Supplemental Data

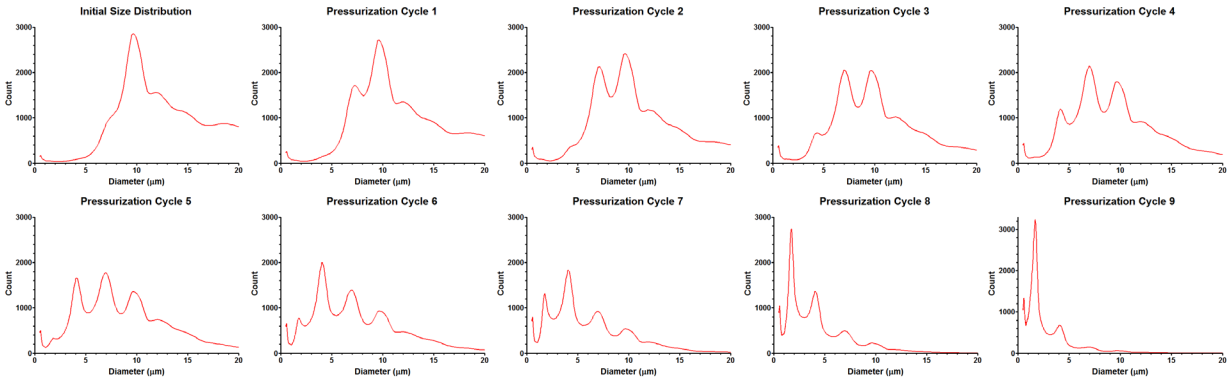

Figure S1. Accusizer 280A measurements on microbubble size distribution after cycles of increasing pressure to 100 kPa gauge for 30 s followed by reducing pressure back to an atmosphere. The microbubbles were filled with PFB and coated with 90 mol% DSPC, 10 mol% PEG-40 stearate. The microbubbles were washed by centrifugation to remove smaller microbubbles before the first pressure cycle was applied. Note that the mean diameter decreased with each pressurization cycle, while the total particle concentration remained constant at ~1x10^{9} mL^{-1}. The microbubbles appeared to shift from peaks of larger to smaller diameter.

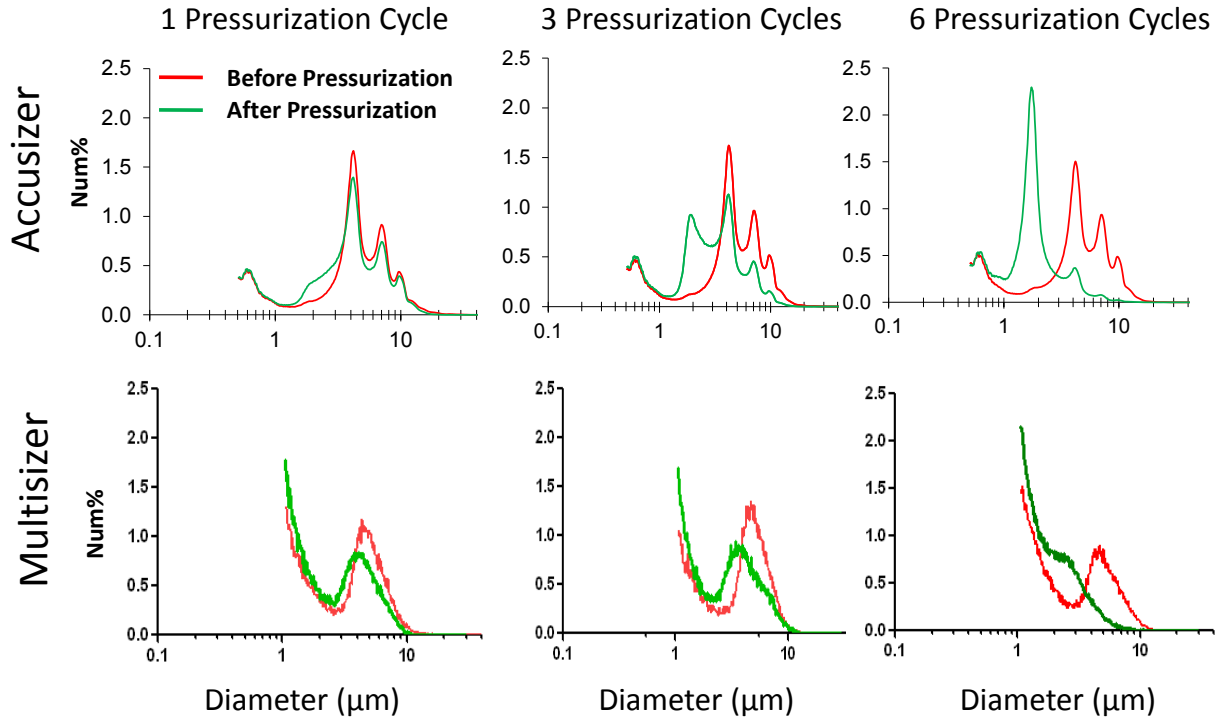

Figure S2. Comparison of optical (Accusizer) and electric impedance (Multisizer) size measurements for similar microbubbles as in Figure S1. The mean size and concentration from the two instruments were in good agreement. Note that the tail between 1-2 µm in the Multisizer distribution was considered an artifact, rather than a distinct peak, and that the bubbles appeared to shift to lower sizes more continuously than for the Accusizer.

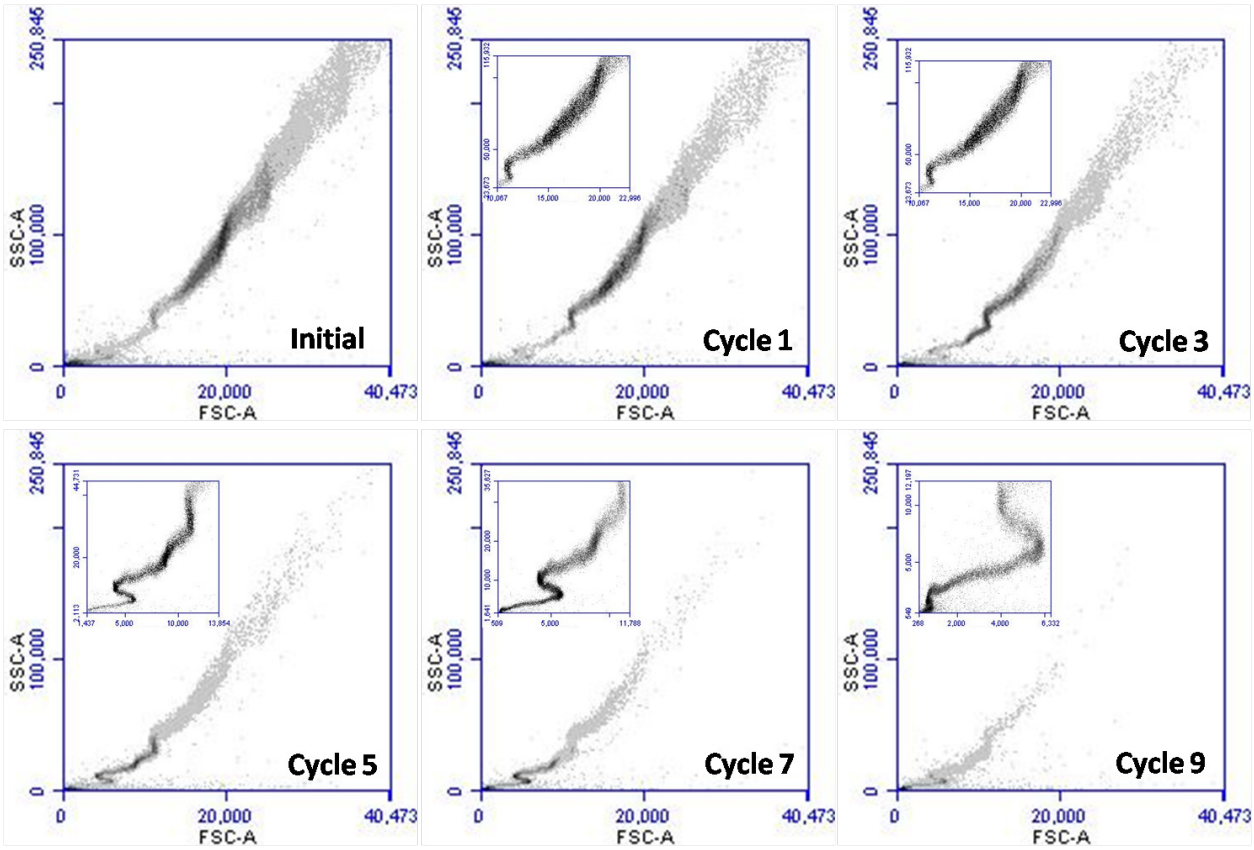

Figure S3. Accuri C6 flow cytometry scatter plots for measurements on microbubble size distribution after cycles of increasing pressure to 100 kPa gauge for 30 s followed by reducing pressure back to an atmosphere for the same bubble sample as shown in Figure S1. Note that the density plots show discrete regions of high microbubble concentration separated by regions of low microbubble concentration, indicating a multi-modal nature to the microbubbles. Multimodal distributions may be an optical artifact.

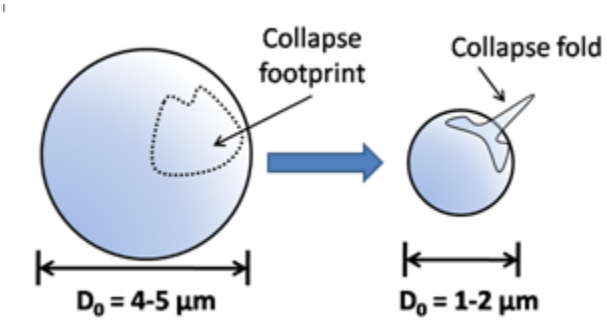

Figure S4. Cartoon schematic showing possible mechanism for fold formation on lipid-coated microbubbles observed in Figures S1-3. These folds appeared to remain attached for Survanta microbubbles, but were shed for DPPC microbubbles (see main text).