardless of the site and cause of the glottis in 4 patients, the glottis and subglottis in 19 patients, the trachea in 15 patients, and the glottis and trachea in 7 patients. In order to manage laryngotracheal stenosis, a Montgomery safe-T tube (Figure 1) was used; a tracheostomy tube; a laser for excision of subglottic scar and a Montgomery safe-T tube with ring washer and plug were used. 11 patients underwent laryngotracheoplasty and 2 patients underwent laryngofissure and laryngeal keel placement. A total of 257 surgeries were performed.

RESULTS

Table 3. The table shows the results of the bivariate analysis between decannulation and other variables considered in this study. The likelihood of decannulation is significantly associated with the age of the patient and number of the surgeries performed.


c | p-value
--- | ---
Age (in years) | 0.00022
Number of surgeries | 0.78
Etiology | 0.02
Kind of surgery | 0.8
T tube implantation only | 0.9
Endoscopic surgery only | 0.8
Open-neck surgery only | 0.9
T tube and endoscopic surgery | 0.9
T tube and open-neck surgery | 0.8

In our 15 years of experience, we performed a total of 257 surgeries (mean 3.7, range 1-22) (Table 2) on 70 patients treated for LTS of various etiologies. During the same surgical session most patients underwent more than one surgical procedure (Safe-T tube implantation and CO2 laser assisted excision), as a result of the complexity of the disease (Table 1). 196 endoscopic treatments and 24 open-neck surgeries were performed with 70 T tube implantation (total 349, mean 5, range 1-29) (Table 2). 30 patients underwent a Montgomery safe-T tube and 31 laryngotracheal reconstructions. A total of 70 patients underwent a total of 24 open-neck surgeries. We performed a laryngotracheoplasty in 20 cases and laryngeal base excision with or without laser treatment in 11 cases. Most patients (n = 20, 42\%) underwent endoscopic and/or open-neck surgery (Figure 2). Only 7 of 54 patients (13%) underwent the Montgomery safe-T tube only as unique dilation treatment or was associated with endoscopic and/or open-neck surgery. Post-intubation injuries (60%) and autoimmune diseases (33%) were the most common etiologies of the lesions. The use of an endotracheal tube in patients who had the tracheotomy removed underwent more than 5 surgical procedures. Patients over 60 years of age showed a significantly lower success rate (p:0.0017) compared to younger patients (Figure 3). There is no significant correlation between decannulation and gender, etiology, site of stenosis or surgery. There is no statistically significant differences between patients undergoing open-neck surgery compared to those not submitted to this surgery and decannulation (p:0.81) (Table 3).

CONCLUSIONS

Appropriate management of LTS requires a high degree of expertise in endolaryngology and neck surgery. The choice of ideal treatment should be based on the characteristics of each patient, after evaluating the advantages and disadvantages of the procedures. In our series, we retrospecively analyzed 70 patients with LTS treated with different surgical treatments, endoscopic or open-neck surgery. In all cases, we assessed, at least once, a Montgomery safe-T tube as the patient’s treatment of choice. Safe-T tube has been used as a unique dilation treatment or was associated with endoscopic and/or open-neck surgery. The observation of the patient in 77.1% of cases (54 out of 70 patients). Our results are similar to most of those already published in literature.

REFERENCES

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