Abstract: INTRODUCTION Bilateral vocal cord paralysis is now a common vocal cord lesion. There is total interruption of recurrent laryngeal nerve impulse resulting in paralysis of intrinsic laryngeal muscles (except cricothyroid). Bilateral abductor paralysis is mostly idiopathic. Patient usually presents with stridor and a normal voice. Vocal cords will be in paramedian position. Dennis and Kashima in 1989 performed posterior cordectomy using carbon dioxide laser where wedge of membranous vocal cord was removed just anterior to vocal process. The advantages of the procedure are bloodless, adequate airway, good voice, no aspiration, no edema, possibility for revision, short stay in hospital, rapidity and simplicity. CASE REPORT 72 Year male presented with chief complaints of difficulty in breathing and loud snoring for 40 years and acute exacerbation for past 20 days. He was misdiagnosed to have bronchial asthma and was treated for the same on and off for 40 years. 20 days back his symptoms worsened following an attack of acute upper respiratory tract infection. He presented to a hospital at his native place where he was given emergency treatment and was diagnosed as bilateral abductor paralysis and referred to us for further management. Patient was in stridor at the time of presentation for which emergency tracheostomy was done. On detailed evaluation of larynx, both vocal cords were found to be in paramedian position with narrow glottic chink during videolaryngoscopy. A clinical diagnosis of bilateral abductor paralysis was made and the patient was planned for Endoscopic posterior cordectomy with partial arytenoidectomy using coblator. The kashima's procedure was followed except Coblator was used instead of Laser. The patient was decannulated on the 5th postoperative day. His airway improved and voice restored to normal. CONCLUSION Performing Kashima's procedure using coblation technology is really promising. Advantages of this procedure include bloodless ablation, precise ablation of tissue with no collateral damage to adjacent tissue, no oedema of tissues around larynx and most importantly early decannulation. 

Keyword: Bilateral abductor palsy, coblation, endoscopic cordectomy, partial arytenoidectomy, kashima

CASE REPORT: 72 Years old male, from Madhuranthagam, farmer by occupation presented with chief complaint of difficulty in breathing for 20 days. Patient gave history of difficulty in breathing & snoring for 40 years. The quality of breathing was noisy which aggravated on exertion and lying down. Snoring was present with nocturnal awakenings. He was misdiagnosed to have bronchial asthma and was treated for the same in a nearby hospital on and off for 40 years. Patient had an episode of acute upper respiratory tract infection 20 days back, following which his symptoms worsened and the patient failed to perform daily regular activities. He presented to a hospital at his native place where he was given emergency treatment and was diagnosed to have bilateral abductor paralysis. He was referred to our hospital for further management. There was no history of voice change and aspiration. The patient didn't undergo any surgery in the past. Patient is not a known case of pulmonary tuberculosis or Diabetes Mellitus. On examination, patient was in stridor and unable to lie flat. He was tachypnoeic. Trachea was in midline, carotids felt equally on both sides and no neck nodes were palpable. EMERGENCY TRACHEOSTOMY was performed. Videolaryngoscopy showed both the vocal cords in paramedian position and the cords appeared bulky. Abduction of vocal cords was not possible on both sides. Glottic chink was narrowed. Both arytenoids were edematous.
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Chest physician and Cardiologist opinion were obtained. A clinical Panendoscopy - normal
Barium swallow - normal study
§ ECG and ECHO were normal
§ CT neck & CT chest no abnormality
§ Chest xray , xray soft tissue neck lateral view ,showed no abnormality
§ Sputum AFB was negative , thyroid function test - normal
Complete hemogram was within normal limits

INVESTIGATIONS:

DISCUSSION:

POSTERIOR CORDECTOMY:

BILATERAL ABDUCTOR PALSY:

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Post op period
Post operative period was uneventful .Sipetting was done on the 3rd post op day .Decannulation was done on the 5th post op day. Patient's airway improved & voice was good. Patient is on regular follow up with no breathing difficulty , voice normal, no aspiration and able to perform routine activities.

PATOPHYSIOLOGY:
With the first episode of bilateral vocal fold paralysis , patients may have dysphonia because the vocal cords are too far apart. However later the vocal cords can move to a medial position, and the patient may have a good voice and cough despite stridor and bilateral vocal fold paralysis . As the vocal cords migrate toward the midline, the voice progresses, while the airway worsens. Aspiration and dysphagia may or may not be present in patients with bilateral abductor vocal cord paralysis.

EVALUATION:
Evaluation of the larynx should include mucosal color and condition, stenosis or scarring of the posterior glottis, mobility of the arytenoids, muscle mass and tone of each vocal cord, length of each vocal cord and asymmetry of the vocal cords. Investigations are proceeded with endoscopy, radiology and pulmonary function test (PFT). Examination with flexible endoscopy is carried out to evaluate the entire upper airway and to measure the glottic chink. A high resolution CT imaging of the neck and mediastinum is done to rule out any external cause.

MANAGEMENT:
In case of Medical or Neurological causes of bilateral vocal fold paralysis, treatment of the cause will suffice. In iatrogenic causes where the nerve has been injured but not severed, Electromyogram (EMG) monitoring can be done to obtain an index of potential recovery. Permanent surgical procedures may be avoided till 9 months to allow time for spontaneous recovery.5

KASHIMA'S POSTERIOR CORDECTOMY:
Posterior cordectomy by Kashima and Dennis (1989) is a more conservative procedure useful in mild to moderate airway compromise. Originally Kashima used carbondioxide LASER for the procedure. The advantage of LASER being very minimal tissue bleeding. Using LASER,
an incision is made 1-2 mm in front of the vocal process of arytenoid. This frees the vocal ligament and vocalis from the vocal process. The incision is carried laterally through the width of the vocal ligament and vocalis to the thyroid lamina. Now the posterior one third of the vocal cord is removed. Since anterior two third of the vocal cord is preserved, phonation is spared. Also, the preservation of arytenoid prevents the risk of aspiration. Post operatively, apart from antibiotics, patients should be given antireflux treatment for upto 8 weeks. They can be decanulated around 6-8 weeks. The use of Coblator in the place of LASER has made de-cannulation possible within 3-4 days after the procedure.

**COMPLICATIONS OF POSTERIOR CORDECTOMY:**
- Postoperative edema
- Granuloma and scar formation
- Posterior glottic web

**COBLATOR ASSISTED POSTERIOR CORDECTOMY:**
The coblator wand used for Kashima Procedure is a MicroLaryngeal Wand Plasma Wand. It has an ultra slim wand shaft with good surgical field visualization, increased length with access to anterior commissure and bipolar ablation and coagulation with the same instrument. Another major advantage of Coblation is the reduced risk of airway fire as compared to LASER or other electrosurgical methods.

**PRINCIPLE OF COBLATION:**
An alternative current passing between the active electrodes at the tip of the device produces destruction of the target tissue adjacent to the electrodes. Coblation must fill the physical space between the electrodes with a medium rich in sodium (eg, isotonic saline or saline gel) By coblation the medium is dissociated into the free sodium ions which are responsible for the destruction of intra-cellular bonds, resulting in tissue destruction. The reaction is achieved at temperatures between 60 to 70 degree celcius with minimal collateral thermal tissue damage. Also the presence of cool irrigating isotonic saline helps to limit the amount of heat delivered to the surrounding structures.

**VOCAL CORD LATERALISATION PROCEDURES:**
- Arytenoidectomy
- Arytenoidopexy
- Cordectomy
- Reinnervation

**ADVANTAGES OF COBLATION OVER CONVENTIONAL PROCEDURES:**
- Blood less ablation
- Precise ablation of tissue
- No oedema of tissues around larynx
- Early decannulation

**CONCLUSION:**
Posterior Cordectomy is a relatively simple, and also an efficient procedure for bilateral vocal cord paralysis. It results in sufficient glottic space, without compromising the phonatory and sphincteric functions of the larynx. Coblation adds on to the benefits with lesser tissue injury, minimal postoperative edema and early decanulation. With the advent of Coblation tool, Posterior Cordectomy has been made an easy procedure and the best management for bilateral abductor paralysis.

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