

Cellvizio Enables Real-Time Diagnosis of Intestinal Metaplasia

Philip Leggett, MD

Houston Northwest Medical Center; Houston, TX

Technology Review

Optical biopsy with probe-based Confocal Laser Endomicroscopy (pCLE) is an advanced technology that provides microscopic views of the mucosa. Images are obtained by scanning with a probe that is passed through the working channel of an endoscope. This technology makes it possible to image individual cells and tissue architecture, allowing them to make real-time diagnostic assessment of in vivo histology, thus, allowing the endoscopist to examine much more mucosa at a microscopic level than what is possible with random biopsies.

Case Report

The patient is a 71-year-old male with chronic reflux symptoms. He has had persistent symptoms for over 10 years with only minimal and temporary relief while taking a proton pump inhibitor (Prilosec). At the time of his initial visit, he has never had an EGD.

He then underwent an EGD with pCLE. Multiple areas of intestinal metaplasia with Goblet Cells, consistent with Barrett's Esophagus (BE), and disorganized architecture of the tissue, consistent with dysplasia, were seen on pCLE (Figures 1-4). Standard 4-quadrant biopsies at the gastro-esophageal junction using the Seattle protocol were also taken. Final pathology from these biopsies was negative for presence of *Helicobacter pylori* infection. Goblet-cell intestinal metaplasia was reported in several of the biopsy samples, and one sample demonstrated high-grade dysplasia. These findings were confirmed by a second opinion from a Pathology team at a different hospital.

The patient subsequently underwent esophagoscopy with circumferential radiofrequency ablation (RFA) of his long-segment (9 cm) Barrett's Esophagus. He has been scheduled for surveillance EGD with pCLE to confirm adequate ablation, and will eventually undergo Nissen fundoplication for reflux definitive treatment.

Summary

In this case report, findings of BE with dysplasia were detected by pCLE and confirmed by conventional anatomic pathology. The immediate results provided by pCLE helped to direct therapy radio frequency ablation. Furthermore, as pCLE continues to be validated as a primary means for diagnosis of BE, the real-time results it provides could potentially direct immediate treatment and minimize repeat endoscopic procedures.

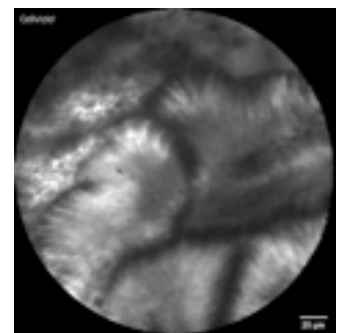


Fig 1: pCLE image showing Intestinal metaplasia with Goblet Cells

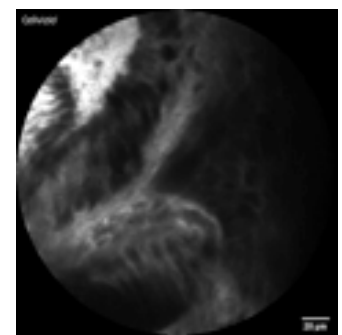


Fig 2: pCLE image showing dysplasia

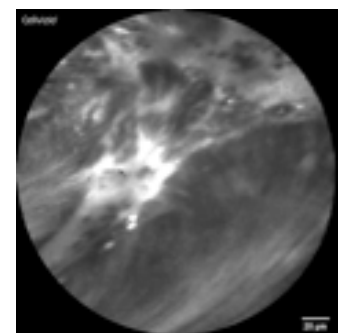


Fig 3: pCLE image showing dysplasia