



# pCLE (probe-based Confocal Laser Endomicroscopy) Detects and Guides Therapeutic Decision Making for Barrett's Esophagus Patient

## Case Study

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### 1. Technology Review

Probe-based Confocal Laser Endomicroscopy (pCLE) is a new method which 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.

### 2. Case Report

A 63 year old man was admitted in 2005 for dysphagia. EsoGastroDuodenoscopy (EGD) with White Light Endoscopy (WLE) detected a circumferential ulceration at the lower part of the esophagus, in a small hiatal hernia (figure 1). The patient was re-scheduled 7 months later for a second EGD. During this procedure, WLE identified erosive esophagitis and confirm the presence of a circumferential ulcer.

4 months later, a surveillance EGD with WLE was performed, showing columnar lined epithelium. Corresponding biopsies were consistent with esophagitis but showed no evidence for intestinal metaplasia (figure 2).

Based on the previous findings, a fourth EGD procedure was performed 6 months later, with pCLE in order to get a definitive answer on the presence of intestinal metaplasia. pCLE was performed after intravenous injection of 2,5 ml of 10% fluorescein. The GastroFlex™ UHD Confocal Miniprobe™ was inserted in the working channel of the endoscope and placed on the distal part of the esophagus. pCLE images revealed specific features consistent with the presence of intestinal metaplasia, which was later confirmed by biopsies: presence of regular columnar-lined epithelial surface, identification of goblet cells, regular glands and cells (figures 3 and 4)

The diagnosis stemming from pCLE images was confirmed by histology which enhanced typical Barrett's glands cells and regular arrangement of nuclei, without associated neoplasia. According to these findings, patient was prescribed with a PPI treatment.

### 3. Summary

In our patient, pCLE was able to identify, in vivo, and real time, specialized columnar epithelium at the distal part of the esophagus and accurately orient patient treatment.



figure 1: endoscopic view of hiatal hernia



figure 2: endoscopic view of suspicious area

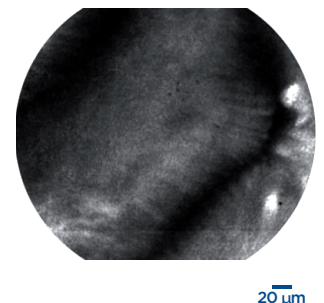


figure 3: pCLE image of intestinal metaplasia showing a regular epithelial surface

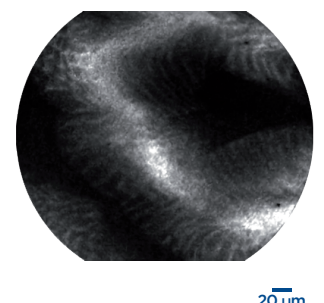


figure 4: pCLE image of intestinal metaplasia showing regular epithelial lining