



A case report on stridor

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Abstract

Bilateral vocal cord palsy is a life threatening Post-operative complication of thyroid surgery. Vocal cord paralysis may unilateral or bilateral, and could be transient or permanent. During surgery it occurs due to nerve compression, accidental dissection, retraction stretching or electrocautery. The incidence of stridor after thyroidectomy was reported as low as 0.4–14% but can be potentially fatal if left untreated. In rare cases there will be delayed manifestations of BVCP after surgery. We report a case of 45 year old female admitted in the hospital who had developed severe stridor and respiratory distress secondary to bilateral vocal cord palsy 18 days after thyroidectomy.

Keywords: bilateral vocal cord palsy, delayed manifestations, severe stridor, thyroidectomy

Introduction

Bilateral vocal cord palsy (BVCP) is a rare and life threatening post-operative complication of thyroid surgery [1]. BVCP refers to the reduced or absent function of the vagus nerve or its distal branch, the recurrent laryngeal nerve (RLN). Vocal cord paralysis may unilateral or bilateral, and could be transient or permanent [2]. During surgery it occurs due to nerve compression, accidental dissection, retraction stretching or electrocautery [3]. The incidence after thyroidectomy was reported as low as 0.4–14% but can be potentially fatal if left untreated [4]. In rare cases there will be delayed manifestations of BVCP after surgery. The pathogenesis of late BVCP is largely unknown [1].

Case report

A 45 years old female patient was admitted in the hospital with complaints of breathing difficulty and severe stridor. The past medical history revealed that she underwent thyroidectomy for hyperthyroidism before 18 days. The patient had developed dyspnea after surgery and was prescribed with Nebuliser Salbutamol/Ipratropium Bromide 100 mcg/20mcg.

Physical examination showed, she had elevated blood pressure level of 180/130 mmHg, pulse rate of 140 beats/min, air entry decreased both sides of chest and wheeze (+). GCS score was 11/15. The chest X-ray was normal. Emergency intubation was done and found to have bilateral vocal cord palsy due to abductor muscle paralysis. Otolaryngologist opinion was obtained and tracheostomy was done. Investigations on admission showed decreased haemoglobin (09 mg/dl), Hematocrit (30%), Mean cell haemoglobin concentration (31.4%) and elevated levels of WBC (12,500 cells/cu.mm), platelet count of 4.0 lakhs/cu.mm. On thyroid profile study, the patient's TSH level was increased (9.69IU/ml). Biochemistry report revealed the patient was hypocalcemia (10 mg/dl).

The patient was given with Inj. hydrocortisone, antibiotics like Inj. Cefaperazone, Inj. Metronidazole, Nebuliser Budesonide, Inj. Pantoprazole and Tab. Levothyroxine Sodium, Bronchodilators like Inj. Etophyl line +

Theophylline. Patient's general conditions improved on the 11th day. Hence discharge with proper advice on diet, physical activity, and medication.

Discussion

BVCP may occur after total thyroidectomy, and it usually manifests immediately after extubation. Stridor, respiratory distress, aphonia occurs due to the closure of the glottic aperture necessitating immediate intervention and emergency intubation or tracheostomy [5]. However, in rare cases there is a delayed, progressive development of RLN palsy, potentially leading to respiratory failure in emergency settings [1]. BVCP can be transitory or permanent, may occur in adduction or abduction, may be complete or incomplete and may recover from days to months [4].

The patient was presented to the emergency department with respiratory distress and inspiratory stridor, the most common clinical manifestation of BVCP. In our case, there was a late manifestation of BVCP was after thyroidectomy similar to that of case observed by Tobias Schulze *et al.* [1]. The medical history revealed that the patient had developed dyspnea weeks after surgery and was prescribed with Nebuliser Salbutamol/Ipratropium Bromide 100 mcg/20mcg.

Injury to the parathyroid glands was another main postoperative complication of thyroidectomy which was manifested by temporary or permanent hypocalcemia [6]. Biochemistry report showed patient was hypocalcemic, stridor secondary to hypocalcemia due to laryngospasm was another differential diagnosis in our patient. But the hypocalcaemia origin was ruled out as the hypocalcemia was not severe and the patient didn't have laryngospasm, the same was observed in the case by Alexander Edward S. Dy *et al.* [7]. In bilateral vocal-cord paralysis, initial treatment aimed at obtaining an adequate airway. Emergency tracheotomy may be required. If possible, first perform endotracheal intubation. Intravenous steroids may be beneficial in this situation. Open arytenoidectomy, bilateral posterior cordectomy, laser arytenoidectomy with posterior cordectomy, and endolaryngeal suture laterofixation are the definitive surgical options for BVCP. These procedures permit decannulation of

a tracheostomy and enlarge the airway. Therefore careful postoperative observation is very essential in patients undergoing thyroidectomy, as life-threatening complications can occur.

Conclusion

Awareness about the risk factors that leads to postoperative complications will aid to assign early interventions to prevent the undesired outcomes. Postoperative laryngoscopy should be recommended whenever vocal cord dysfunction is suspected.

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