

Oral Abstract

Factors Predictive Of Aborted Intraoperative Breast Radiation Using The INTRABEAM® System

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Factors Predictive Of Aborted Intraoperative Breast Radiation Using The INTRABEAM[®] System



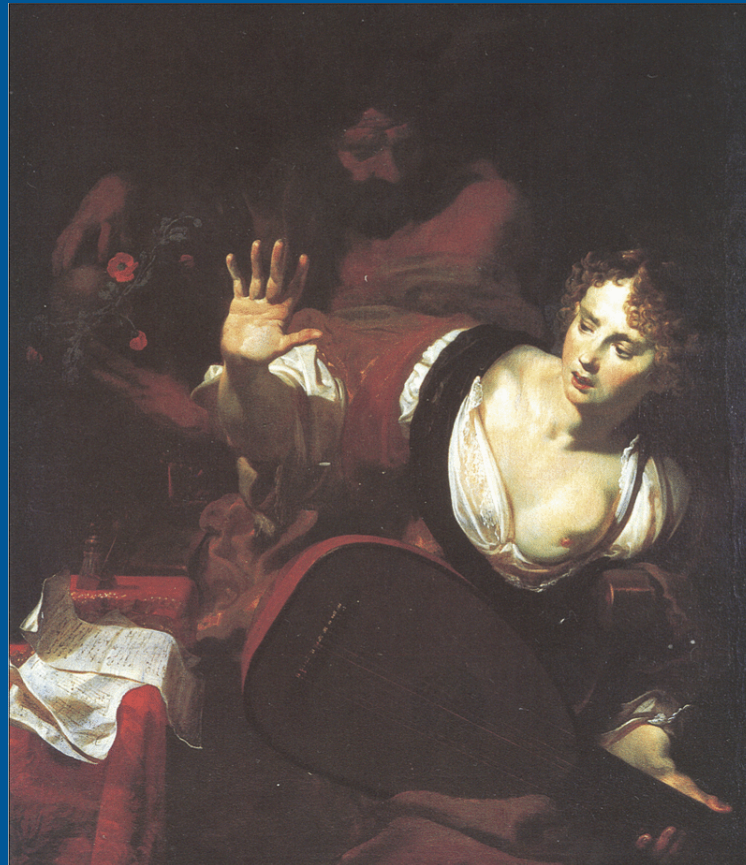
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Background

- APBI –
 - therapy for early stage breast cancer
 - adequate local control
 - minimal morbidity
- IORT - single session during lumpectomy (+SLNB) as definitive XRT or planned boost
- In up to 20% of patients, planned IORT is not completed

Objective

- Evaluate factors predicting failure to complete planned IORT.



Methods

- IRB-approved, retrospective review of consecutive cases from 2011- 2015.
- Eligibility criteria for IORT as definitive radiation therapy included:
 - Age ≥ 60 (age 50-59 cautionary)
 - Invasive ductal or mammary carcinoma
 - Tumor ≤ 3.1 cm, ER positive and clinically node negative

Methods

- Gross pathologic evaluation:
 - Any margin grossly < 5 mm was re-excised before proceeding with IORT
- Intraoperative ultrasound:
 - distance from skin-to-surface of applicator measurement of ≥ 1.0 cm in all directions.
- Decision to abort IORT: discretion of the attending breast surgical oncologist and radiation oncologist



Demographic and clinical features associated with aborted IORT

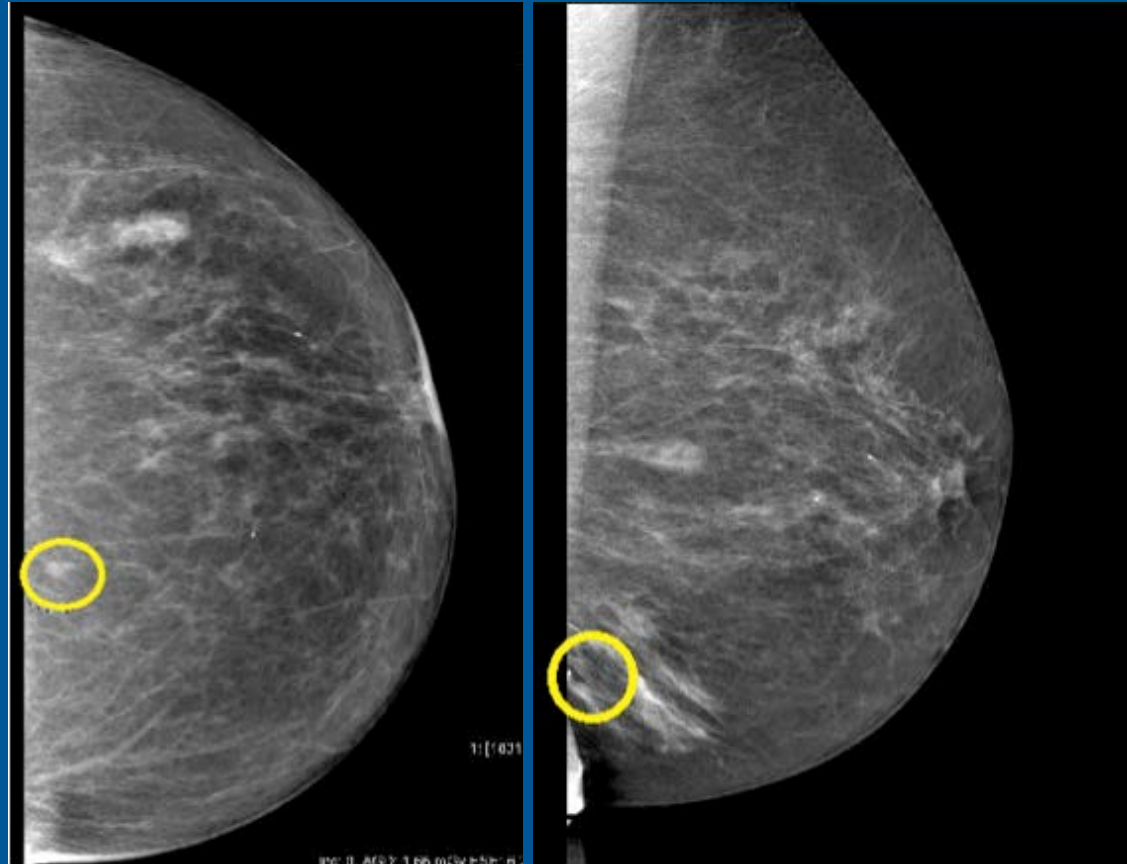
Variable	Completed IORT (n=124)	Aborted IORT (n=21)	p-Value
Age (years), mean \pm SD	71.0 \pm 7	69 \pm 7	0.35
Tumor Size (cm), mean	1.0 (0.3-3.5)	1.3 (0.2-3.5)	0.40
Additional Intraoperative Margin n (%)	59 (48)	17 (81)	0.005
Final Margin Positive n (%)	7 (6)	0 (0)	0.17
Sentinel Lymph Node Positive n (%)	8 (6)	2 (9)	0.77
Received Adjuvant WBRT n (%)	13 (10)	17 (81)	<0.001

Reasons for aborted IORT

	N (%)
Inadequate Distance to Skin	15 (71)
Altered wire localization findings	4 (19)
Equipment failure	1 (5)
Hemodynamic instability	1 (5)

Preop CC and MLO mammogram views from aborted IORT case

- Tumor characteristics:
 - 4mm IDC, grade I
 - ER/PR+, Her2neu –
- Re-excised inferior margin based on gross pathology examination.
- Intraoperative US:
 - IORT aborted due to <7mm distance from skin surface-to-device.



Completed versus Aborted IORT Cases by Surgeon

	Completed (n=124)	Aborted (n=21)	% Aborted
Surgeon A	67	2	3
Surgeon B	26	1	4
Surgeon C	21	8	27
Surgeon D	7	7	50
Surgeon E	3	3	50

Conclusions

- Careful preoperative planning and selection
 - uni-centric disease
 - well-defined margins on imaging
 - tumor location remote from skin
 - Larger specimen to reduce the need for additional margins intra-operatively
- Eliminate 90% of aborted cases

Conclusion

- Awareness of these factors during one's IORT learning curve may lower the failure rate.



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