SUMMARY & CONCLUSION

Conventional endoscopy allows direct visualization of mucosa and can be used for biopsy. It is however, invasive and requires sedation, and endoscopic assessment depends on the operator's experience. More importantly, it may not be possible to progress beyond a stenosis or obstruction, thus hampering complete assessment of the lesion. In addition, viewing is limited to the lumen, restricting transmural evaluation. In contrast, virtual laryngoscopy is non-invasive and uses two-dimensional computed tomography to create three-dimensional endoscopic simulation with a number of advantages. It can be used to view the distal aspect of obstructing lesions or stenosis which a conventional endoscope cannot pass through. All viewing directions are possible. With appropriate software, the transmural extent of a neoplasm and surrounding structures can be demonstrated. (***Yuling et al., 2007)***

While there are several advantages of virtual laryngoscopy, there are a number of disadvantages. It has the drawback of radiation exposure, although excellent contour visualization is possible, mucosal irregularities and vascularity are not depicted. In addition, it does not allow biopsy, and cannot be used for contact examination of blood vessels unlike endoscopy. Combining the two techniques, and viewing virtual laryngoscopic images during endoscopy, a synergistic effect may be obtained, thus facilitating three-dimensional interpretation***. (Wang et al., 2001)***

Virtual endoscopy is quick to perform and shows anatomical detail similar to conventional endoscopy. With multi-detector CT and improving computer technology, reconstructions will become quicker and

detail will improve. It is particularly useful for obtaining views from below an obstructing lesion or stenosis, or in the occasional patient who will not tolerate examination. However, its current role is in imaging patients with an impassable obstruction, in order to provide detail distal to this. It also has potential for improving pre-operative planning and staging for head and neck pathology***. (Yuling et al., 2007)***

In conclusion; the larynx is perhaps the area in the human body that is visualized most often via endoscopy. Virtual laryngoscopy (VL) would complement conventional laryngoscopy and prove to be especially useful for examinations in patients having stenosis and congenital defects. It would also be useful in patients who are unfit for general anesthesia. In our opinion, VE-based visualization of the larynx and upper airway would offer numerous benefits over conventional laryngoscopy, including providing unconventional internal and external views of the airway anatomy and the subglottic cavity in patients with infection, inflammation, and neoplasia of the lumen. Although VL holds promise for some clinical applications, the technique is limited by the quality and speed of algorithms used for the reconstruction and navigation within the 3D laryngeal cavity.