

## ***Editorial***

# **Narrow band imaging (NBI) in ENT**

Narrow band imaging (NBI) refers to a new optical imaging technique for endoscopic diagnostic test where blue and green light is needed to enhance the details of certain aspects of the surface of mucosa. A specific filter is electrically activated by a switch in the endoscope leading to the use of ambient light of wavelengths of 440 to 460 nm (blue) and 540 to 560 nm (Green). The NBI system has been developed as a part of the joint research between Japanese National Cancer Centre Hospital East and Olympus Corporation, Japan by the support of Grant for Scientific Research Expenses for Health & Welfare Programme. Sano et al were the first to report the clinical utility of NBI in the gastrointestinal tract.

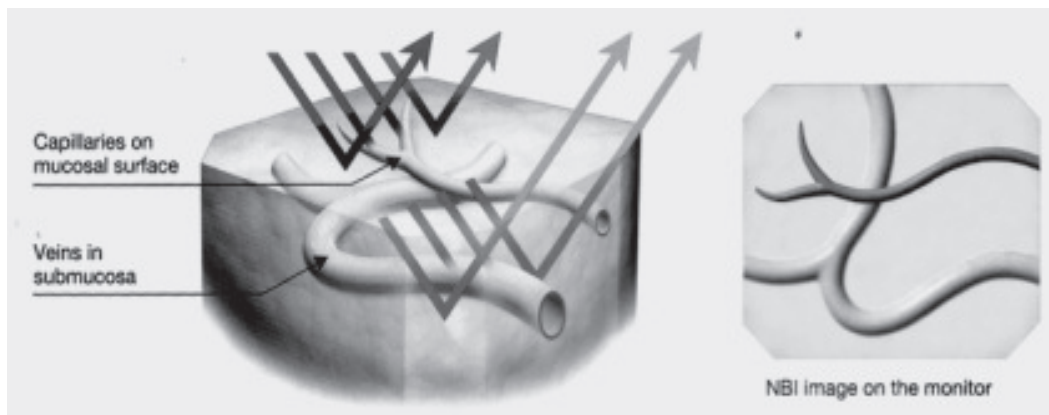
NBI improves the visibility of microvasculature and other tissues on the mucosal surface. Narrow band illumination which is strongly absorbed by haemoglobin at a specific wavelength and penetrates only the surface of tissues is good for enhancing the contrast between the two. As a result, under narrow

band illumination capillaries within the mucosal surface are displayed as brown on the monitor while the veins in the submucosa are displayed as cyan. (Fig:1)

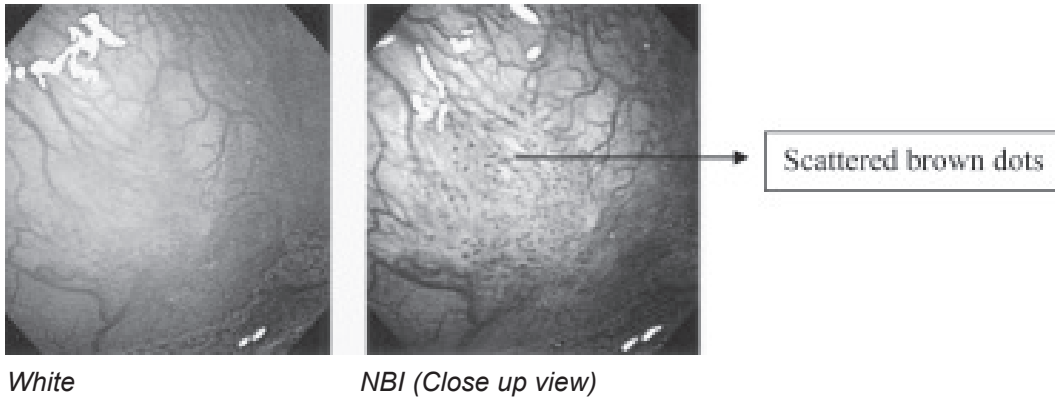
The enhanced visibility of capillary networks by NBI allows identification of cancerous lesion less than 0.5mm in diameter (extremely early stage), which cannot be detected by traditional white light imaging.

The combination of HD TV and NBI provides better definition of tumor staging and surgical margins in pre and intraoperative settings. NBI is also valuable in post operative settings due to its ability in early detection of persistent, recurrent or metachronous tumour in the pharynx and larynx. It is also used for early diagnosis of bronchial, esophageal, gastric, colonic and bladder cancer.

Now a days, NBI is incorporated in the fiberoptic nasopharyngo laryngoscope to detect very early cancers of pharynx and larynx and also to detect early recurrence or metachronous tumour.



**Fig.-1**

**Fig.-2**

By using NBI technique, an early malignant lesion of pharynx will be seen as a brownish area and the closeup view will additionally show scattered brown dots on the lesion (which is a sign of very early malignancy). While with the conventional white light imaging technique, the same lesion will be seen only as a reddening lesion which can't be differentiated from the surrounding mucosa (Fig-2).

In Bangladesh, this technology is not yet available. We hope that it will be available in near future as it is available in some of our

neighboring countries. So, we should think using NBI technique to diagnose early malignancy, persistent or early recurrence of cancers in the naso, oro or larygopharynx and larynx and also to detect metachronous tumour.

**Prof. Dr. Khabiruddin Ahmed**

Professor & Head of the Department of ENT & Head Neck Surgery,  
Shaheed Suhrawardy Medical College,  
Dhaka.