INTRAVASCULAR LITHOTRIPSY CATHETER WITH INTERFERING SHOCK WAVES

ABSTRACT

The present invention provides a catheter for treating an occlusion in a body lumen. The catheter includes an elongated tube, a first electrode pair and a second electrode pair each configured to generate shock waves. The catheter also includes a flexible polymer enclosure that is fillable with conductive fluid and wrapped circumferentially around at least a portion of the elongated tube such that it surrounds the first and second electrode pairs. The first and second electrode pairs can be arranged relative to one another to promote interference between shock waves generated at the electrode pairs when voltage is delivered across the electrodes of each pair. Electrode pairs can be longitudinally adjacent (spaced a relatively small longitudinal distance apart), longitudinally aligned (at the same longitudinal location), circumferentially offset (offset about the circumference of the catheter), circumferentially aligned (at the same circumferential location), or any combination of any of the above.

(FIG. 2A)