

# ENDOSCOPY OF THE UPPER RESPIRATORY TRACT

Pages with reference to book, From 121 To 123

M.H.A. Beg ( E.N.T. Department, K.V. Social Security SITE Hospital, Karachi. )

## Abstract

Two hundred cases were examined by the fiberoptic Nasopharyngoscope in the department of Otolaryngology of the K.V. S.S. Hospital, Karachi. It seems to be of great diagnostic value in the lesions of nasopharynx, posterior part of the nose and the larynx particularly when it is not possible to examine them indirectly. The indications for nasopharyngoscopy were varied and ranged from headache to anosmia. The examination was found to be very useful in patients with malignant lesions following radiotherapy and surgery (JPMA 31:121, 1931).

## Introduction

The nasopharyngoscope is an instrument designed for a complete examination of the upper respiratory tract. It provides a detailed view of the nasopharynx, anterior part of the nose and larynx. For follow up examination of the malignant lesions after surgery and radiotherapy, it has proved very helpful. Patients with sensitive throats and anatomical variations, infants and bed ridden people are good indications for the use of the fiberoptic flexible instrument.

## Historical Aspects

With the progress of science, new instruments have been introduced in every field of medicine. Lifting the tip of the nose with the sun as the light source to view the cavity was the method of examination in early days. Thudicum's spring action speculum obtained a better view of the nose. This was followed by Killian's (1896) "Median Rhinoscopy". Hirschmann (1903) used endoscopy to see the maxillary antrum in 1901 followed by valentine (1903) who went into the nasopharynx calling it 'Salpino-scopy, Huizinga (1969) mentions Kussmaul's first introduction of a tube into the gullet of a sword Swallower over a century ago. Indirect laryngoscopy was introduced in 1807 (Ward et al., 1974) with a mirror and a candle. The candle was later replaced by an oil lamp and Incandescent light.

A renaissance came with the discovery of the fibre optics. Hopkins Nasal endoscopes were used by Messerklinger (1978) and ward et al., (1974) for the nasopharynx and Larynx. Silber-man introduced one in 1976 and Ikeda brought in the fibre optic bronchoscope in 1970. Intubation laryngoscopes were used by anaesthetists (Davis, 1973). This was too wide with a diameter of 6.25 mm for use in examining the nasal cavity. The fibre optic nasopharyngoscope has proved to be a very useful instrument in the field of otolaryngology.

## Material and Methods

Two hundred patients were examined with the Olympus nasopharyngoscope in the department of Otolaryngology of K.V.S.S. SITE Hospital, Karachi. The instrument has a tip diameter of 4.4 mm and a length of 41 cm. The depth of view attained is from 5 to 50 mm. The tip can be deflected to 150 degrees upward and 90 degrees downward. The patient sits in a chair with a head rest. Both the nostrils and the throat are sprayed with 4% Lignocaine surface anesthetic. After waiting for about five minutes the instrument is introduced into one nostril and the nasal cavity is examined. The nasopharynx and larynx can be examined at the same time. It can also be passed through the mouth into the nasopharynx and larynx. A better view for a good comparison of both sides is obtained by this route. The tympanic membrane can also be examined by this instrument.

## Results

The indications and results of the nasopharyngeal examination by the fiberoptic nasopharyngoscope are listed in table I and II respectively.

Table I: Indication for Endoscopy of Upper Respiratory Tract Modified from Jaumann, 1978.

---

Nasal Obstruction

Persistent Rhinorrhoea

Unilateral Conductive Hearing loss

Loss of Smell

Headache

Suspected Cervical Metastasis

Trauma

CSF Rhinorrhoea

Platopharyngeal incompetence

Hoarseness of Voice

Aphonia

Dysphagia

Lump in the Throat

Post radiation or Post

Surgery Follow up.

---

Table II: Break up of Endoscopies

Normal Examination	.. ..	110
Nasal Polyps	.. ..	3
Vasomotor Rhinitis..	.. ..	3
Deviated Nasal Septum	.. ..	5
Atrophic Rhinitis	.. ..	5
Allergic Rhinitis	.. ..	2
Sinusitis	.. ..	2
Antochoanal Polyp	.. ..	4
Adenoids	.. ..	2
Encephalocoele	.. ..	1
Angiofibroma	.. ..	1
Chronic Laryngitis	.. ..	7
Carcinoma Valecula	.. ..	5
Polyp (Vocal Cord)..	.. ..	4
Hematoma Vocal Cord	.. ..	2
Nodule Vocal Cord	.. ..	2
Chronic Pharyngitis	.. ..	2
Tuberculosis Vocal Cord	.. ..	2
Carcinoma Vocal Cord	.. ..	2
Intubation Granuloma	.. ..	1
Paralysis of Left Vocal Cord..	.. ..	1
Laryngomalacia	.. ..	1
Carcinoma Pyriform Fossa	.. ..	2
Carcinoma Tonsil	.. ..	1
Fungus Auditory Meatus	.. ..	2
Post radiation or Post	.. ..	29
Surgery follow up		
<b>Total</b>		<b>200</b>

### Discussion

The nasal septum and the inferior turbinate are first to be viewed through the nasopharyngoscope. As

the instrument is flexible it can easily by-pass obstructions and deviated nasal septum and Polypi. It can also be introduced below the inferior turbinate. The opening of the nasolacrimal duct may not always be seen because the space is too short. According to Holden (1978) rigid Scopes with different angles of view are better for this examination. The middle meatus is viewed very easily along-with the maxillary antrum. It is also possible to see the superior turbinate and the sphenoid area. The Eustachian Tube and nasopharynx can now be examined in detail. By bending the tip down the palate comes in view. After passing through the velop-harangeal Sphincter the epiglottis and Valecula are encountered. A heavier local anaesthetic permits the examination. The maxillary antrum can be seen through an antrostomy (Draf, 1978), of subglottic area and the trachea by passing through the vocal cords with the advantages of having a complete examination in patients of all age groups and with anatomical variations as prominent teeth, narrow arched palate and infantile epiglottis, the nasopharyngoscope outweighs the disadvantages of not being able to take a biopsy simultaneously or at times the diameter being still too large for infants. It is indeed a very useful introduction in the field of nasolaryngology.

## References

1. Davis, N.J. (1973) A new fiberoptic laryngoscope for nasal intubation. *Anesth. Analg.*, 52:807.
2. Draf, W. (1978) Therapeutic endoscopy of paranasal sinuses. *Endoscopy*, 10:247.
3. Hirschmann, A. (1903) *Uber Endoskopie der nase und deren Nebenhohlen.* Arch. Laryng. Rhin. (Berlin), 14:195.
4. Holden, H.B. Fiberoptic techniques in otolaryngology, in recent advances in otolaryngology. Edited by Bull T.R., Ransome J., Holden H.B., London, Churchill Livingstone, 1978, p. 194.
5. Huizinga, E. (1969) On oesophagoscopy and sword-swallowing. *Ann. Otol. Rhinol. Laryngol.*, 78:32.
6. Ikeda, S. (1970) Flexible bronchofiberscope. *Ann. Otol. Rhinol. Laryngol.*, 79:916.
7. Jumann, M.P. and Sterner, W. (1978) Endoscopy of nose and nasopharynx. *Endoscopy*, 10:240.
8. Killian, G. (1896) *Zur Anatomie der Nase menschlichr Embroynen.* Arch. Laryng. Rhinol. (Berlin), 4:1.
9. Messerkilinger, W. (1978) *Endoscopy of the nose.* Urban and Schwarzenberg Munich, p. 2.
10. Silberman, H.D., Wilf, H. and Tucker, J.A. (1976) Flexible fiberoptic. *Ann. Otol. Rhinol. Laryngol.*, 85:640.
11. Valentine, A. (1903) *Die Cystoskopische Untersuchung des Nasen rachen oder Salpmgoskopie.* Arch. Laryng. Rhinol. (Berlin), 13:410.
12. Ward, P.H. Berci, G. and Calcaterra, T.C. (1974) Advances in endoscopic examination of the respiratory system. *Ann. Otol. Rhinol. Laryngol.*, 83:754.