American Society for Aesthetic Plastic Surgery: New Ultrasound Technology Promising for Silicone Gel Breast Implant Monitoring

*Significant potential advantages over MRI in screening and diagnosis of breast implant shell failure*

New York, NY (PRWEB) February 15, 2012 -- Will high-resolution ultrasound become the new screening and diagnostic method for imaging silicone gel breast implants? A recent study suggests that portable, surgeon-performed, high-resolution ultrasound may have advantages over magnetic resonance imaging (MRI) when screening for implant failure. Preliminary results from the study demonstrated that high-resolution ultrasound provides excellent visualization of current fourth- and fifth-generation silicone gel implants in scanning models. In addition, in vivo surgeon-performed ultrasound accurately identified implant status and correlated with radiologist-performed ultrasound, MRI, and surgical findings. The results of the study, “Surgeon-Performed High-Resolution Ultrasound in the Detection of Silicone Gel Breast Implant Shell Failure: Background, In Vitro Studies, and Early Clinical Results,” appear in the February issue of the Aesthetic Surgery Journal.

“Our preliminary findings show that portable, surgeon-performed, high-resolution ultrasound is feasible for screening silicone gel breast implants, matching the capabilities of MRI in detecting shell failure,” said lead author Bradley Bengtson, MD, FACS, a plastic surgeon in private practice in Grand Rapids, Michigan. “Although we are still working to define the role of this technology in the screening and diagnosis of patients with different silicone gel breast implant styles, there are several obvious benefits over MRI, including convenience, cost, availability, and dynamic, real-time visualization of the implant.”

Funded in part by a grant from the Aesthetic Surgery Education and Research Foundation (ASERF), the multi-part study evaluated several currently available base and transducer systems, using them for both in vitro and ex vivo scanning model assessments of a variety of normal and damaged implant models (Phase 1). These technologies were also applied clinically to provide imaging experience in three patients previously diagnosed with unilateral implant failure (Phase 2). A preliminary prospective evaluation was then performed to compare the accuracy of MRI, surgeon-performed high-resolution ultrasound, and radiologist-performed high-resolution ultrasound scans in predicting the shell integrity of 29 implants in 15 consecutive breast implant patients who subsequently underwent secondary implant surgery (Phase 3). In Phase 1, all hardware models easily detected both intact and intentionally damaged shells in currently marketed fourth-generation responsive gel implants and in investigational, fifth-generation highly cohesive gel devices. Although multiple transducers were able to detect shell failure, the 12-MHz head produced the best images at the normal clinical depth range. Confirmatory scans in Phase 2 correctly identified the side of rupture and were consistent with MRI and surgical findings. In Phase 3, high-resolution ultrasound accurately predicted implant shell integrity in all 29 imaged breasts (100%) as confirmed at the time of surgery in both symptomatic and asymptomatic patients. MRI is currently recommended by the US Food and Drug Administration (FDA) for device surveillance.

“For both the patient and the surgeon, portable, high-resolution ultrasound has many potential benefits over MRI in the setting of breast implant screening,” said co-author Felmont Eaves, MD, Associate Clinical Professor at the University of North Carolina at Chapel Hill and immediate past president of the American Society for Aesthetic Plastic Surgery (ASAPS). “This office-based technology may also have broader applications, such as hand and facial fracture identification and treatment, vein surgery and ablation, visualization prior to shaped implant rotation, identification and management of seroma, and general breast evaluation.”
A prospective study is currently ongoing to help define the sensitivity and specificity of high-resolution ultrasound in the evaluation of current implant designs.

“Portable, high-resolution ultrasound that can be performed by the surgeon has the potential to enhance many areas of aesthetic breast surgery practice,” said Foad Nahai, MD, Editor-in-Chief of Aesthetic Surgery Journal. “We look forward to more information from this study.”

About ASJ
The Aesthetic Surgery Journal is the peer-reviewed publication of the American Society for Aesthetic Plastic Surgery (ASAPS) and is the most widely read clinical journal in the field of cosmetic surgery, with subscribers in more than 60 countries

Website: surgery.org
Follow ASAPS on Twitter: www.twitter.com/ASAPS
Become a fan of ASAPS on Facebook: www.facebook.com/AestheticSociety
Aestetic Surgery Journal: http://aes.sagepub.com

###
Contact Information
Ashley Barton
Amer Soc for Aesthetic Plastic Surgery
(212) 921-0500

Online Web 2.0 Version
You can read the online version of this press release here.