

Prostate Fiducial Marker Placement in Patients While on Anticoagulation: Feasibility Prior to Prostate SBRT

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Abstract

Objectives: Fiducial marker placement is required in patients undergoing robotic-based Stereotactic Body Radiotherapy (SBRT) for prostate cancer in order to track the six degrees of prostate motion that occur intrafractionally, during treatment. Many patients take anti-coagulant medication due to other comorbidities. Anticoagulation therapy can cause patients to bleed during procedures and, in general practice, are often temporarily discontinued prior to invasive medical procedures to reduce that risk. However, some patients may not be able to temporarily discontinue anticoagulation therapy due to an increased risk of a thromboembolic event from their comorbid medical conditions. We looked at a series of our patients who were unable to discontinue anticoagulation therapy prior to fiducial marker placement and report on their outcomes to assess whether they experienced bleeding complications from the procedure.

Methods: From August, 2015 to January, 2016, 16 consecutive patients on chronic anticoagulation therapy and who were not cleared to stop these medications underwent fiducial marker placement into the prostate for treatment and planning purposes. The most common indications for uninterrupted anticoagulation therapy in this cohort included: recent stent placement (6=number); myocardial infarction (6=number); pulmonary embolus (2=number); and atrial fibrillation (2=number.) Anticoagulation therapy included Aspirin (7=number); Plavix (5=number); Coumadin (3=number); Lovenox (2=number); Eliquis (1=number); Brillinta (1=number); Pradaxa (1=number); and Effient (1=number). 6 patients were on more than one of these agents at the time of fiducial marker placement. All patients had Emla cream placed on the perineum and lidocaine gel placed into the rectum prior to the procedure for numbing purposes. A transrectal ultrasound was placed for visualization of the prostate and normal anatomy as well as to provide real time image guidance of marker placement during the procedure. 2 needles with 2 fiducial markers and a spacer in each were placed transperineally into the prostate under ultrasound guidance using a brachytherapy grid. The needles were then removed after the fiducial markers were placed and gentle pressure was applied to the perineum by the nursing staff. All patients were monitored for bleeding afterwards by a registered nurse.

Results: All 16 consecutive patients who were on anticoagulation and underwent fiducial marker placement were discharged home the same day of the procedure. No patient experienced significant bleeding.

Conclusions: Transperineal fiducial marker placement in patients who are unable to

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discontinue anticoagulation therapy appears to be safe. Patients should be closely monitored after the procedure for bleeding complications. This series suggests that active anticoagulation is not an absolute contraindication to fiducial marker placement in patients undergoing stereotactic body radiation therapy for prostate cancer.