Endoscopic Management of Early Esophageal Cancer

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Introduction

Endoscopic management of early esophageal cancer requires multiple skills. The first is adequate identification of the target lesion. This can be achieved through careful white light examination but newer technologies such as probe based confocal laser endomicroscopy or volume laser endomicroscopy can make this task much easier. Magnification narrow band imaging can also be very useful. The second important skill is staging with endoscopic endosonography. This is not essential for T staging but can be useful for assessing regional lymph nodes. The last skill is the ability to resect the lesion using mucosal resection techniques. This should be done en bloc if possible.

Imaging of Early Cancer

Early cancer is usually visible and typically is a Paris IIa or IIb lesion in Barrett’s esophagus. These are slightly elevated or flat lesions which can be appreciated on a careful high resolution white light examination. Certainly, recognizing abnormal mucosal and vascular patterns is easier using narrow band imaging which enhances superficial vessels by using blue light for illumination and detection of light in the hemoglobin absorption wavelengths. When combined with magnification, this technique allows very careful delineation of neoplastic boundaries. Newer techniques such as laser confocal endomicroscopy allows further delineation at the level of cellular detail as well as fluorescein leakage from neoplastic capillaries. Studies have shown that this technology can find endoscopically occult malignancies.

Staging with Endosonography

EUS of early cancers is not easy to perform, as T staging requires careful examination with a high frequency probe to visualize small cancers. Water filling of the esophagus is needed as compression with a balloon can easily eliminate any sonographic sign of a small cancer. Most commonly, endosonography is used to detect evidence of regional lymph node involvement.

Mucosal Resection
Resection of the lesion can be achieved rapidly with endoscopic mucosal resection techniques once the boundaries are clearly identified. Features of potentially curable early cancers include 1) Superficial nature (above the muscularis mucosae), 2) lack of lymphovascular invasion 3) well differentiated cancer 4) absence of ulceration. Lesions that are larger than can be removed by EMR can be removed with endoscopic submucosal dissection. ESD is not easily accomplished in the esophagus because of the restricted space to perform the procedure. It requires patience, long procedural times, and training that is difficult to obtain in the West. It remains to be determined if repeated EMR can lead to similar outcomes as ESD for superficial cancers as outcomes such as cancer related death have not been assessed.

References