Issue 28: January 2015

AccuBoost®
for image guided breast irradiation

BOOSTER CLUB

CEO'S CORNER

This issue covers six (6) recent additions to the AccuBoost users group. It reports on news coverage for the procedure and the synergy of the 3-dimensional tissue marker, BioZorb, with AccuBoost for precise targeting of partial breast dose.

The highlight of this issue is a recent Brachytherapy Journal article that reviews the eligibility rates for the procedure in an academic institution and the reasons for ineligibility.

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ACCUBOOST EXPANDS TO NEW SITES

The number of AccuBoost sites is steadily increasing, with a number of new facilities added in recent months. A few of the new installations are featured in this issue:

The AccuBoost team at Oncology Therapies of Vista, from left Elizabeth Testa, RTT, therapist; Eva Lean, MD; Susan Davis, RTT, therapist; Shikuan She, Chris Lok, James Kang and Zion Huang, physicists, surrounding the first patient seated at the center, Edna Cranney, in AccuBoost robe.

Oncology Therapies of Vista, in California is one of the latest additions to the group. This facility, under the leadership of Drs. Eva Lean, Anuradha Koka and Patrick Linson started patient treatment in October.

Western Regional Medical Center, a CTCA Hospital, in Goodyear, AZ is scheduled to launch the AccuBoost procedure in the coming weeks. Dr. Marnee Spierer is leading the AccuBoost offering at this site. She is an AccuBoost veteran – as she was one of the primary AccuBoost users while practicing at the Farber Center for Radiation Oncology in New York City.

Mary Washington Hospital in Fredericksburg, VA is another new installation. AccuBoost procedures at this site will be supervised by John Chinault MD, the lead radiation oncologist. Bushra Rana, PhD and William Pan, MS from TeamNet Medical will be providing the physics support at this site.

University of California in San Diego (UCSD) is among the top research and teaching institutions in the US. This site has a busy breast brachytherapy practice. UCSD will be adding the AccuBoost procedure for tumor bed boost as well as a noninvasive alternative to other partial breast brachytherapy options. Drs. Catheryn Yashar and John Einck will be the primary radiation oncologists involved with the AccuBoost offering.

Cont. on next page...

AccuBoost at ABS

AccuBoost will be exhibiting at Table 7 at the 2015 ABS Annual Meeting, April 9-11 at the Renaissance Seaworld Hotel in Orlando, Florida.

ACCUBOOST IN THE NEWS

AccuBoost was featured in numerous media events in October during the breast cancer awareness month. In particular, AccuBoost was covered by WBAL in Baltimore, on October 13. The TV segment features an interview with Dr. Diana Griffiths of Saint Agnes Hospital who explains how this procedure fits in the mix of the latest developments for treating breast cancer. She states "…it [AccuBoost] is the only method of giving radiation - that allows the treating physician to observe the tumor [bed] in real-time as the treatment is being given." St Agnes Hospital is the only facility in Maryland that offers the AccuBoost procedure. AccuBoost has been available to St. Agnes breast cancer patients since 2013, under the leadership of Richard Hudes, MD.

The interview is available on the AccuBoost website and can be viewed by accessing *www.accuboost.com/pr-wbal*

ACCUBOOST EXPANDS TO NEW SITES *(cont.)*

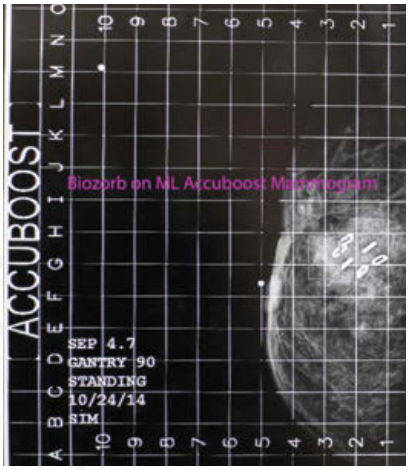
Littleton Radiation Oncology is a community based freestanding facility in the suburbs of Denver. Under the leadership of David Schreiber, MD, this site is the first in Colorado to offer the AccuBoost procedure. Dr. Schreiber states that "I have scheduled my first patient for treatment in January, who was already excited about AccuBoost when informed about the prospects of NO tubes in her breast."

FROG
FIRST RADIATION & ONCOLOGY GROUP
FIRST IN CANCER CARE

Beaches Radiation Oncology in Jacksonville is a member of the First Radiation & Oncology Group (FROG) physician practice and a 21st Century Oncology facility. This site received the equipment in November and is expected to begin treatments in early 2015.

BIOZORB: A COMPLIMENTARY TARGETING AID FOR ACCUBOOST

The BioZorb product has been evaluated by half a dozen AccuBoost users and is proving to be an ideal aid for targeting of the tumor bed dose. This biodegradable 3D device, with six permanent titanium markers when sutured in the lumpectomy cavity, clearly designates the boundaries of the excision site. It serves as a method of communication between the breast surgeon and the radiation oncologist as to the exact target for radiation therapy. BioZorb is an enabling device for non-invasive radiation therapy in oncoplastic procedures intended for conserving breast cosmetics.



AccuBoost image with BioZorb in the M-L direction courtesy of Anand Kuruvilla, MD

AccuBoost users who have evaluated the product find it to be an excellent match. "This device combined with AccuBoost has reduced delivery of partial breast dose to an exact science" states Dr. Anand Kuruvilla of the FROG group, one of the early adopters of the AccuBoost/BioZorb combination.

AccuBoost at ACRO

Visit Booth #5 at the 2015 ACRO Annual Meeting May 14-16 in Arlington, Virginia

ACRO
American College of RADIATION ONCOLOGY
Integrating Science and Technology into Patient Care

A NEW PUBLICATION ON "PATIENT SELECTION" FOR ACCUBOOST

ELSEVIER

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BRACHYTHERAPY

Brachytherapy 13 (2014) 579–583

Factors influencing eligibility for breast boost using noninvasive image-guided breast brachytherapy

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Jaroslaw Hepel, MD

A recent publication in Brachytherapy Journal analyses the patient eligibility for noninvasive image-guided breast brachytherapy (NIBB), as AccuBoost is referred to in the literature by its generic description. The main highlights of this article authored by Jaroslaw Hepel, et al are summarized here:

Method - consecutive patients with early stage breast cancer who were eligible for breast conserving therapy and boost to the tumor bed were evaluated in this study. Patients with very small breast, cup size A or smaller for whom breast immobilization were deemed difficult, were excluded from the study. All other patients were evaluated for boost as their breast was immobilized by mammography compression plates. In all cases, the tumor bed was identified by post surgical changes and/or surgical clips. CT simulation and preoperative mammograms and/or MRI were used to assist in localizing the tumor bed. Patients for whom a compressed breast thickness of 10 cm or less could not be achieved were excluded from the study. The study's main goal was to document the rate of eligibility and reasons for ineligibility.

Patient characteristics - Six of the 52 patients were excluded because of small breasts. Thirty three (72%) were successfully treated with NIBB. The reasons for ineligibility of the rest were: difficulty in identifying the tumor bed in 5, inability to position the patient or the breast in 5, and extremely posterior tumor beds in 3 patients.

Results - The results of the study, tabulated below, showed strong correlation with breast size, tumor bed quadrant and presence of surgical clips. The study showed that the likelihood for eligibility increased steadily with breast size. While only 50% of breasts of cup size B were eligible, the percentage of those with DD cup size was 80%. Patients with tumor bed located in the central breast or upper quadrant were more likely to be candidates for NIBB than tumor beds in the lower quadrant. The study shows the contribution of surgical clips as the eligibility of patients with clips was 79% vs. 45% for patients with no clips. Even though posterior tumor beds can be a challenge for NIBB, however, 73% of posterior located tumor beds were still good candidates for the procedure.

Tumor bed identification - The ability to target the tumor bed is an important pre-requisite for NIBB, as clearly pointed out in the study. The most common ways of identifying the boost target is to rely on surgical clips and/or post surgical changes. Figures on the right point out two typical cases where the post surgical changes (in Fig a) and surgical clips (in Fig b) are used for identifying the isodose center and the field (applicator) size. *Cont. on next page...*

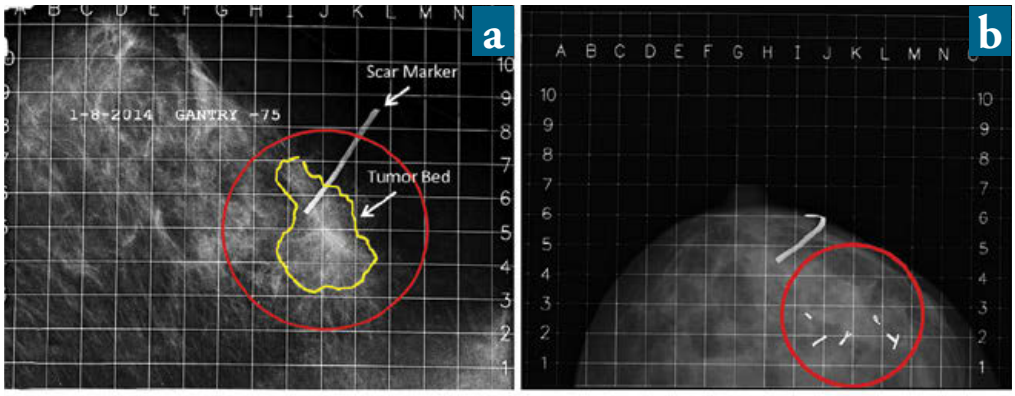
FACTORS THAT INFLUENCE NIBB BOOST ELIGIBILITY

Breast (Cup) Size	(%) Eligible
B	50
C	71
D	77
≥ DD	80

Tumor Bed Location	
Central	100
Upper Outer Quadrant	72
Upper Inner Quadrant	67
Lower Outer Quadrant	38
Lower Inner Quadrant	25

Surgical Tissue Markers	
Surgical Clips	79
No Clips	45

"PATIENT SELECTION" *(cont.)*



(a) AccuBoost image showing a tumor bed that is well defined by postsurgical changes. (b) AccuBoost image showing dense breast parenchyma with no discernible postsurgical changes to guide treatment, but the tumor bed is well delineated by surgical clips that were placed at the time of lumpectomy. Using these surgical clips, the patient can be effectively targeted and treated with noninvasive image-guided breast brachytherapy boost.

Discussions - The importance of tumor bed boost is well established. Although 3D treatment planning improves targeting accuracy, it does not eliminate the errors in daily clinical set ups when using conventional external beam treatment. NIBB is a method that allows for precise targeting of the tumor bed where the daily positioning error [by virtue of a real-time imaging] is minimized. Furthermore, by virtue of using compression to move nontarget breast tissue out of the treatment field the volume of tissue taken to high dose is minimized – as is the exposure to heart and lungs. However the study points out that the procedure is not without its limitations, as among other reasons patients with small breasts and large breasts that needs to be less than 10 cm must be excluded as well as those who cannot tolerate the procedure.

Conclusion – NIBB boost is practical and achievable in most patients even those with posterior tumor beds close to the chest wall. Patients with large breasts are particularly considered to be ideal candidates. As with other techniques, surgical clips are helpful in defining the tumor bed for accurate targeting of boost dose procedure.

This study, along with many others, is now available to view at
www.accuboost.com/publications-studies

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POSTAGE