Multipolar radiofrequency ablation device

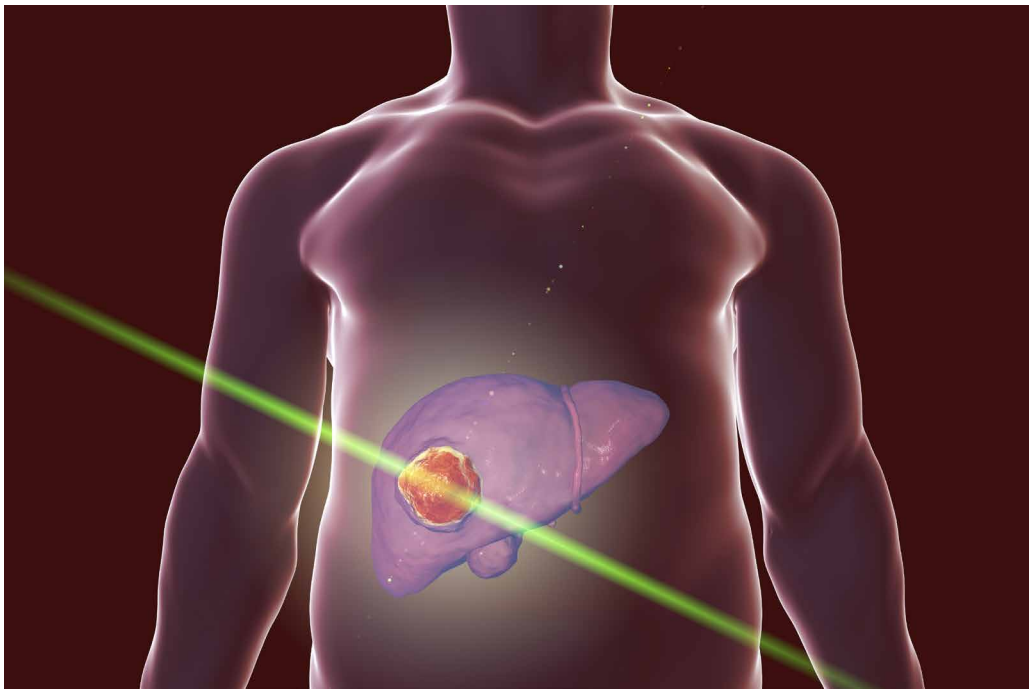
Reference No: B77123

CHALLENGE

Radiofrequency ablation (RFA) is a useful tool for localized treatment of solid tumors. With this technique an electric current is applied by the RFA device to damage the tumor tissue by thermal heating around the entry point. Limitations for existing RFA devices are given by the tumor size since the electrical conductivity is rapidly reduced within the damaged tissue. A further disadvantageous aspect of current RFA probes is their mono-axial design, forcing a positioning of the probe centrally through the tumor, which is dangerous when located near critical structures, such as large vessels or nearby organs.

INNOVATION

The RFA probe overcomes all these limitations with its innovative design. The outer shaft of the probe consists of a variable number of spreadable parts that can be moved along the longitudinal axis extending beyond the central inner shaft. Both the inner and outer shafts function as electrodes. This design is characterized by improved stability of the elements facilitating a larger ablation volume. The central shaft as a core element remains in one distinct proximal position for particularly high precision without the need to penetrate centrally or even beyond the tumor. Overheating is prevented by the large diameter of spreadable elements, allowing for higher energy throughput, and by the possibility to change electrode polarities. Fluid channels in the shaft enable maintenance of electric conductivity e.g. by infusion of electrolyte solutions.



COMMERCIAL OPPORTUNITIES

Advantages over current RFA probes:

- **Enlarged ablation volume** by using several strong elements as electrodes which spread apart beyond the central shaft.
- Central core element remains in proximal position allowing for **particularly high precision**
- Larger diameter of spreadable elements enable **higher energy** and **prevent damage**
- Changing polarity of the electrodes **prevents overheating**
- Fluid channels in the shafts for **maintenance of electric conductivity** e.g. by infusion of electrolyte solutions

DEVELOPMENT STATUS

Currently seeking for partners for further development and licensing

BayPAT

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IP rights:
PCT filed in 2018

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