1051-53-103   **Sigurd B. Angenent**, **M. Cristina Caputo** and **Dan F. Knopf***
(`danknopf@math.utexas.edu`), University of Texas, Department of Mathematics, 1 University
Station, C1200, Austin, TX 78712-0257. *Minimally invasive surgery for Ricci flow singularities.*

We construct smooth forward Ricci flow evolutions of singular initial metrics resulting from rotationally symmetric neck-pinches on S^{n+1}, without performing an intervening surgery. In the restrictive context of rotational symmetry, this construction gives evidence in favor of Perelman's hope for a "canonically defined Ricci flow through singularities". (Received August 19, 2009)