



Esophageal Adenocarcinoma Treatment Redirected Using pCLE Information

Case Study

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Technology review

Probe-based Confocal Laser Endomicroscopy (pCLE) is a new method that provides microscopic views of the mucosa. Images are obtained by scanning the mucosal surface with a low power laser light that is passed through a fiber optic bundle. This technology makes it possible to image individual cells and tissue architecture, allowing the endoscopist to make a diagnostic assessment of the histology real-time, *in vivo*.

Case report

A 58-year-old man presented with iron deficiency anemia. A routine upper endoscopy was performed on the patient by an attending physician using both white light endoscopy (WLE) and narrow-band imaging (NBI).

A small, linear esophageal ulcer with a tear was seen at the gastroesophageal (GE) junction (figures 1, 2). There was also an associated GE junction polypoid lesion with an abnormal mucosa pattern below the z-line, which had been biopsied multiple times.

Biopsy results of these two lesions showed squamous and columnar mucosa with moderate, acute, and chronic inflammation, extensive intestinal metaplasia, and focal cytological glandular atypia. Neither high grade dysplasia (HGD) nor carcinoma was seen.

In spite of these results, the two lesions above and below the z-line remained concerning. As such, it was decided to bring back the patient one month later for repeat surveillance endoscopy with pCLE.

Upon examination with pCLE, the area looked like adenocarcinoma or severe dysplasia (non equidistant glands; glands unequal in size and shape; enlarged cells; figures 3-5). Using EUS, it was staged at T-II. Part of the nodule was resected (approximately 1 cm) and ultimately the pathology came back as well to moderately differentiated adenocarcinoma.

Based on these findings, an esophagectomy was performed on the patient.

Summary

pCLE enabled the physician to assess in real-time the true nature of a suspicious nodule that remained unclear based on routine techniques. The additional information provided by pCLE imaging during the procedure, helped redirect the treatment strategy for the patient and address the presence of adenocarcinoma sooner.

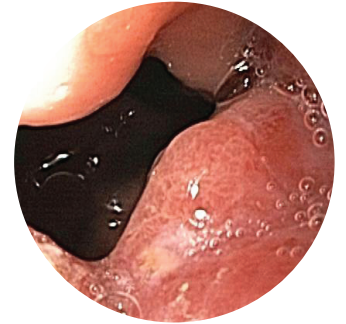


Figure 1 : endoscopic image of the esophageal ulcer



Figure 2 : endoscopic image of the nodule

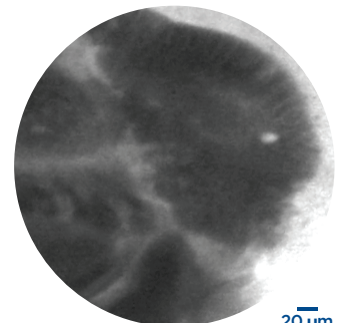


Figure 3

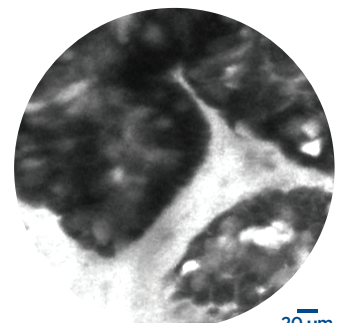


Figure 4

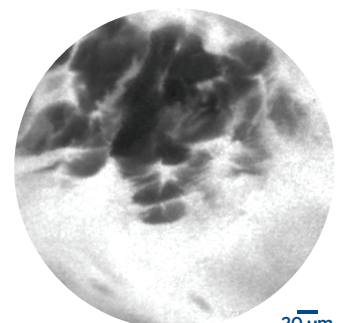


Figure 5

Figures 3-5 : pCLE images of adenocarcinoma and/or severe dysplasia