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Case Report

Recovery of Post Thyroidectomy Aphonia with Peri Recurrent Laryngeal Nerve Injection of Meloxicam

Abstract

Objectives: The aim of this study was to assess the effect of perineural injection of meloxicam on the recovery of vocal cord paresis due to recurrent nerve injury after thyroid surgery. A secondary objective was listed the neural inflammation as possible risk factor for delayed recovery of vocal cord paresis.

Methods: 47 years old female, two months after thyroid surgery still complaining of aphonia and dyspnea, due to vocal cord paresis bilaterally, bilaterally injection with 7.5mg of meloxicam was done for peri neural recurrent laryngeal nerve aiming to assess the effect of meloxicam on functional recovery of vocal cord.

Results: A significant improvement in the basic function of vocal cord was noticed immediately after perineural injection of meloxicam bilaterally for recurrent laryngeal nerves injury post thyroidectomy.

Conclusions: Perineural injection of meloxicam appears to be a noval and potentially promising therapeutic option for patients with vocal cord paresis due to transient recurrent laryngeal nerve injury. Further clinical studies are necessary to determine the optimal use of this approach for treatment for both acute and chronic bases.

Neural inflammation of recurrent laryngeal nerve could be possible cause of vocal cord paresis and delayed functional recovery.

Introduction

Vocal cord paresis or paralysis due to iatrogenic injury of the recurrent laryngeal nerve is one of the main problems in thyroid surgery. Although many procedures have been introduced to prevent the nerve injury, still the incidence of recurrent laryngeal nerve palsy varies between 1.5-14% [1].

This complication is generally unilateral and transient but occasionally it can be bilateral and permanent, and it may be either deliberate or accidental [1-3].

The time of recurrent laryngeal nerve function recovery ranges from several weeks to two years (mainly 6 months) [4].

In addition to the hoarseness that occurs with unilateral recurrent laryngeal nerve injury, bilateral injury leads to dyspnea and often life-threatening glottal obstruction [1,5,6].

The permanent lesion of damaged recurrent laryngeal nerve often manifests as an irreversible dysfunction of phonation and is the most common complication following thyroid surgery [1,7], ranges from 0.5 to 5% in different thyroid surgery centers and increases in case of both recurrent goiter and complete thyroidectomy due to thyroid cancer [4].

The aim of this study was to assess the effect of meloxicam injection on the recovery of vocal cord paresis due to recurrent nerve injury after thyroid surgery, and neural inflammation as possible factor for delayed recovery.

Materials and Methods

With local ethical committee approval for peri neural injection of meloxicam, and informed consent, 47 years old female, 60 kg weight 163 cm height, presented two months after thyroid surgery complaining from aphonia, dyspnea, sleep disturbance due to breathing suffocation, patient on oxygen therapy through nasal cannula during night sleep.

The patient was submitted to total thyroidectomy and the intervention did not present any particular difficulties, was carried out by an experienced specialist surgeon.

Patient had no previous other medical illnesses, her overall post-surgical recovery was prompt and smooth and parathyroid hormone and serum calcium phosphate have always had normal values.

Histological examination of the excised piece was: cystic colloid goiter.

Unfortunately, the speech was presented immediately but strongly altered on the second day with hoarseness and low pitch phonation, laryngoscopy was performed which showed paresis of the vocal cords in semi abduction bilaterally (middle position).

After fifteen days following surgery: aphonia and severe dyspnea manifested, also choking with a spontaneous recovery, triage night.

ENT specialist confirm by Laryngoscopy the vocal cord were fixed in paramedian position and recommend for monthly follow-up and the need of speech therapy twice weekly. Also the need for apnea controlled and use for Oxygen therapy at night.

Patient presented to us after 40 days of aphonia and dyspnea seeking for help, we consider injections of 7.5 mg of meloxicam peri recurrent laryngeal nerve bilaterally anterior to sternocleidomastoid muscles at the level of 1.5 cm depth, using 27G needle (19mm) (Figure 1).

Results

Immediately after the injections, the patient was able to tell her first name and a progressive improvement in the basic function of vocal cord was notice later, in which the patient can speak with clear hearable sound, and with improvement of dyspnea symptom. Total improvement in sound was noticed after 6 hours of the injection, with disappearance of her dyspnea symptoms.

We follow up the patient twice weekly keeping up same improvement in sound and breathing. Laryngoscopy normal vocal cord position and function.

Discussion

Mechanisms of injury to the nerve include complete or partial transection, traction, or handling of the nerve, contusion, crush, burn, clamping, misplaced ligature, and compromised blood supply [1,8,9]. In unilateral recurrent laryngeal nerve injury the voice becomes husky because the vocal cords do not approximate with one another. Dysphonia starting on the 2nd – 5th post-operative days is commonly due to edema, whereas traction injury of the nerve and damage of axons may result in dysphonia lasting up to 6 months. Dysphonia continuing after 6 months is commonly permanent caused by cutting, ligating or cauterization of the nerve [1,10].

Bilateral recurrent laryngeal nerve injury is much more serious, because both vocal cords may assume a median or paramedian position and cause airway obstruction and tracheostomy may be required [1,11,12].

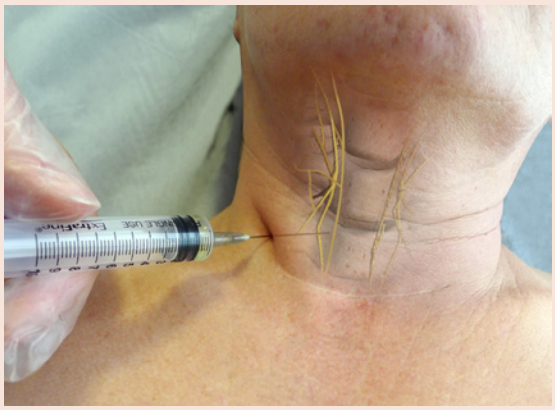

Figure 1: Injection of meloxicam peri recurrent laryngeal nerve.

Bilateral vocal cord paralysis is a serious illness requiring emergency intervention to resolve the potentially life-threatening respiratory distress. Several surgical procedures were proposed to help improve the airway and to eliminate the tracheostoma in those patients with permanent paralysis [13].

Inflammation of neural origin as suggested by some studies as Mystic transient recurrent nerve palsy after thyroid surgery suggested due to surgical manipulation [14].

Many excellent studies about vocal cord paresis were concerns regarded the improvement of phonation of vocal cord by methods related to vocal cords contour and position.

Such studies, injection laryngoplasty with hyaluronic acid gel which is a relatively safe procedure that allows for short-term improvements in objective and subjective outcome measures of vocal function in patients with glottic insufficiency, provided the surgeon remains alert to the possibility of postprocedural injection site inflammation [15].

Others, such calcium hydroxylapatite (CaHA) injection laryngoplasty in unilateral vocal fold paralysis (UVFP) patients, with repeated injection, 6 and 9 injection laryngoplasties [16].

Endoscopic coblation assisted arytenoidectomy is a new surgical method for the treatment of patients with bilateral vocal cord paralysis, which is efficient, minimally invasive and safe [17].

Laryngeal reinnervation by anza cervicalis is an effective treatment for laryngeal paralysis related to operations on the thyroid gland and laryngeal function can be improve to almost normal of the spoken voice parameters and the basic functions of the larynx [18].

Although the Excellency of these studies, all were in long time bases, and supportive for the atrophied vocal cord. but none concerns about resolving the acute injury of the NERVE in the transient period of injury less than 6month, which could be the main problem and save the vocal cord from atrophy and permanent paresis. In contrast, our approach was aim for removing of acute injury of recurrent laryngeal nerve, with simple, minimally invasive and time saving with immediate results. Also the possible diagnostic way between partial or complete injury, and the possibility to differentiate if that neural inflammation of recurrent laryngeal nerve could be the risk factor for delayed recovery of the vocal cord paresis.

Based in our experience with Meloxicam in treatment of neural inflammation as reviewed in article: long-lasting beneficial effect of periradicular injection of meloxicam for treating chronic low back pain and sciatica [19], which show significant improvement in patients cases and as marked anti-inflammatory drug, suggested in a review article on meloxicam Mobic [20], we consider meloxicam therapy trial.

The resolution of aphonia and dyspnea symptoms, and the significant and immediate improvement and return of vocal cord function suggests the potential benefit of this minimally-invasive therapy using meloxicam with possible treatment and end of the suffering of many patients with same complain, instead of leaving it for more possible chance for vocal cord function to be lost permanently

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and get atrophied, and farther the need of more complex approach to support the contour of larynx.

It also suggests the potential inflammatory origin of the recurrent laryngeal nerve injury.

Hoping that this trial would be consider as methods of therapy and open the door for more clinical trials and study regards this approach.

Conclusion

Perineural injection of 7.5 mg meloxicam appears to be potentially promising therapeutic option for patients with vocal cord paresis due to transient recurrent laryngeal nerve injury. Further clinical studies are necessary to confirm the efficacy of this approach for treatment for both acute and chronic bases. Neural inflammation of recurrent laryngeal nerve could be possible cause of vocal cord paresis and delayed its recovery.

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Patient permission is obtained and reports of clinical and laryngoscopy examination were done by specialist doctors, documented and saved.

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