



The Master Surgeon Trust

Flexible/ Fibreoptic Nasendoscopy

A guide for junior doctors

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Background

Initially devised in the 1930's, current fiberoptic/ flexible nasendoscopy systems are lighted, flexible, provide a 2-way articulation, have the capabilities for direct line viewing with photo and video capabilities, and can have a distal diameter as small as 2 mm.

Indications

a) Distal Nasal:

- Recurrent epistaxis.
- Suspected nasal polyposis.
- Chronic sinusitis.
- Suspected malignancy.

b) Nasopharyngeal:

- Suspected nasopharyngeal malignancy.

c) Oral-pharyngeal / hypopharyngeal:

- Foreign body ingestion e.g. fish bone.
- Dysphonia.
- Dysphagia.
- Odynophagia.
- Laryngomalacia.
- Obstructive sleep apnoea.

d) Miscellaneous:

- Pre-operative prior to thyroidectomy.
- Post-operative assessment of pharyngeal graft.
- Nasogastric tube placement proving cumbersome/ patients requiring care when inserting (for example in laryngectomy patients with friable jejunal grafts).

Contraindications

- Epiglottitis: By inexperienced personnel, due to induction of laryngospasm and thus further airway compromise.
- Croup/ paraglottic disease: Only to be performed if symptoms suggest anatomic or congenital abnormalities.
- Relative contraindications include: Coagulopathies (if a risk of significant bleeding with minor trauma occurs during the procedure), craniofacial trauma (benefits should be weighed against the risks due to potential exacerbation of nasopharyngeal injuries).

This procedure is otherwise considered a benign procedure with few contraindications and complications in experienced hands. One would recommend all ENT juniors to arrange for a basic ENT course to be attended at the earliest possible date upon commencing a rotation.

Visualised Structures

Nasal cavity, septum, middle meatal space and infundibulum, frontal recess, sphenoid ethmoid recess, turbinates, posterior choanae, eustachian tube orifices, adenoids, nasopharynx, posterior surface of the uvula and palate, velopharyngeal valve, adenoids, base of the tongue, pharyngeal and lingual tonsils, vallecula, pyriform spaces, epiglottis/ supraglottis, glottis with mobility or immobility of the vocal folds and arytenoids, and immediate subglottis.

Essential Equipment

- Flexible nasendoscope.
- Light source.
- Sani-cloth.
- Co-Phenylcaine.
- Lubricating Jelly.

Basic procedure for FNE

1. Explain procedure to patient and gain informed consent.
2. Preferably sit patient upright, with a head rest for added support.
3. Spray Co-Phenylcaine into both nostrils:
 - a. NB; warn patients not to have any food / drink of extremes of temperature for 1-2hours post procedure due to local anaesthetic properties of spray.
4. Attach flexible endoscope to light source.
5. Hold the scope in your dominant hand:
 - a. Movement of camera is roughly 90degrees about the vertical plane only.
 - b. Mechanism can be operated either with the index finger / thumb. Either is acceptable and is entirely user dependent.
6. Look at something using the scope to ensure correct orientation:
 - a. Using items with writing is easiest for this.
 - b. If not lined up adequately, adjust scope in your hand until lined up.
7. Apply lubricating jelly around the end of the scope (but not on very tip) to allow easier passage along nasal floor. Recommendations are to apply lubrication less than 2cm beyond the tip head. Some clinicians do not advocate the use of lubrication jelly, and instead opt for the use of the patient's own saliva.
8. Silicone spray may be utilised to prevent fogging of the camera during the procedure.

As with any procedure, adequate positioning is crucial. The patient is usually assessed in upright position, but a supine position is not contra-indicated. A posterior headrest is usually required for stabilisation, with the head stationed in a manner to bring the larynx and pharynx into optimal alignment. If right handed, the operator should utilise the same hand, and position themselves to the left of the patient. This permits the left hand to rest on the patient's nose to provide further stability, and aid guidance of the nasendoscope. In the event that the patient is positioned supine, the operator must stand at the head of the bed, left of the midline, with identical controls in the right hand. This technique allows poor visualisation distal to the nasopharynx to the posterior resting state at the tongue base.

9. Using the scope, assess the patency of each nostril to determine which would be easier to attempt. Usually the right nostril is the easiest, but this is not always the case.
10. Ask the patient to breathe deeply through his / her nose.
11. Gently pass the tip of the scope through the chosen nostril.
12. Advance the scope under direct visualisation in a horizontal direction along the nasal floor:
 - a. Following the junction between the nasal septum and floor is easiest path.
 - b. Stay below the inferior turbinate to ensure correct placement.
 - c. Assess and observe for any abnormal anatomy.
13. The first resistance you should meet is the posterior pharyngeal wall.
14. Angle / direct the tip of the scope downwards using the switch:
 - a. If 'fogging' occurs, touch the tip of the scope to the posterior pharyngeal wall or alternatively ask the patient to swallow.
15. Advance the scope forwards until the larynx comes into full view.
16. Assess for any abnormal pathology / anatomy.
17. Observe for movement of the cords and airway patency with breathing and phonation.
18. Ask patient to:
 - a. Puff out their cheeks to enable better anatomical views.
 - b. Say 'eeeh' to assess adequate vocal cord movement.
 - c. Protrude tongue out to view the base of tongue for any abnormal pathology.
19. Examine for:
 - a. Asymmetry.
 - b. Abnormal growths.
 - c. Increased erythema/ hyperaemia.
 - d. Ulceration.
 - e. Plaques.
20. Once happy withdraw the scope under direct guidance, examining the anatomy for abnormalities on the way.
21. Ensure correct local procedure followed for storing and cleaning of the scope after use.

22. Document procedure and any findings in the notes: It is usually advised to add a visualised sketch to the notes, identifying all the major structures aforementioned.

Comment on the following when documenting:

1. **Entry: Difficult or easy.**
2. **Presence of any septal abnormalities i.e. deviation.**
3. **Presence of any polyps (grade I-III).**
4. **Comment on the tongue base.**
5. **The vocal cords: Position and whether movement occurs symmetrically or asymmetrically. Are there any nodules present? Bilateral nodules are usually benign i.e. singer's nodules. Are the cords swollen? I.e. Reinke's oedema. Presence of any plaques or candidiasis.**
6. **The vallecula.**
7. **The epiglottis i.e. epiglottitis.**
8. **Arytenoids: Inflamed in GORD.**
9. **Folds: Vestibular fold, vocal fold and aryepiglottic fold.**

23. Abnormalities should be reviewed by a senior.

24. Arrangements should be made for formal microlaryngoscopy / panendoscopy +/- biopsy where any abnormality is suspected.