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# Five day Accelerated Partial Breast Irradiation (APBI) using Stereotactic Body Irradiation Therapy (SBRT) in stage 0-II breast cancer: A preliminary report of 69 cases

**Background**: Randomized trials in Stage 0-II breast cancer with 10 year follow-up have proven that Accelerated Partial Breast Irradiation (APBI) given via radiation implant in 5 days is equivalent to Whole Breast Radiation Therapy (WBRT) in 6 weeks in regard to tumor local recurrence (LR). However, implants are invasive and complications, including infection and soft tissue necrosis requiring possible mastectomy have been significant. Recently APBI using non-invasive Intensity Modulated Radiation Therapy (IMRT) in 5 days was shown to be equivalent to WBRT in 6 weeks with 5 year follow-up, with respect to LR. APBI IMRT was superior in regard to side effects, and cosmesis.

**Objectives**: In the randomized clinical trial of APBI IMRT, the Clinical Target Volume (CTV) was defined by the injection of individual fiducial markers bordering the surgical cavity. We have used the simpler less labor intensive Biozorb fiducial system to localize the CTV for SBRT.

**Materials and Methods**: Between 2017 and 2019, 69 patients underwent SBRT targeted to Biozorb defined CTV. Eligible patients were older than age 40, had tumor sizes < 3 cm, negative surgical margins, and negative node dissections. SBRT dose was 30 Gy given in 5 fractions. The Planning Target Volume (PTV) ranged from 27 to 355 cc with a median of 80 cc. PTV = CTV + 1-2 cm.

**Results**: Follow-up ranged from 1-18 months with a median of 9 months. LR has been 0% (0/69). There were no skin reactions. Cosmetic results were rated excellent in 100% (69/69) of cases.

**Conclusions**: Non-invasive APBI with SBRT given over 5 days targeted to Biozorb has resulted in LR, complications, and cosmetic results which compare favorably to invasive APBI given via implant. At last follow-up, there have been no LR, skin reactions, or complications. Cosmesis has been excellent in 100% of patients.

## Biography

Rufus Mark graduated from Yale University with Phi Beta Kappa and Summa Cum Laude honors. He went on to graduate from UCLA Medical School and then Residency in Radiation Oncology also at UCLA. He has extensive clinical experience in: High Dose Rate (HDR) Radiation Implants of the Prostate, Breast, Cervix, and Lung; Stereotactic Body Radiation Therapy (SBRT) of the Lung, Prostate, Breast and Liver; Stereotactic Radiosurgery (SRS) for Trigeminal Neuralgia, Parkinson's Disease, and multiple brain tumors; and Intensity Modulated Radiation Therapy (IMRT) of all sites. He has made more than 250 presentations of papers/abstracts at peer reviewed meetings including ASTRO, ESTRO, ACRO, ARS, ABS, and RSNA. He was unanimously voted the best lecturer and clinical instructor by the Baylor Scott and White Residents in 2017-2018. He is currently Medical Director of Radiation Oncology at the Baylor Scott and White Medical Center in Waxahachie TX.

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