Background and Study Objective

- Narrow band imaging (NBI) via video-endoscopes, is an innovative technology that uses optical interference filters to create narrow band light capable of highlighting superficial mucosal microvasculature, an important characteristic that has been proposed to differentiate between neoplastic and non-neoplastic lesions.
- Much work has been done on NBI in regions such as the lungs and gastrointestinal tract but studies on applications of NBI in the head and neck region are scarce in comparison and to date, there are only 2 case reports on the use of NBI in the nasopharynx for detection of NPC.
- This study aims to compare narrow-band images of nasopharyngeal carcinoma (NPC) with normal nasopharyngeal mucosa and adenoidal tissue.

Method

- Prospective study on patients attending the Ear, Nose and Throat (ENT) clinic. Nasoendoscopic evaluation using both conventional white light (WLI) and narrow band light (NBI) were performed. Biopsies of the nasopharynx were performed for histological confirmation. Epstein-Barr virus (EBV) serology was tested in all patients.

Results

- 30 patients were recruited.
- 21 patients had no evidence of malignancy on both histological and serological testing.
- 7 patients had NPC and 1 patient had nasopharyngeal papillary adenocarcinoma.
- NBI features identified in normal nasopharyngeal mucosa and adenoids are: 1) regularly-arranged follicular pattern, whereby 2) 'follicles' are composed of pale centres with dark peripheries.
- In comparison, NBI appearances of NPC are noted to show 1 or more of the following features: 1) absence of surface patterns, 2) dark brown, irregular wave-like surface patterns, and/or 3) irregular follicular patterns with dark brown centres and pale peripheries.

Conclusion

- With NBI, features on the surface of nasopharyngeal mucosa, adenoidal tissue and NPC are clearly demonstrated and consistently show characteristics as described.
- NBI may therefore be a useful adjunct in differentiating normal mucosa and tissue from malignancy.
- Further studies are needed to evaluate its diagnostic accuracy.