# New diagnostic techniques for the differential diagnosis of a pancreatic mass: Contrast-enhanced EUS… It doesn't help me…

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There is empirical proof that contrast-enhanced endoscopic ultrasound EUS (C-EUS) is not indispensable; since there are entire continents where contrast is not even available, yet there is no evidence that the outcomes of EUS are better where contrast is available.

Obviously, the primary differential diagnosis in patients with a pancreatic mass is cancer. Therapeutic options for cancer (surgery, chemotherapy radiotherapy) generally have potentially serious consequences. Therefore, management decisions in patients with cancer generally require diagnostic certainty. Cancer is a histological diagnosis, and histology requires a biopsy! C-EUS would be of true value if it provided sufficient certainty to avoid biopsy – meaning it would have to be a very accurate and reproducible form of "optical biopsy."

Unfortunately, the experience with other forms of optical biopsy has shown that while interesting, for whatever reason, they have not come into widespread use in clinical practice. It is possible that the added time, expense, and added medicolegal responsibility (of replacing a pathologist) may not be justifiable (financially or otherwise). Meta-analysis reports that the accuracy of C-EUS is approximately 90%.[1] This is high but still means that C-EUS is mistaken in 1 of 10 cases. This is unacceptable when making decisions in patients with suspected cancer.

The reported accuracy of C-EUS is encouraging but is not better than that of other forms of optical biopsy. In addition, there are several issues that may limit or overestimate its true ability to diagnose or exclude cancer. EUS-fine-needle aspiration (FNA) is the gold standard for the diagnosis of pancreatic cancer. It is safe, extremely effective and provides a true issue diagnosis.[2] Therefore, EUS-FNA provides a diagnosis in the great majority of cases. Optical biopsy should be used in cases where EUS-FNA is contraindicated or "indeterminate". Therein lies the major problem with studies comparing C-EUS to EUS-FNA. In these studies, obvious cancers (or cancers that are FNA positive) were not excluded. The accuracy for obvious lesions is higher than for equivocal cases including these cases introduces "spectrum bias." The spectrum of the patients does not represent the true spectrum of disease in which C-EUS is likely to be used. In

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patients with truly indeterminate (FNA-negative) lesions, the accuracy and interobserver agreement of C-EUS is likely lower. In addition, the endosonographer performing C-EUS cannot be blinded to the EUS b-mode appearance. It is unclear whether this may also artificially increase its reported accuracy.

Finally, what is the true "incremental" value of C-EUS? In other words, what is the true added clinical decision-making value of the information provided by C-EUS over the available clinical information: Clinical suspicion for cancer (*e.g.*, the presence or absence of systemic symptoms, pain, jaundice, etc.), computed tomography scan results, the b-mode EUS image (including the presence or absence of indirect signs of cancer such as pancreatic duct obstruction), and EUS-FNA results. If the C-EUS agrees with above, that is reassuring. If it disagrees, will management truly change? Will it really prevent surgery? It is unclear, but quite possible that except for very select indications, the answer is "No."

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