

عنوان مقاله:

A LINEAR ARRAY TRANSDUCER DESIGN FOR THE PURPOSE OF GAS EMBOLOTHERAPY

محل انتشار:

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خلاصه مقاله:

Gas embelotherapy is a novel approach which can be used to treat the highly vascularized tumors such as Hepatocellular carcinoma (HCC). In this approach usually small droplets which are small enough to pass through the capillaries are introduced to the body via intravenous injection. These droplets then vaporize in the desired location using focused ultrasound. The frequency of the waves produced for this application are in the range of 1 to 10 MHz. The transducer which has been used in most papers studying this subject was a spherical single element transducer which has a fixed focal length. In this study, a linear phased array transducer with variable focal length is introduced and some of its parameters are optimized for the purpose of gas embolotherapy. The transducer ability to focus the ultrasound is shown and it is observed that setting the elemental pitch to be a bit higher than half the wavelength would be ideal for Gas embolotherapy applications.

کلمات کلیدی:

Gas embelotherapy, tumor necrosis, medical ultrasound

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