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Blood Clot Emulsification via Ultrasonic Thrombolysis Device

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Abstract : Patients with blood clots in their brains can experience problems with their vision or speech, seizures and general weakness. To treat blood clots, clinicians presently have two options. The first involves drug therapy to thin the blood and thus reduce the clot. The second choice is to invasively remove the clot using a plastic tube called a catheter. Both approaches carry a high risk of bleeding, and invasive procedures, such as catheter intervention, can also damage the blood vessel wall and cause infection. Ultrasonic treatment as a potential alternative therapy to break down clots is attracting growing interests due to the reduced adverse effects. To demonstrate the concept, in this investigation a microfabricated ultrasonic device was electrically packaged with printed circuit board to treat healthy human blood. The red blood cells could be broken down after 3-hour ultrasonic treatment.

Keywords : microfabrication, blood clot, ultrasonic thrombolysis device, ultrasonic device
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