INTRODUCTION

The recurrent laryngeal nerve damage in throidectomy is the most important complications in thyroid surgery. The incidence of unilateral recurrent laryngeal nerve injury is (2.3%) ***(Gonzales et al., 1991)*** and bilateral nerve injury is 0.5% ***(Bergamaschi et al., 1998)***.

The incidence of the injury had significant relationship with the secondary procedure as recurrent goiter or histological findings as multinodular goiter and failure to identify the recurrent laryngeal nerve during surgery. Major complications can be blamed on technical pitfalls, even in the hands of experienced surgeon ***(Gonzales et al., 1991).***

Recurrent laryngeal nerves are mixed nerves, since they contain both motor and sensory fibers. The recurrent laryngeal nerves supply the intrinsic muscles of the larynx except for cricothyroid muscle. The recurrent laryngeal nerve also contains the sensory fibers that supply the receptors in the region below the vocal fold ***(Garrett and Larson, 1991)***.

The recurrent laryngeal nerves arise from the vagus nerve at different levels at on either side. The right recurrent laryngeal nerve arises where the vagus nerve crosses the first portion of subclevian artery. The left recurrent laryngeal nerve leaves the vagus nerve where the vagus crosses over the arch of aorta ***(Cody and Rossi, 1991)***.

Recurrent laryngeal nerve injury may be transient or permanent transient laryngeal nerve injury may occur from light crushing or stretching and the permanent injury from division or ligature. Damage is

more common where normal anatomy is distorted when the operation is undertaken, for example in multinodular goiter, recurrent or malignant goiter ***(Keen, 1987)***.

The recurrent laryngeal nerve injury may be unilateral or bilateral. In unilateral injury inadequate voice is the most chief complaint of the patients. The voice is characterized by hoarseness, and rapid air escape such patient sometimes complains of being short of breath. In bilateral nerve injury patient often can talk but frequently have dyspnea and difficulty in breathing ***(Clark, 1997)***.

Diagnosis of unilateral or bilateral injury of recurrent laryngeal nerve is reached by history and physical examination.

Careful history will often make the difference between a correct diagnosis and inability to make one. Such information as the time of onset, periodicity, degree of severity, varying effect and the patient's own impression as to what is the cause of his disorder may be very helpful. Physical examination must be done by otolaryngologist who needs to do a thorough examination giving attention to the larynx and the vocal cords ***(Tucker, 1981)***.

Management includes investigation which must be done. Indirect laryngoscopy which is utilized for examination of the vocal cords by which the examiner is able to see the mobility of the vocal cords.

If the examiner is unable to see the vocal cords well with indirect laryngoscopy, three other instruments are available. The first is the pharyngoscope which enables the examiner to see the vocal cords with

bright illumination and magnification. The next method is the fiberoptic laryngoscope. This is a flexible and coherent bundle of glass fibers that is passed through the nose after topical anaesthesia on the tip, after the tip is passed through the nose, behind the soft palate, and down into the hypopharynx, it is curved into the larynx so that the vocal cords may be examined ***(Dedo, 1990)***.

In recent years, the operating microscope has been used to enhance the surgeon's view of the vocal cords by providing magnification and depth perception ***(Dedo, 1990)***.

Treatment of the recurrent laryngeal nerve injury may be conservative or surgical treatment.

Conservative treatment in which we allow a sufficient period of time to elapse ***(Tucker, 1991)***.

It is wise to wait for 9 months before accepting the fact of permanent damage ***(Keen, 1987)***.

Surgical treatment is available to the surgeon in permanent damage three general approaches are available in unilateral recurrent laryngeal nerve injury which include, Teflon (Gelfoam) injection, surgical medialization and re-enervation of the vocal cord ***(Tucker, 1981)***.

In bilateral vocal cord palsy the air way may be obstructed usually necessitating tracheostomy ***(J'ri et al., 1998)***.

The second method of treatment is vocal cord lateralization and the third method is vocal cord reinnervation *(Tucker, 1991)*.

The most recent method in the treating vocal cord paralysis is laser surgery with either Co_2 or KTP laser which is well absorbed by red pigment such as hemoglobin.

Laser can be used to perform an arytenoidectomy. The technique is to vaporize the arytenoid cartilage on one side *(Duncovage, 1991)*.

Other measure may be undertaken after the surgery called adjunctive measures which include voice therapy *(Karnel, 1991)*.