Endo-Tracheal-Anaesthesia at Bir Hospital, Kathmandu, Nepal.

by

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Description:- It is nothing but inhalation anaesthesia conducted when an intra-tracheal catheter is in situ and anaesthesia is maintained to the patient with major anaesthetic agents either by open, semi-open, semi-closed and closed technique.

History:- Vesalius in 1542 passed a tube into the trachea of an animal. In 1788 C. Kite of Gravesend oral and nasal intubation done for resuscitation of apparently drawn man. Kuhn in 1902 improved the tube by making it flexible to pass the tube in trachea. In 1912 Kelly of Liverpool, Elsberg and other applied this technique to man. Chevalier Jackson published a book on this subject in 1907 and popularised intubation. In Majill and Robothom during the first world war as an anaesthetist to Sir Harold Gillis more popularised this technique in different ways for plastic surgery. Permit me, gentle men to add here that I first introduced this technique at Bir Hospital, Kathmandu in 1955. Here, my chief aim to-day is nothing but to show a survey of some selected 1000 cases where an endo-tracheal tube was passed and anaesthesia was maintained through Semi-op and Draw-over method.

Case-Record:-

Number of sex and age of the cases noted:-

Sex:- Male.....	725	Age:-Between 1 - 5 yrs. -	80
Female.....	275	" 5 - 20 yrs. -	250
		" 20-50 yrs. -	570
Total:-	<u>1000</u>	50 yrs. above	<u>-100</u>
		Total-	1000

Nature of cases and operation:-

- (1) 200 cases in operation of head and neck
- (2) 20 cases in thoracic surgery
- (3) 464 cases in abdominal surgery
- (4) 50 cases in major gynaecological surgery
- (5) 40 cases in cases where free-airway was desired
- (6) 226 cases when controlled respiration was desired

Total:- 1000

Apparatus used:-

- (1) Endo-tracheal tubes form No = 00 to No = 10
- (2) Macintosh Laryngoscope with blades of 3 sizes
- (3) Magilli intubating forcep
- (4) Angle- piece and connector
- (5) Lubricant
- (6) Oxford-inflating ballows with a rubber tube connected to glass bottle with holes on the lid.
- (7) Ether masks.
- (8) Air-ways of different sizes
- (9) Hypo-dermic syringes

Anaesthetic agents used:-

- (1) Atrobin sulph gr 1/100 to gr 1/50 as premedication
- (2) Triline
- (3) Muscle-relaxant such as scoline flaxedil and tubarine
- (4) Ethyle chloride
- (5) Ether (Anaesthesia)
- (6) Pentothal and cito-unarcon
- (7) Oxygen gas.

Technique used:-

- (1) Nasal intubation under direct vision
- (2) Oro-tracheal intubation with the help of Laryngoscope

Method:- The patient was anaesthetised up to 3rd. stage 2nd or 3rd plane in most cases by volatile agents and in some cases with short acting barbiturates as pentothal I.V. and musclerelaxants available till all the muscles were relaxed and specially the jaw muscles were fully relaxed. Then a pillow of 2 to 3 inches height was placed below the atlanto-occipital joint of the head. The blade of the laryngoscope was introduced inside the mouth cavity to find out the land-mark of the (1) base of the tongue (2) Uvula (3) Epiglottis. By titting the blade forward the epiglottis was drawn away and vocal cord made visible. Thus I could easily pass a tube inside the trachea. This technique was not so difficult to me but slight practice was required during my training period. The same technique was followed in nasal intubation also. To simplify the technique the vocal cord was made easily visible by pressing on the thyroid cartilage of the neck in addition to the above mentxaioned technique.

The following complications were detected:-

- (1) In 10/ of the cases, kinking of the tubes read to respiratory obstruction
- (2) In 25/ of the cases separation and slipping of the connecting tube
- (3) In 5/ of the cases mal-adjustment of the small tune made the patient lighter in anaesthesia,
- (4) In 10/ of the cases injury to nose, mouth, pharynx and vocal cord.
- (5) In 10/ of the cases blocking of the tube with mucus secretion.
- (6) In 10/ of the cases the tube passed in right bronchii leading the anaesthesia un-satisfactory and cyanosis.
- (7) In 1/ of the cases dipping of the out let connecting rubber tube in the anaesthetic agent e.g. ether occasionally and thus hampering the work of bellows.
- (8) One patient died instantly on table after the patient came round but soon after the tube was taken out of the trachea. Most probably the death must have been due to vago-vegal reflex. No path. post mortum done. N. B. All above mentaioned complications were tackled successfully in time.

Conclusion:-

A brief survey of 1000 cases anaesthetised at Bir Hospital with available materials and data is described here. The technique that I followed were (1) Semi-open method with ether and mask-Here ether mask was placed over the free end of the tube. (500 cases noted) (2) Draw over method with oxford inflating bellows -Here tube was connected to the bellows and the bellows to the glass bottle filled with anaesthetic agent through a rubber tube. (500 cases noted).

In the first method it was a bit difficult task to me as constant watch, observation and experience was required to know the stage and depth of anaesthesia. In the second method it was easy, safe and portable as the rubber bag helped me to know the stage and depth of anaesthesia. It also helped a lot for resuscitation and for giving controlled respiration. There is a well known sensible saying about intubating technique —" Intubation should never be attempted unless there is indication for it." I agree to it. Anaesthesia for major or minor cases lasting for half an hour except for its indication can easily be managed without intubation but for major cases where more time is required the technique of intubation is preferable to me as it facilitates to maintain the various stages of anaesthesia, ready help for resuscitation and good relaxation and avoid the grumbling of the tired surgeon. Gentle men, you can very well imagine the difficulties that may come across while running the department with handicap of modern scientific appliances and accessories. Last but not the least, I appeal to the teaching institutes concerned to lay more stress on their practical field in anaesthesiology during their training period so that the demands may be fulfilled to some extent. A short or long term course is recommended to those who want to specialise the subject. As an emergency measure I request the young medical graduates to be familiar and work with the experienced and qualified senior staffs so that the demands of Tarie and Hill Station Hospitals can be solved in Anaesthesiology at Nepal.

Gentlemen ! I may add here that anaesthesia section in other parts of the advanced Scientific World has become a separate unit with full responsibilities and facilities. The anaesthetists of to-day not only work in operation theatre but in indoor wards including Intensive-Care Units and private practice also.

Thank you all.
JAI-NEPAL

(This paper was read by Dr. B. B. Singh senior anaesthetist to Bir Hospital under His Majesty's Government on the occasion of 3rd All Nepal Medical Association Conference at Kathmandu 15th Feb. '67.)

Reference:-

- (1) Lee's A Synopsis of Anaesthesia (Latest edition 1964)
- (2) John Adriane's Anaesthesia.
- (3) Evans' Modern practice in Anaesthesia.
- (4) The journal of Indian Society of Anaesthetists.
- (5) Bir Hospital, operation theatre registered book.