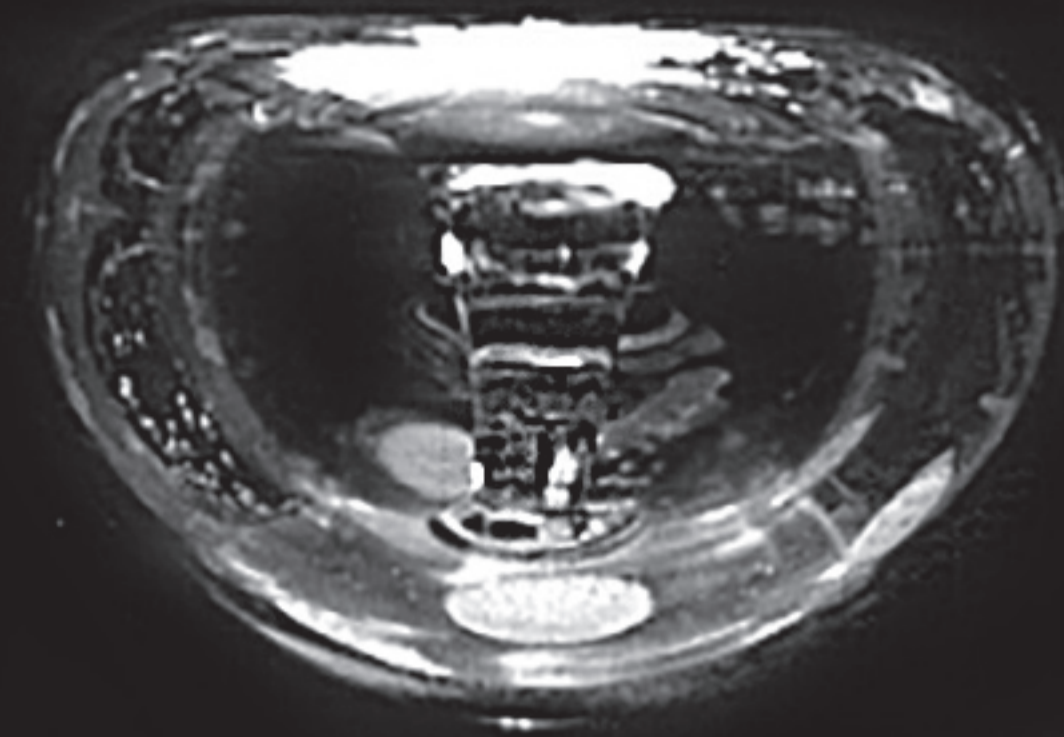


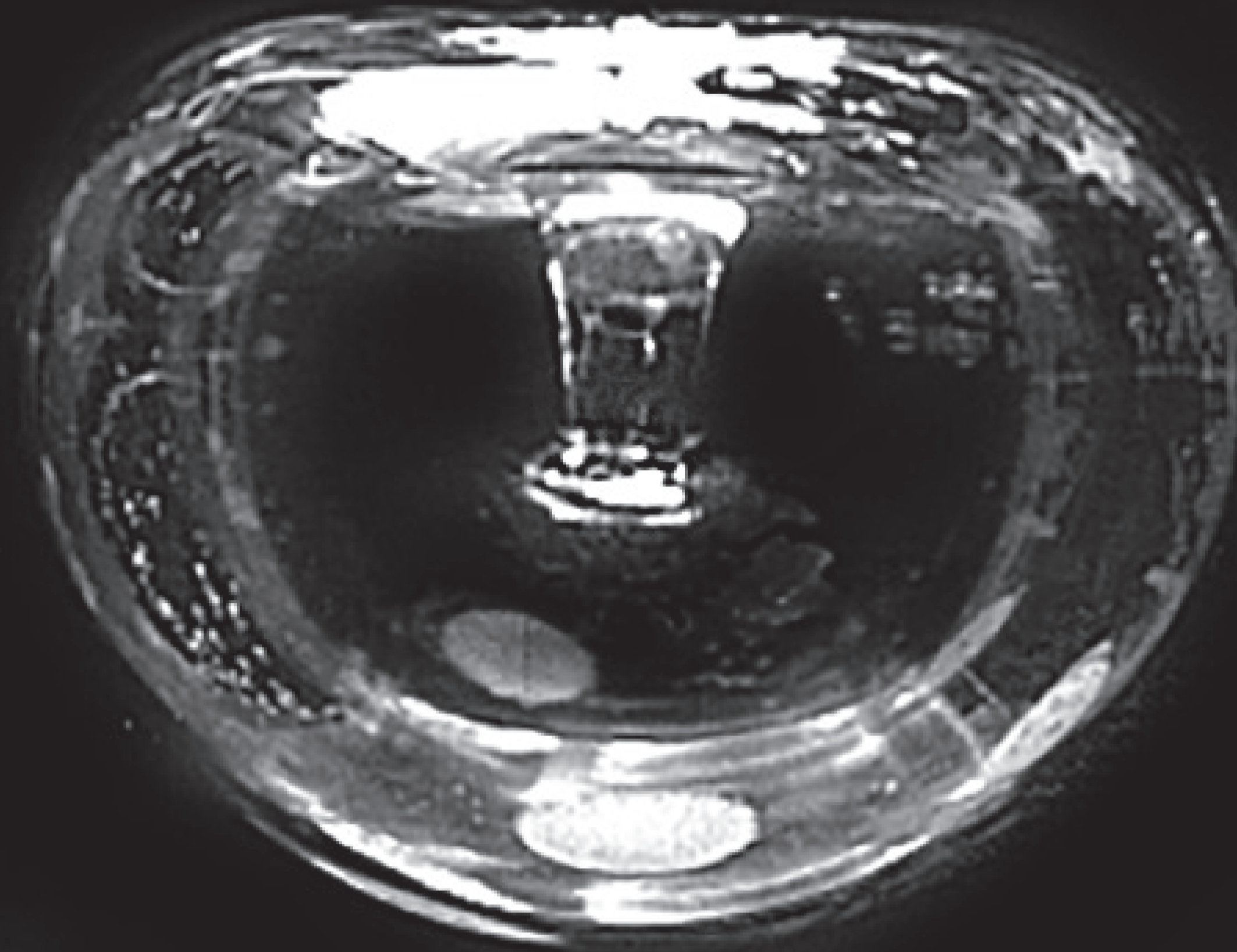
The inner world of a collapsing bubble

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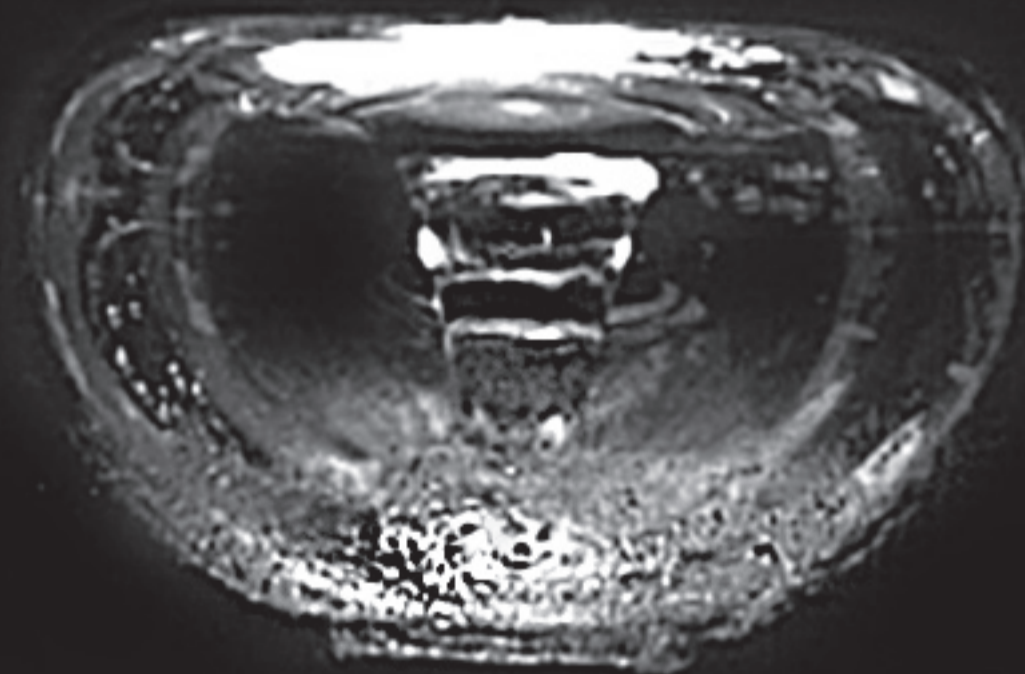


1

As the bubble expands nearby a free surface, it generates a pressure gradient between itself and the surface leading to a formation of a re-entrant microjet.

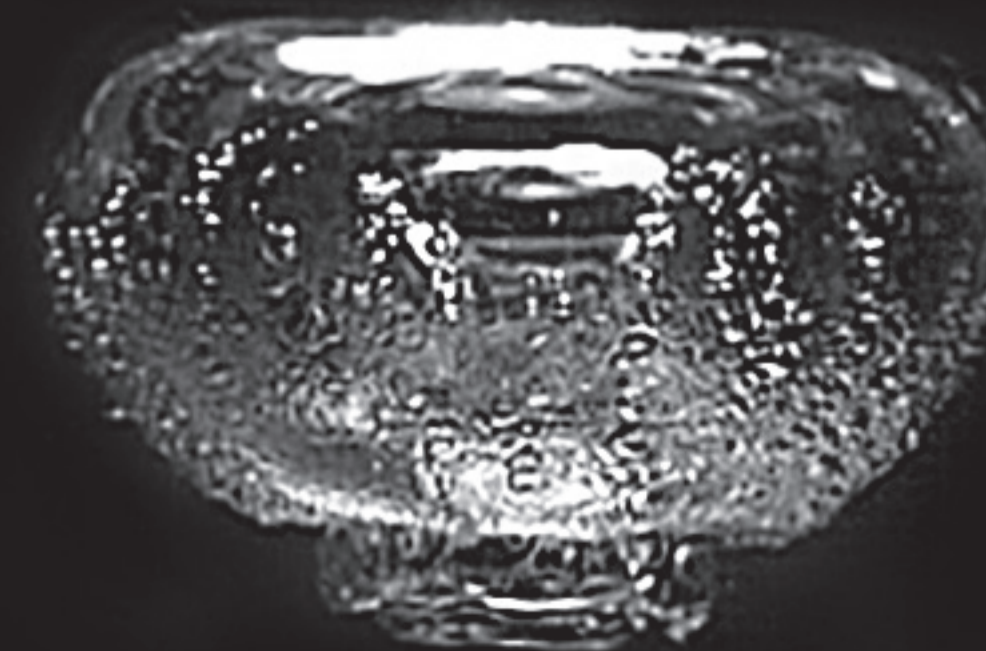


A centimetric bubble is created by means of a focused laser pulse in water nearby a free surface.



2

Well before reaching its minimum radius, the collapsing bubble is pierced by the free surface-induced jet. The jet impact causes the first shock wave to be emitted.
 $Re \sim 10^5$, $We \sim 10^4$



3

Following the impact, part of the liquid jet propagates along the bubble interface and the rest continues to pierce the wall while entraining a pocket of vapor.



5

The liquid propagates and recirculates along the toroidal bubble walls. The bubble collapse is accelerated due to the vapor entrainment.



4

An ejecta-sheet resulting from the jet impact shoots microdroplets onto the bubble wall, resulting in capillary wave formation on the interface.