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Plenary conference

Diagnostic and therapeutic applications of ultrasound in medicine

Abstract

Ultrasound applied in medicine offers a wide range of possibilities, both in the field of diagnostic ultrasound and real-time support for interventional procedures, as well as in the field of therapeutics. In the diagnostic field we will discuss B-mode, second harmonic, Doppler, elastography, contrast-enhanced ultrasound, image fusion and 3D. The biological effects of ultrasound are twofold: generating heat and generating cavitation phenomena. These two phenomena are the ones that are enhanced in therapeutic applications using high-intensity focused ultrasound. On the one hand we can produce heat coagulative necrosis (HIFU: high intensity focused ultrasound) and on the other hand tissue destruction (histotripsy).