

GLOSSARY**ELASTIC SCATTERING SPECTROSCOPY (ESS)**

In vivo technique that uses the scattering of light at a point by subcellular components to differentiate between normal and abnormal tissue

urethra or vagina, were not seen in the current study. In addition, postprocedure pain scores for patients in the current study were lower than those reported in other studies for patients undergoing diathermy or stapled hemorrhoidectomy. DGHAL is a simple, efficacious treatment for patients with Grade II or III hemorrhoids, and should also be of benefit when treating Grade IV hemorrhoids.

Chrissie Giles

Original article Greenberg R *et al.* (2006) First 100 cases with Doppler-guided hemorrhoidal artery ligation. *Dis Colon Rectum* 49: 1–5

Frozen section analysis allows real-time management of esophageal cancer

High mortality and morbidity are associated with esophagectomy, the current first-line treatment for esophageal cancer; therefore, new endoscopic therapies with lower morbidity are needed. Endoscopic mucosal resection (EMR) followed by histologic examination of the resected specimen permits precise assessment of tumor invasion, but is unable to identify tumor margins. If tumor removal is incomplete, scarring and inflammatory changes can make subsequent EMR procedures difficult. The analysis of frozen tissue sections during surgical procedures would allow for immediate feedback, ensuring complete tumor removal at a single visit. Researchers at the Mayo Clinic have compared the respective abilities of frozen sections and standard permanent tissue sections to demonstrate the presence of esophageal tumor in specimens obtained using EMR.

Excellent agreement between results for frozen and permanent sections was obtained for all parameters. As the time required for analysis of frozen sections was between 8 and 12.5 min, the technique in combination with EMR could ensure complete excision of mucosal lesions, as well as accurate tumor staging, assessment of margins, and the extent of tumor invasiveness. For tumors penetrating below the muscularis mucosa, or where a danger of metastasis exists, esophagectomy would remain the recommended treatment.

The authors state that EMR is generally a safe procedure (with no complications

ensuing in these patients), but caution that it has a complication rate of 15% and should only be used in patients who could derive a clear clinical benefit.

Jim Casey

Original article Prasad GA *et al.* (2006) Frozen section analysis of esophageal endoscopic mucosal resection specimens in the real-time management of Barrett's esophagus. *Clin Gastroenterol Hepatol* 4: 173–178

Use of elastic scattering spectroscopy to diagnose colonic lesions

Currently, it is impossible to distinguish accurately between normal and abnormal tissue with colonoscopic evaluation alone. ELASTIC SCATTERING SPECTROSCOPY (ESS) is an optical technique that has been shown to have high sensitivity and specificity in the diagnosis of breast cancer and in the detection of esophageal lesions *in vivo*. The technique is sensitive to morphologic changes at the cellular and subcellular level; the differential scattering of light by normal and abnormal tissue leads to the generation of different spectral signatures. Researchers in the UK have assessed ESS for the diagnosis of colonic abnormalities in 45 consecutive patients; 483 spectra were generated from 138 colonic sites.

For differentiating between normal tissue and all abnormalities, the sensitivity of ESS was 92% and the specificity was 82%. For cancer detection, sensitivity was 80% and specificity 86%; for colitis detection, sensitivity and specificity were 77% and 82% respectively. Sensitivity and specificity values of between 75% and 88% were obtained for distinguishing between various colonic abnormalities.

ESS equipment is inexpensive, compact and portable, and is compatible with white-light colonoscopy. The authors point out, however, that a combination of imaging techniques might offer more accuracy than any single method. Although ESS is currently a point measurement technique, the authors say that it should be possible to develop the technology to image larger areas.

Jim Casey

Original article Dhar A *et al.* (2006) Elastic scattering spectroscopy for the diagnosis of colonic lesions: initial results of a novel optical biopsy technique. *Gastrointest Endosc* 63: 257–61