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Role of Plasma Discharge in Division of Prostatic Tissue ARLEN WARD, CARL ALMGREN, Covidien Energy-based Devices, ZENG-QI YU, Colorado State University, JOE SARTOR, Covidien Energy-based Devices, GEORGE COLLINS, Colorado State University — During the treatment of benign prostatic hyperplasia electrical energy is used to separate prostatic tissue and remove it as a urinary obstruction. This surgical procedure is often performed in a saline environment, and current paths change as the tissue and fluid are heated. This study shows that a plasma discharge at the electrode is necessary to provide the current densities necessary to vaporize portions of the prostatic tissue in order to facilitate removal. This behavior is predicted in finite element simulations, and verified with color schlieren imaging and ex vivo bovine prostate tests.

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