ABSTRACT

MULTI-WAVELENGTH LASER SYSTEM FOR THERMAL ABLATION IN NEUROSURGERY

A multi-wavelength laser system for thermal ablation in neurosurgery, including: a magnetic resonance guidance unit (100), a laser ablation unit (200), and an optical fiber catheter unit (300). The laser ablation unit (200) is configured to generate a surgical path and a surgical plan before a surgery, and regulate a plurality of laser modules (202) and cooling modules (2023, 2024) in real time during the surgery to implement precision ablation of tissues, and the optical fiber catheter unit (300) has a plurality of ablation channels and can implement ablation of a tumor of any scale. The multi-wavelength laser system allows for use of both a multi-wavelength treatment plan and a high-power single-wavelength single-channel treatment plan for precise conformal ablation on regular or irregular tumors, thereby greatly increasing the application range and use flexibility of the laser thermal therapy.

Figure 1