

THE HAZARD OF INDUCING GENERAL ANESTHESIA  
BEFORE CORRECTION OF AIRWAY OBSTRUCTION

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The patient with an airway obstruction is at great risk for general anesthesia and the preoperative diagnosis of an airway problem should alert anesthetist to a potentially life threatening situation.

Case Reports

Case 1-A 62 year - old male was admitted to the hospital because of increasing difficulty in breathing due to supraglottic obstruction caused by tumor. He was brought to the operating room without premedication for emergency tracheostomy, the patient was extremely restless and dyspneic blood pressure was 120/70 mm hg, pulse 82/min, to control restlessness, oxygen was administered by face mask, after giving atropine 0.5 mg and pethidine 50 mg intravenously anesthesia was induced with fluothane and oxygen in a magell system, accompanied by considerable respiratory obstruction, the patient became cyanotic and the pulse became bounding. Because the larynx was difficult to visualize, tracheal intubation was not accomplished after several unsuccessful attempts. Tracheostomy was attempted with minimal delay and resuscitative efforts were effective and the patient's condition markedly improved.

**Case 2:**

A 26 year - old 58 Kg female was to undergo partial thyroidectomy under general anesthesia. She had a two years history of difficulty in breathing .That was attributed to the thyroid enlargemt. Abnormal physical finding- consisted of moderate thyroid enlargement in the right lobe, Thyroid function tests were normal T4 (RIA) 5.3  $\mu$ g. T<sub>3</sub> RU 31. 4 % FTI 107 chest X- ray demonstrated no tracheal deviation and on indirect laryngoscopy the larynx appeared to be normal. So it was decided that the thyroid enlargement was due to nontoxic nodular goiter. After premedication with 0.4 mg atropine and 50 mg pethidime, anesthesia was induced with thiopental 250mg and 70 mg of succinylcholine, before endotracheal intubation the adequate ventilation via a face mask became difficult to achieve, trachea was intubated with difficulty with a 4.5 mm masal tube, A tracheostomy was performed and the respiratory distress resolved following tracheostomy. The operation was cancelled, bronchoscopy and laryngoscopy were performed, the larynx appeared normal but on bronchoscopy a circular stenosis of trachea about 3 cm below vocal cords was noticed and trachea was in midline and was not compressed due to thyroid mass.

**DISUSSION:**

Establishment and maintenance of airway patency constitute a prime responsibility of the anesthetist(2) and the airway obstruction is a potential problem to be anticipated during the induction of anesthesia. General anesthesia will exacerbrate extrinsic airway compression in at least three ways (4).

First during general anesthesia lung volume is reduced about 500 to 1500 ml, this is secondary to the decrease in inspiratory muscle tone. Second the bronchial smooth muscle is relaxed during general anesthesia, the compressibility of the large airway increases and a decrease in expiratory flow rate ensues, Finally muscle paralysis eliminates the movement of the diaphragm in a caudal direction seen during spontaneous respiration. The normal transpleural pressure gradient, which dilates the airway during inspiration, will be reduced, the caliber of the airway will be decreased and the effect of extrinsic compression will be increased. Patient with chronic respiratory obstruction (2) may become restless, disoriented because of concomitant hypoxia and hypercapnia and administration of narcotic or sedative drugs which may compound the problem by superimposing respiratory depression as illustrated in the case 1, the importance of careful review and evaluation of patients prior to anesthesia is illustrated in the unusual, case No 2,. It is becoming increasingly obvious that it is essential for the physician, surgeon and anaesthetist (3) to understand the functional changes in the lungs and their significance from the point of view of diagnosis, therapy and surgery. Almost every technique the anaesthetist employs and almost every drug administered has some effect on respiration. They should be assessed by careful clinical examination of the patient combined with accurate history taking. This was supplemented by various special pre-operative investigations such as bronchoscopy, pulmonary function tests, etc. It must also be remembered that carcinoma of the larynx and pharynx can be extremely friable and during

attempt of intubation, obstruction of the airway may result from bleeding or dislodgement of a tumor fragment which then mechanically occludes the glottis, trachea, or a main bronchus or precipitates severe laryngospasm or bronchospasm. Similar problems in airway may be encountered in patients with fractured mandibles, wired jaws, temporomandibular joint stenosis and in the presence of carcinoma of the larynx or pharynx and in the (1) seriously ill, senile or moribund patients. In all such instances it is necessary to insure a patent airway either by tracheostomy prior to the induction of general anesthesia or by intubation of the trachea while the patient is awake (1). It is a most useful technique with a high degree of patient acceptability and a safe method of intubation where problems are anticipated during the induction of anesthesia.

Preparation for endotracheal intubation in such cases should be carried out in the operating room (2) with the surgeon scrubbed and ready to perform emergency tracheostomy. Even in the most skilled hands it may be impossible to pass an endotracheal tube.

#### SUMMARY:

Preoperative diagnosis of an airway obstruction should alert the anesthetist to a potentially life-threatening situation. Intubation of the trachea while the patient is awake or tracheostomy under local anesthesia is a most useful technique and a safe method in induction of anesthesia where problems are anticipated during the induction or general anesthesia.

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