



Technology Opportunity, Ref. No. UZ-11/347

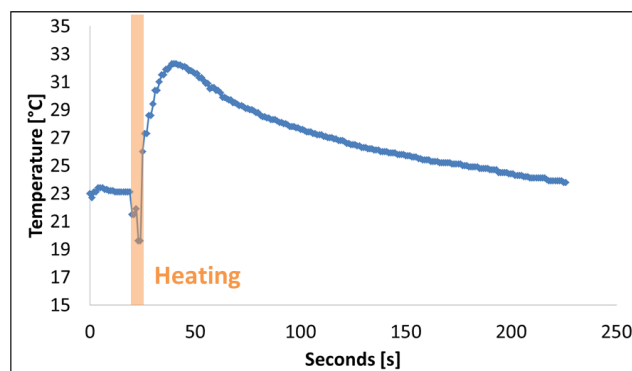
Vessel sealing device with limited heat damage

A vessel sealing device has been developed that combines a conventional vessel sealing instrument with a thermal-active coating to limit tissue damage caused by peripheral heating.

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Background Vessel-sealing surgical devices have significant advantages including reduced hemorrhage time and operating time. However, these instruments are often not used for delicate surgery due to thermal spread, peripheral tissue heating and worry about nerve and tissue damage.

Invention A novel vessel-sealing device with limited temperature increase in the surrounding tissue has been developed, allowing it to be used close to nerves (thyroid surgery, prostate surgery, gastric surgery). The device combines conventional vessel-sealing devices with a thermal-active coating. Heat at the tissue-electrode interface is adsorbed away from the tissue without disturbing the electrical current of the device. This method of limiting the heat is passive for the surgeon, requiring no additional hand, activation, regulation or deactivation.



The Figure shows the temperature of the thermal-active coating before, during and after the heating cycle of the vessel-sealing device in contact with tissue. Upon activation of the electrosurgical device (i.e. heating) the coating absorbs heat at the tissue-electrode interface, which would otherwise flow into the tissue next to the electrodes and possibly damage the tissue.

Fields of Use This technology is useful for all applications where thermal spread and peripheral tissue heating of electrosurgical devices is potentially harmful.

Patent Status Patent filed

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