

Ultrasound Elastography Helps ID Skin Cancer

BY PATRICE WENDLING

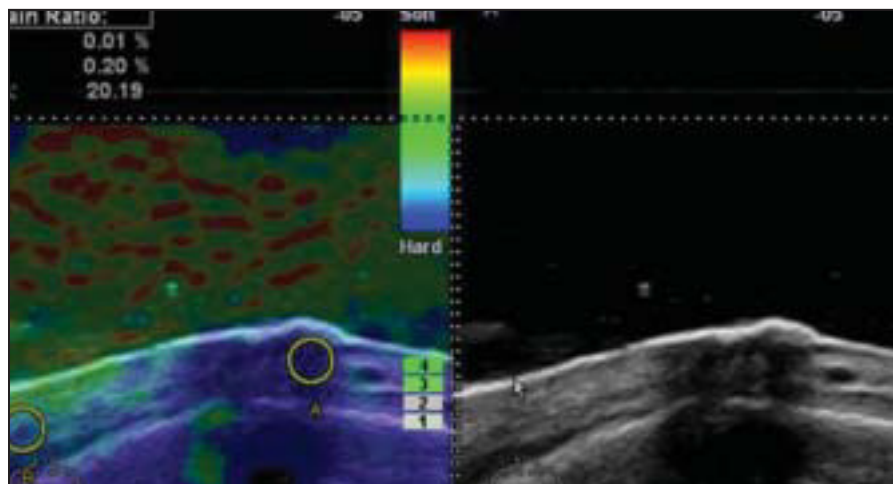
CHICAGO — An ultrasound technique that measures tissue elasticity could dramatically alter the way in which skin cancer is diagnosed.

In a prospective study of 56 patients with proliferative malignant neoplasms or benign skin lesions, the use of ultrasound elastography analysis prior to biopsy correctly differentiated benign from malignant lesions in 100% of cases, Dr. Eliot Siegel reported at the annual meeting of the Radiological Society of North America.

“We believe that ultrasound has tremendous potential that is completely untapped now to characterize and delineate the extent of skin lesions currently evaluated visually,” he said. “We believe it has tremendous promise to reduce unnecessary biopsies.”

Elastography noninvasively estimates the axial tissue strain, or elastic properties of tissue. Cystic lesions demonstrate high levels of elasticity, while malignant lesions are relatively “hard” with a very low level of elasticity.

Ultrasound with elastography, more so than optical or light images, is unique in its ability to provide the proper depth at which to analyze lesions—around 5 mm below the surface, said Dr. Siegel, vice



Elastography estimates the elastic properties of tissue. Malignancies, such as this squamous cell carcinoma (shown left on elastogram and right on unenhanced ultrasound) can be differentiated because they are stiffer than benign growths.

chair of radiology and a professor at the University of Maryland in Baltimore. This may be useful in the early detection of melanoma before the classic signs such as asymmetry or changes in border are present on the skin's surface. In addition, elastography could have a role during surgery.

“This also could guide the surgeon as the surgeon is doing an excision or biopsy to not just look at the tip of the iceberg that they can see at the skin surface, but actually to be able to look deeper, so they can see exactly which areas they can

cut out safely and still remove the entire tumor without unnecessarily removing more than that,” he said.

Elastography software is available on most new ultrasound machines, and has been used with promising results for breast, thyroid, and liver cancer. It has not been used to explore skin lesions, except for one prior study from 2007.

That study used absolute strain values, whereas Dr. Siegel and associates also calculated strain ratios. Malignant lesions had higher strain ratios (minimum 5.3;

maximum 32.2), compared to benign lesions (min. 0.01; max. 3). None of the malignant lesions violated a strain-ratio cutoff of 3-5, Dr. Siegel said. He presented a few examples, including a squamous cell carcinoma with a ratio of 13.27 and a benign keloid with a ratio of 1.25.

Although preliminary, the data suggest that strain ratios may also be useful in distinguishing between malignant lesions. Squamous cell carcinomas had a higher ratio overall, said coauthor Dr. Bahar Dasgeb, a radiologist and second-year dermatology resident at Wayne State University in Detroit. Moreover, the strain ratio was higher, even within squamous cell or basal cell cancers, when more invasive cells were present.

If strain ratios are combined with higher ultrasound frequencies, it's possible that the anatomic information gleaned from elastography “could rival the information that a pathologist would see after the lesion was excised,” Dr. Siegel said.

“That's really the direction that we'd like to head into for research and development, as we look at much higher ultrasound frequencies.”

The current study used a clinically available 14-16-MHz ultrasound unit.

Dr. Siegel disclosed receiving research grants from several imaging companies. Dr. Dasgeb had no disclosures. ■

Melanoma Diagnosis Delayed In Hispanic, Black Patients

BY MARY ANN MOON

The diagnosis of melanoma is delayed in Hispanic and black patients, compared with whites, and thus the mortality burden is disproportionately high in these minority populations, according to a database analysis.

“The results of our study should motivate the expansion of melanoma awareness and screening campaigns to the minority communities, which can ultimately alleviate the disparities in melanoma outcome,” said Dr. Shasha Hu of Sylvester Comprehensive Cancer Center at the University of Miami and associates.

“Research and public education efforts have focused on melanoma prevention in white populations because of their higher risk of developing melanoma.” These campaigns to improve awareness are likely the reason that survival among whites has risen from 68% in the early 1970s to 92% in recent years, they noted.

To assess long-term trends in other ethnic groups, Dr. Hu and her colleagues analyzed data from the Florida Cancer Data System (FCDS), a database that includes information dating back to 1981 on a relatively large Hispanic population. In comparison, the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) database did not classify data according to the “Hispanic” designation until the late 1990s, they said.

Between 1990 and 2004, 41,072 melanoma cases with known patient ethnicity and disease stage were reported to the FCDS in three mutually exclusive categories: 39,670 cases among whites, 1,148 among white Hispanics, and 254 among black non-Hispanics.

Despite the lower incidence of melanoma among Hispanic and black patients, both minority groups were much more likely to have a delayed diagnosis than were whites. A total of 26% of black patients presented with either regional- or distant-stage melanoma, as did 18% of Hispanic patients. In contrast, only 12% of white patients presented with such advanced melanoma, the investigators said (Arch. Derm. 2009;145:1369-74).

Melanoma diagnosis improved very little over the 15-year study period among Hispanics and did not improve at all among blacks, but it improved significantly among whites.

“These results clearly suggest that public education and screening efforts have successfully reduced the burden of late-stage melanomas in white non-Hispanics but have not reached other populations who already have disproportionately greater burden from late-stage melanoma,” Dr. Hu and her associates said.

No financial conflicts of interest were reported. ■

Optimal Isotretinoin Dosing For Rosacea Identified

BY BRUCE JANCIN

BERLIN — Isotretinoin could be headed for a new indication as a licensed treatment for rosacea.

The workhorse oral retinoid has been used off label to treat challenging cases of rosacea for more than 2 decades. However, Barcelona-based Almirall recently sponsored a successful multicenter randomized trial aimed at earning an indication from regulatory authorities for its branded version of isotretinoin in the treatment of rosacea, Dr. Harald Gollnick said at the annual congress of the European Academy of Dermatology and Venereology.

The double-blind, 12-week study involved 224 patients with the papulopustular or phymatous forms of rosacea. Participants in the five-armed trial were randomized to isotretinoin at 0.1, 0.3, or 0.5 mg/kg per day; doxycycline at 100 mg per day followed by 50 mg per day; or placebo, explained Dr. Gollnick, professor of dermatology at Otto-von-Guericke University, Magdeburg, Germany, and president of the European Board of Dermato-Venereology.

The optimal isotretinoin dose proved to be 0.3 mg/kg per day. Its efficacy was superior to placebo and similar to that of doxycycline, with both regimens achieving a 90% reduction in papules and pustules at 12 weeks, according to

Dr. Gollnick, who is also chairman of the Global Alliance to Improve Outcomes in Acne, an international group of acne experts.

“That means in the near future we'll most probably have an on-label indication for isotretinoin in rosacea,” he said.

Over the years isotretinoin has been used off label to treat rosacea, but the best dose was a matter of guesswork. The Almirall-sponsored trial is particularly welcome because it is the first formal study aimed at defining the optimal dose, added Dr. Gollnick.

The 0.3-mg/kg dose was associated with a low rate of side effects, consisting mainly of mild lipid changes and liver enzyme elevations. The 0.5-mg/kg dose wasn't any more effective, and it produced more irritation and facial dermatitis. The 0.1-mg/kg dose, while significantly better than placebo, was less effective than 0.3 mg/kg.

Topical therapies for rosacea include 0.5%-2% metronidazole, azelaic acid, 0.025% tretinoin, and 2.5%-5% permethrin. Systemic treatments include metronidazole at 500 mg/day, minocycline at 50 mg/day, tetracyclines at 0.5-1.5 g/day, and the subantimicrobial formulation of doxycycline known as Oracea.

Dr. Gollnick is a consultant to Almirall and numerous other pharmaceutical companies. ■