

Experimental ablation of the pancreas with high intensity focused ultrasound (HIFU) in a porcine model

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Abstract :

The aim of this study was to determine the feasibility and safety of high intensity focused ultrasound's (HIFU) in pancreatic diseases. Twelve pigs were divided into three groups. The pancreases of pigs in Group A were ablated directly with HIFU, but those in Group B and C ablated by extracorporeal HIFU. The pigs in Group C were sacrificed at day 7 after HIFU. Serological parameters were determined pre-operation and post-operation. The entire pancreas was removed for histological examination. Each animal tolerate the HIFU ablation well. The complete necrosis was observed in targeted regions. The margins of the necrotic regions were clearly delineated from the surrounding normal tissues. Infiltration of inflammatory cells and phorocytosis on the boundary were found in group C. Blood and urine amylase levels were relatively steady after HIFU. No acute pancreatitis or severe complications occurred. In conclusion, HIFU ablation on the pancreas was safe and effective in experimental pigs.

Key Word :

High intensity focused ultrasound, Pancreas, Ablation

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