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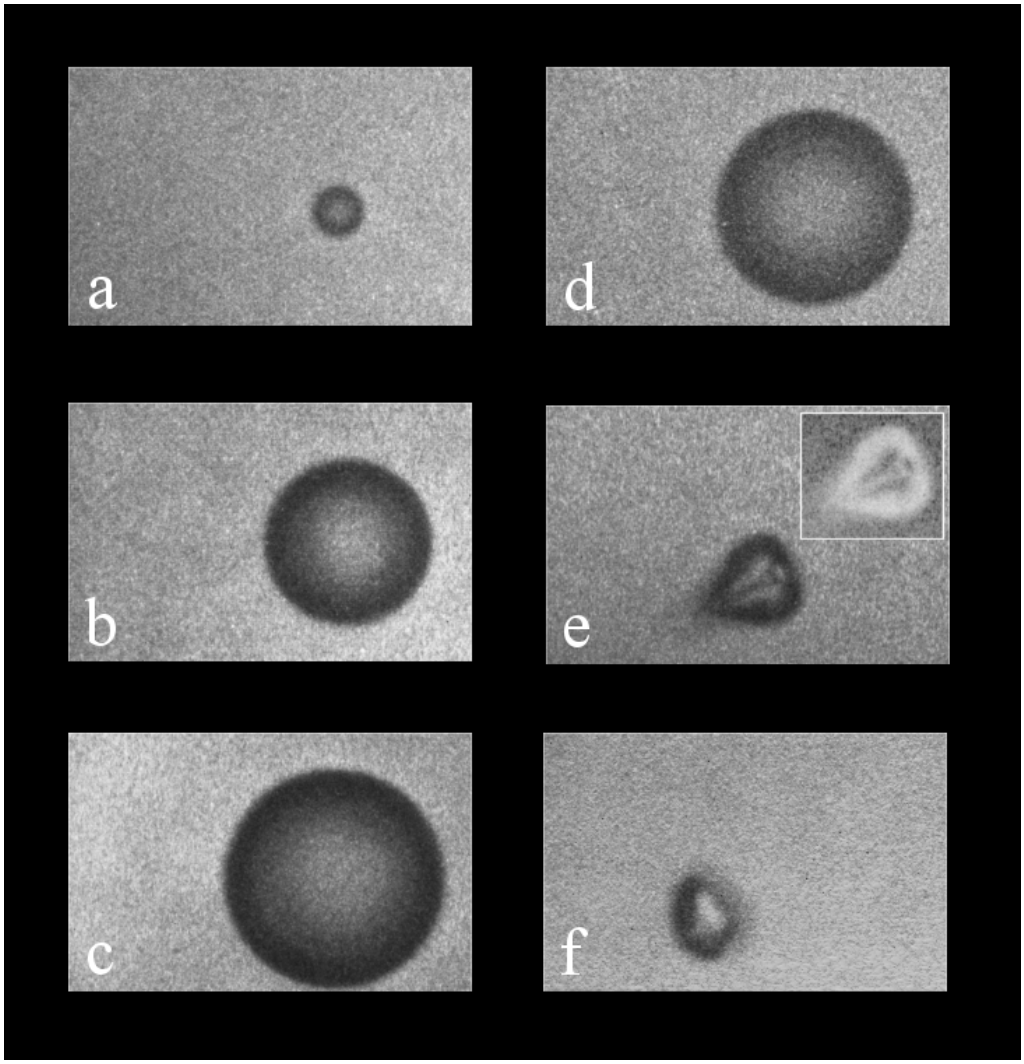

Web site: http://www.ieee-uffc.org/tr/

The cover page shows a sequence of microscopic image frames of a freely flowing contrast agent microbubble. The frames were taken during one cycle of ultrasound insonification, with a center frequency of 500 kHz. The peak negative acoustic pressure at the region of interest was 0.85 MPa. Each frame corresponds to a 45 x 27 μm^2 area. The exposure time of each frame was 10 ns. Interframe times were 330 ns, except for the time between frames e and f, which was 660 ns. The sequence shows a growing gas encapsulated microbubble of 5.3 μm (a) and 17.6 μm (b), and its maximal growth of 22.9 μm (c). After shrinking to 20.2 μm (d), it ruptured (e). The microbubble had been pushed to the lower left side of the frame, apparently by water that was propelled into the microbubble. A subframe shows the negative of the region of interest. Finally, the deformed mcrobubble re-occurred as an assymetric shape (f). Understanding of microbubble-rupturing behavior is neccessary for developments in medical release burst imaging and ultrasound-guided drug delivery. This work has been supported by the Technology Foundation STW (RKG.5104) and the Interuniversity Cardiology Institute of The Netherlands. (Images courtesy of *M. Postema, A. Bouakaz, and N. de Jong, Erasmus University Medical Center, Rotterdam, The Netherlands.*)

Image file available for download: Image (zipped), TIFF format, 268KB (541KB decompressed)