American Brachytherapy Society (ABS) Recommendations for Transperineal Permanent Brachytherapy of Prostate Cancer

Reviewers: Li Liu, MD

Background
The proportion of patients treated by permanent brachytherapy has been increasing rapidly in the past few years due to relatively low morbidity, good 10-year outcome, and better public awareness. The American Brachytherapy Society (ABS) published the updated recommendations for transperineal permanent brachytherapy of prostate cancer.

Indications
- Brachytherapy as monotherapy is indicated in patients with stage T1 to T2a, Gleason sum of 2-6, and PSA < 10ng/ml prostate cancer.
- When brachytherapy is used in combination with external beam radiotherapy (EBRT), patients with stage T2b, T2c or Gleason sum of 8-10 or PSA > 20ng/ml are candidates for brachytherapy.
- Patients with initially large prostate (>60cc) that have downsized sufficiently can be treated with brachytherapy.

Contraindications
- Life expectancy < 5 years, large or poorly healed transurethral resection of prostate (TURP) defect, unacceptable operative risks, and distant metastases.

Procedures
The ABS recommends that dosimetric planning of the implant be carried out for all patients before seed insertion. The ABS endorses the use of the American Association of Physics and Medicine (AAPM) Task Group No. 43 (TG-43) recommendation for 125I dosimetry. The recommended dose for 125I (TG-43) and 103Pd are 144Gy and 115-120Gy, respectively when brachytherapy is used as monotherapy. For a brachytherapy boost, the recommended dose is 100-110Gy and 80-90Gy, respectively. The ABS has no preference of one radionuclide over the other.

Postoperative dosimetry is recommended for all patients using various techniques. Reports should include the prescribed dose, the dose that covers 100% and 90% of the prostate volume (D100 and D90), and the percentage of prostate volume that received the prescribed dose (V100). Close postoperative follow-up with digital rectal examinations (DRE) and PSA at regular intervals is recommended.