

## マイクロ波の医療への導入

### —マイクロ波手術機器の開発—

## New horizon of Microwave in Medical Field

### Invention of Surgery Assisting Devices using Microwave

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#### Abstract

We have first in the world developed microwave surgery assisting devices since 2003. The reason why microwave does not interfere MR image was this occasion. Scissors type and tweezers type were commercialized at 2017. They have couples of advantages, strong sealing effect, less smoke and mist, less stimuli on muscle and nerve and immediate on - off in switch. Microwave devices might alternate traditional devices in open, laparoscopic surgery, robotic surgery, forceps for flexible endoscopy and end artery catheter.

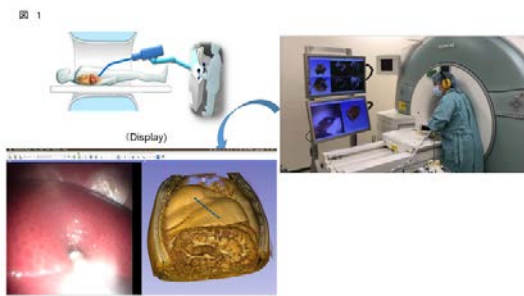


図1 3次元リアルタイム MR 画像誘導下手術、左上:システムの全貌。右上:内視鏡下、豚肝凝固手術。左下:ディスプレイ内容、左:マイクロ波穿刺針による肝凝固中、右:3次元画像(矢印は内視鏡位置を示す)。



図2 ハサミ型の世代別開発