Ultrasound Technology



Q&A with James Trotter, M.D.

HealthCare Business News spoke with Dr. James Trotter about advances in ultrasound technology for evaluating the liver.

HCB News: What's the status of liver disease these days?

JT: Well, the two most important things to know are that liver disease is a rising global problem, and that here in the U.S., cases of hepatitis C, which affects the liver, have been increasing since the early 2000s. This rise may be due, in part, to better case ascertainment, but there is a true increase as well. And hep C is serious — there are more people dying of hep C than of AIDS in this country.

HCB News: Are there any other changes we should know about?

JT: The game changer recently is the emergence of new, highly effective oral medications for hep C. Before those treatments were available, the existing treatment with interferon could be worse than the disease — the efficacy was around 50/50, and the side effects were considerable.

HCB News: What effect did that have on evaluation?

JT: We used to triage patients very carefully, doing invasive liver biopsies to get detailed anatomic information about exactly how much fibrosis they had, because only in the worst cases was the risk of treatment worth it.

HCB News: I understand how new hepatitis C treatments are game changers, but how does ShearWave Elastography fit in? It's a form of ultrasound, right?

JT: SWE is a form of ultrasound elastography that uses super-fast shear waves to determine tissue stiffness, in this case liver fibrosis. The machine we use, from SuperSonic Imagine, generates a quantification of tissue elasticity in kilopascals (kPa) that's color coded and superimposed on a B-mode image.

The clinical advantages of SWE for evaluating the liver have been the subject of large studies, and the evidence shows that it's an effective evaluative tool. Its particular strengths — accurately and clearly determining advanced fibrosis quickly and painlessly — are perfectly suited for the treatment decisions we get to make.

HCB News: How exactly does the SWE evaluation fit in with those treatment decisions?

JT: From a user's standpoint, the benefits of the technology have really come to the fore now that the new hep C treatments are out there. Because SWE is so good at determining advanced fibrosis, and it can be done while the patient's in the office at the same time they have their initial consult, it's the best technology for the treatment. Hepatologists use it to see an even bigger sample of liver than we had with biopsy — and the patient is spared the time, discomfort and outright pain of the needle.

HCB News: Do you use SWE only for assessing fibrosis in new patients, or are there other points in time that it's used?

JT: SWE is also useful when you're monitoring how the liver is doing under treatment — or how the disease has progressed without treatment. ShearWave elastography makes these follow-up visits short and sweet; we can get the information we need while avoiding pain and discomfort for the patient.

HCB News: How has this technology affected your practice?

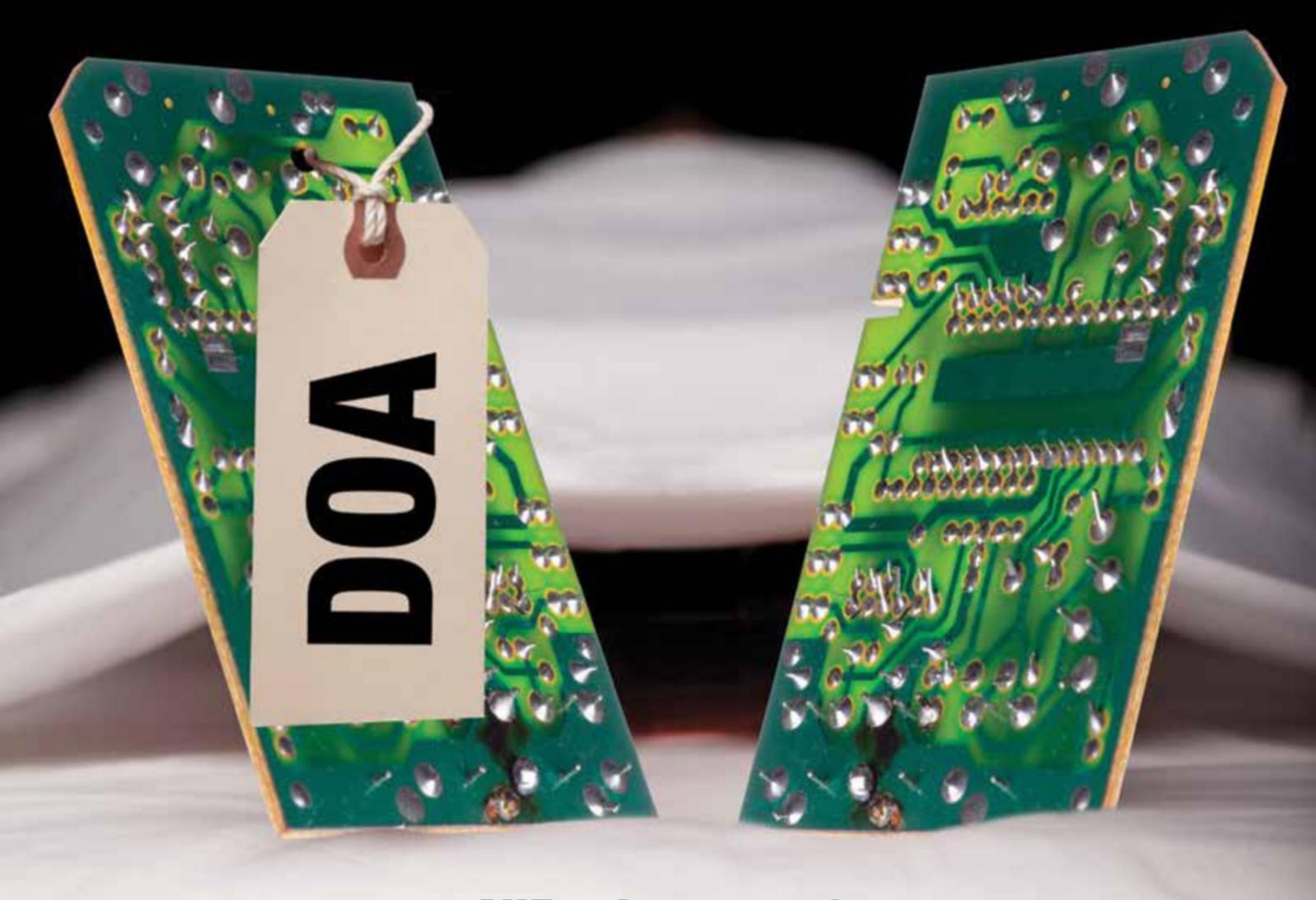
JT: It's improved throughput. In most cases you can do an exam while the patient's there in the office, meaning it just depends on how busy you are and how much time they have. So they come in, they can get a consult, they get their elastography, and before they leave they have the entire picture, as opposed to having to wait for a biopsy and interpret the results and all that sort of stuff. It also eliminates an additional copay for them. That is worlds apart from having to schedule and perform an invasive procedure like a biopsy, then wait for the results.

HCB News: Are there any broader implications of this dovetailing of treatment options and specific technology?

JT: Well, without wasting time on unnecessary and painful biopsies, we can improve clinical throughput and direct resources to those who really need them.

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