

Post-Thyroidectomy Laryngeal Diplegia in Mali: What Therapeutic Challenge?

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Submission: 📅 November 14, 2017; Published: 📅 December 12, 2017

Introduction

Post-thyroidectomy laryngeal diplegia is the most common and most feared complication [1]. It occurs following a recurrent nerve lesion in 26 to 59% of cases [1,2]. Tracheotomy was considered until 1922 as the only reference treatment [3,4]. Therapeutic approaches have evolved over time, ranging from convention altranslaryngeal or extralaryngeal therapy to endoscopic laser approaches [5]. These endoscopic methods emphasized endoscopic arytenoidectomy and posterior transverse cordotomy [4,6]. Laser transverse posterior cordotomy has proved its efficacy, illustrated by the work of Denis and Kashima and Laccoureye & Merite Drancy [4,7].

In a context of sub-medicalization in the absence of the laser, the treatment of laryngeal diplegia by endoscopy is a challenge for any ENT surgeon. We report a serie of nine cases of post-thyroidectomy laryngeal diplegia treated endoscopically with laryngeal micro-instruments (tongs and scissors). Through these nine cases we approached our difficulties by evaluating the post-operative result.

Patients and Methods

This is a retrospective and descriptive study on the exploitation of the documents of patients carrying post-thyroidectomy laryngeal diplegia collected in the ENT department of CHU Gabriel Touré from June 2010 to May 2015. We have included all the patients with post-thyroidectomy laryngeal diplegia in adduction due to recurrent nerve lesions. Causes related to intubation, laryngeal stenosis and patients with laryngeal diplegia in abduction were excluded. Our serie comprised nine patients including one men and eight women. The age of our patients ranged from 18 to 45 years with an average age of 36.22 years. Naso fibroscopy was systematic in all the patients at admission. Our therapeutic decision was guided by the operative record showing the recurrent nerve section in per operative, but in some cases we didn't have information's on the intra operative status of the nerve; then an abstention therapeutic period of nine months was the rule.

We have done a partial posterior cordotomy with laryngeal

micro-instruments (tongs and Scissors) under general anesthesia. The technic was performed according to the method of Mérite Drancy and Laccour eye [7]. Each patient received a first tracheostomy, followed by a suspension laryngoscopy. The exposure of the glottic region allowed to visualize a closing laryngeal immobility. We performed a bilateral "C" notch, laterally measuring around 4mm and 2mm in front of the vocal apophysis of the arytenoids. The notch in shape "C" interested the posterior 1/3 of the two vocal cords with respect to the arytenoids and the 2/3 previous ones. The base of the notch corresponded to the free edge of the vocal cords. The xylocaine with naphazoline 5% was applied to the notch part allowing to do hemostasis. All the patients have received antibiotherapy and corticosteroid therapy during seven days. Naso fibroscopy was performed in all post operative patients. After two days post operation the nasofibroscopy has been done. The endoscopic result did not detect any complications. At D10 the decanulation was made after the plug test. The decanulation has always been followed by a first control nasofibroscopy.

Results

We collected nine patients for five years. The duration of laryngeal immobility post-thyroidectomy was less than one week for four cases and more than one year for five cases (Table 1). All our patients have benefited a first tracheotomy. All our patients have received a transverse partial posterior cordotomy. The main complication was intra operative hemorrhage in all cases (Table 2). Haemostasis was made by compression using a compress impregnated by xylocaine 5% naphazoline. In one case, the notch was difficult to achieve. The post operative result was good in seven patients with decanulation in ten days and mediocre in a case with decanulation failure. The surgical recovery was made at 6 months to obtain a sufficient glottic pathway. The quality of the voice was average in all the cases. These results were stable with a follow-up of 10-14 months (Table 2) for all the patients. Post operative follow up was established for 14 months (Table 3).

Table 1: Status preoperative of patients.

Patients	Age /year	Sex	Etiology of Immobility	Delay in Month Since Immobility	Tracheotomy	
					Yes	No
Patient 1	45	F	Post-thyroidectomy	60 month	yes	-
Patient2	45	F	Post-thyroidectomy	12 month	yes	-
Patient 3	45	F	Post-thyroidectomy	12 month	yes	-
Patient 4	42	F	Post-thyroidectomy	Less than one week	yes	-
Patient 5	38	F	Post-thyroidectomy	Less than one week	yes	-
Patient 6	30	F	Post-thyroidectomy	Less than one week	yes	-
Patient 7	40	F	Post-thyroidectomy	Less than one week	yes	-
Patient 8	23	F	Post-thyroidectomy	12 month	yes	-
Patient 9	18	M	Post-thyroidectomy	12 month	yes	-

F: Female M: Male

Table 2: Status peroperative and postoperative of patients.

Patients	Type of Cordotomy	Peroperative Complications	Postoperative Complication	Failure	Latest News in Months	State in the Latest News
Patient 1	CTP	Hemorrhage	Neant	no	10 month	good
Patient 2	CTP	Hemorrhage	Neant	no	12 month	good
Patient 3	CTP	Hemorrhage	Neant	no	12 month	good
Patient 4	CTP	Hemorrhage	Neant	no	11 month	good
Patient 5	CTP	Hemorrhage	Neant	no	13 month	good
Patient 6	CTP	Hemorrhage	Neant	no	14 month	good
Patient 7	CTP	Hemorrhage	Neant	no	12 month	good
Patient 8	CTP	Hemorrhage	Neant	no	14 month	good
Patient 9	CTP	Hemorrhage	Neant	yes	11 month	Good after surgical recovery

Table 3: Postoperative glottic pathway surveillance.

Patients	Surveillance Glotticpathway				
	3 Months	6 Months	9 Months	12 Months	14 Months
Patient 1	Good	Good	Good	Good	Good
Patient 2	Good	Good	Good	Good	Good
Patient 3	Good	Good	Good	Good	Good
Patient 4	Good	Good	Good	Good	Good
Patient 5	Good	Good	Good	Good	Good
Patient 6	Good	Good	Good	Good	Good
Patient 7	Good	Good	Good	Good	Good
Patient 8	Good	Good	Good	Good	Good
Patient 9	Dyspnea to Exercise surgery	Good	Good	Good	Good



Discussion

The modesty of our technical platform has constituted in our case some difficulties as much surgical as in peroperative. The surgical decision less than one week for four patients explains recurrent nerve section on peroperative. This section was brought in operating report. Strobe scopy and electromyography are essentials; They make it possible to make the positive diagnosis of what is neurogenic by involvement of the recurrent nerves [1]. In other cases any information were not provided on the status of recurrent nerve, therapeutic abstention was the rule to nine months. No nerve recovery was noted in our patients. The therapeutic abstention of nine months in search of a nerve recovery is necessary to resort to alaryngeal enlargement treatment [8]. The mean duration of immobility was 10+ or -11.6 years in the Nawkaseries [9]. Dispenza [10] has observed a period of 6-12 months with endoscopic controls to objectify recovery.

In per operative the haunting was the haemorrhage due to an absence of simultaneous method of hemostasis, like the laser who can make at the same time the notch and hemostasis. Hemostasis was obtained by the application of xylocaine naphazoline 5% on the notch part. Some authors have emphasized the value of preoperative tracheotomy [5,11] for other sit is not necessary in the laser era [8]. Tracheotomy was realized in all our patients as in Francesco Dispenza's serie [10]. In our study, the tracheotomy have permitted to raise dyspnea. In contrast to Lichtenberger's approach who combining the endo-external method, the absence of oedema and hemostasis have prevented tracheotomy in some cases [12].

The endoscopic posterior partial cordotomy with the micro instruments was our treatment of choice. Endoscopic laser is the treatment of choice and should be offered as the first-line treatment [8]. In a context of sub-medicalization and the absence of the laser, the partial posterior cordotomy was realized with laryngeal micro-instruments (tongs - Scissors). Usage of those cold instruments has been reported by Lichtenberger [12]. Arytenoid perichondritis, stenosis, carbonization, granuloma formation and delayed healing were mentioned as complications by the authors [3,13]. The absence of oedema and granuloma in our serie is the fact of using corticosteroids. This absence of complications was noted by Lichtenberger [12]. We have removed the cannula of tracheotomy after ten days post operation for seven of our patients. One case of failure during the first decanulation was notified. Another surgery permitted to remove that canula. The failure of decanulation found in our serie is shared by the literature [14,15]. The dysphonia was the only after-effect for all the patients; which deduced that our notch was bilateral. An improvement of the quality of the voice was observed in the series where the notch was unilateral [8,16]. Any notion of effort dyspnea wasn't found after a follow-up from 10 to 14 months as in the series of B. Hammami with a set back of 27 months [8].

Conclusion

The management of post-thyroidectomy laryngeal diplegia counters many problems in our region. The usage of endoscopic

micro instruments enabled us to obtain promoters results with haemorrhage as the only minimal intraoperative complication. This alternative may allow in our context to reintegrate socially of our patients by removing them from a tracheotomy previously considered as definitive.

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