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# History of Power Sources in Endoscopic Surgery

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## Abstract

The history of energy sources used in surgery is inextricably linked to the history of electricity. Milestones include identification of safe electrical waveforms that can be used in the human body, patient isolation to prevent alternate-site burns, bipolar energy sources to negate capacitance injuries, laser energy, and the combination vessel sealing devices commonly used today. Engineering efforts to eliminate many of the hazards of electrosurgery are critical to how we practice modern gynecologic surgery. The introduction of bipolar instruments, increasing the safety of monopolar electrosurgery by not using hybrid trocars, and introduction of active shielding of the instruments from stray radiofrequency energy using intelligent secondary conductors have led to the re-emergence of electrosurgery as the universal surgical energy source. The low ongoing costs and the presence of electrosurgical generators in all hospitals readily enables electrosurgery to be the mainstay. Expensive lasers are confined to specialized centers, where they continue to be used, but for a long while filled a gap created by complications of electrosurgery. Sophisticated power sources continue to be introduced and include the ultrasonic scalpel, plasma surgery, and various devices for sealing vessels, all of which have advantages and