

Ablation of stage T1/T2 prostate cancer with permanent interstitial temperature self-regulating rods

Tucker, Robert D.

Huidobro, Christian

Larson, Thayne

Purpose: To determine if stage T1/T2 prostate cancer can be treated safely and effectively with interstitial thermal ablation. **Patients and Methods:** Twenty patients with biopsy-confirmed prostate cancer were enrolled in the protocol. The average age was 71.0 years, and the pretreatment prostate specific antigen (PSA) concentration ranged from 2.5 to 10.7 ng/mL and the Gleason sum from 3 to 7. An array of small biocompatible magnetic alloy rods was placed in the patients percutaneously in a procedure analogous to the placement of brachytherapy seeds. Rods were placed end-to-end and no further than 1 cm apart; rods extended to the capsule and were placed at the capsule in the rectal groove. The rods are temperature self-regulating and heat to 70°C when placed in an alternating magnetic field. Each patient was treated in a coil system that supplies a uniform magnetic field throughout the patient's pelvis for a single 60-minute session. Urethral cooling and rectal temperature monitoring was