



Outcomes of Selective Whole Breast Irradiation Following Lumpectomy with Intraoperative Radiation Therapy for Hormone Receptor Positive Breast Cancer



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Abstract Number: 581227

Introduction

Lumpectomy with whole breast radiation (WBXRT) is standard treatment for breast cancer.

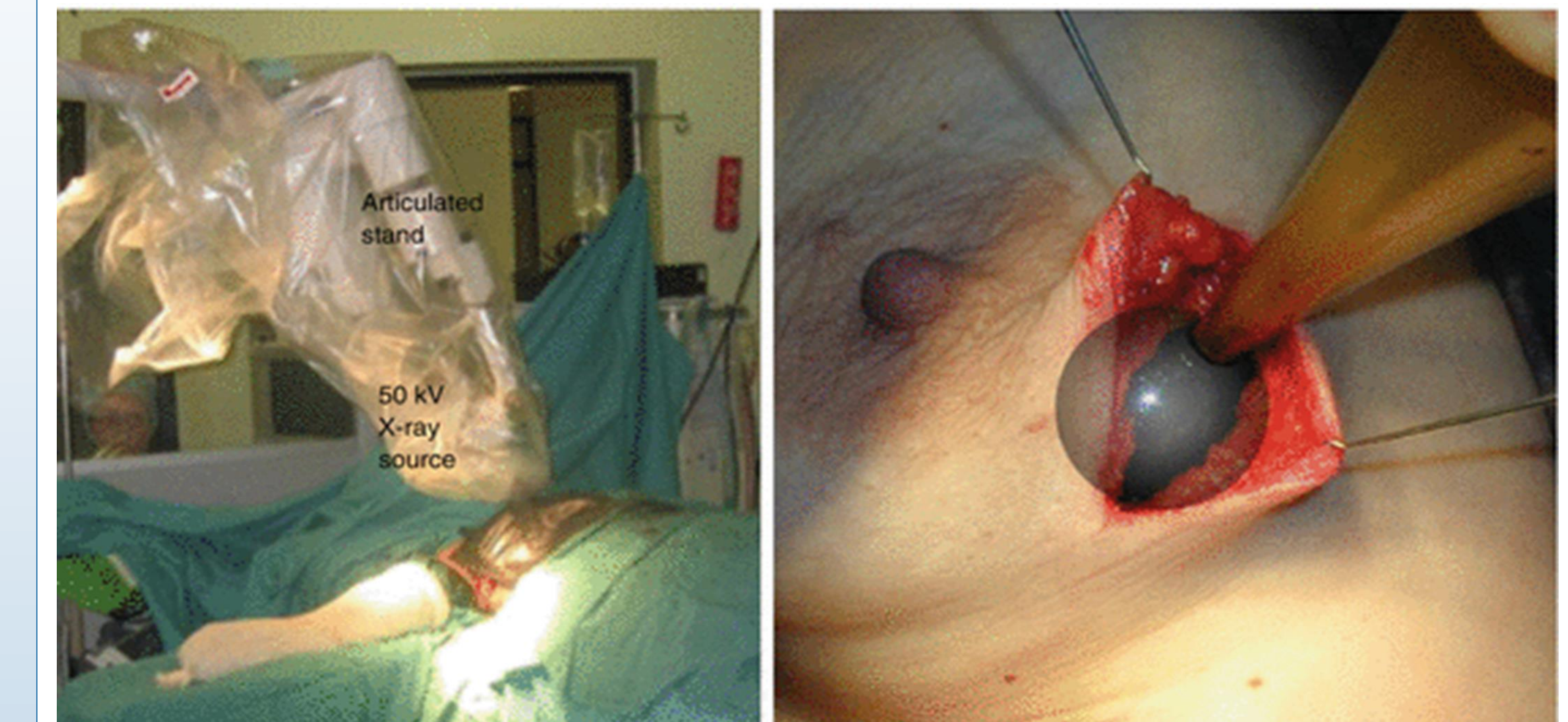
For low risk patients with breast cancer undergoing lumpectomy, the TARGIT-A randomized trial supported intraoperative radiation therapy (IORT) with selective addition of whole breast radiation (WBXRT) based on final clinicopathologic criteria.

Many institutions use expanded TARGIT-A criteria in their recommendation for WBXRT after lumpectomy plus IORT.

AIM: To evaluate local recurrence after lumpectomy plus IORT, based on suitability for IORT alone versus TARGIT-A or expanded TARGIT criteria used by Moffitt Cancer Center (TARGIT-MCC) for addition of WBXRT.

Selection criteria for whole breast radiation therapy after lumpectomy with intraoperative radiation therapy per TARGIT-A and TARGIT-MCC protocols

Clinicopathologic Criterion	TARGIT-A	TARGIT-MCC
Initial margin	Positive* <small>*regardless of re-excision</small>	Positive* <small>*regardless of re-excision</small>
Final margin	<1mm* <small>*regardless of re-excision</small>	<=2mm** <small>**or tumor in re-excised specimen</small>
Final histology	Invasive lobular carcinoma	Invasive lobular carcinoma
Extensive intraductal component (>25%)	If present	If present
Lymphovascular space invasion	Per institution	If present
Positive sentinel lymph node	Per institution	If present
Tumor Size	Not specified*** <small>***Protocol excluded >3.5cm</small>	>3cm



Intrabeam system for intraoperative radiation therapy (used with permission from Elsevier and Dr. Jayant Vaidya)

Results

Local recurrence based on receipt of whole breast radiation therapy and suitability for IORT alone by TARGIT-A and TARGIT-MCC criteria

All IORT patients	No Local Recurrence N=181	Local Recurrence N=13
Suitable for IORT alone (n=140)		
No recommendation for WBXRT	126	8
WBXRT recommended but not completed	1	1
WBXRT completed	4	0
Met criteria for WBXRT (n=54)*		
TARGIT-A	32	2
TARGIT-MCC	18	2

Impact of Adjuvant Therapies on Local Recurrence after Lumpectomy with Intraoperative Radiation Therapy

Adjuvant Treatment	No Local Recurrence N=181	Local Recurrence N=13	P-value
WBXRT, N (%)			
No	160 (88.4)	13 (100.0)	0.368
Yes	21 (11.6)	0 (0.0)	
Endocrine Therapy, N (%)			
No	34 (18.8)	7 (53.8)	0.007
Yes	147 (81.2)	6 (46.2)	

Patients meeting criteria for WBXRT	No Local Recurrence N=50	Local Recurrence N=4
Met criteria and WBXRT recommended (n=24)		
TARGIT-A	17	0
TARGIT-MCC	7	0
Met criteria and WBXRT not recommended (n=30)		
TARGIT-A	15	2
TARGIT-MCC	11	2
Met criteria and WBXRT received (n=17)		
TARGIT-A	13	0
TARGIT-MCC	4	0

Conclusions

Most local recurrences were in women that did not meet criteria for selective WBXRT after IORT.

Among those meeting expanded (TARGIT-MCC) criteria for selective WBXRT, there was a clinically important reduction in local recurrence with receipt of WBXRT.

Future work should address additional factors that predict local recurrence in patients undergoing lumpectomy with IORT.

Contact

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Methods

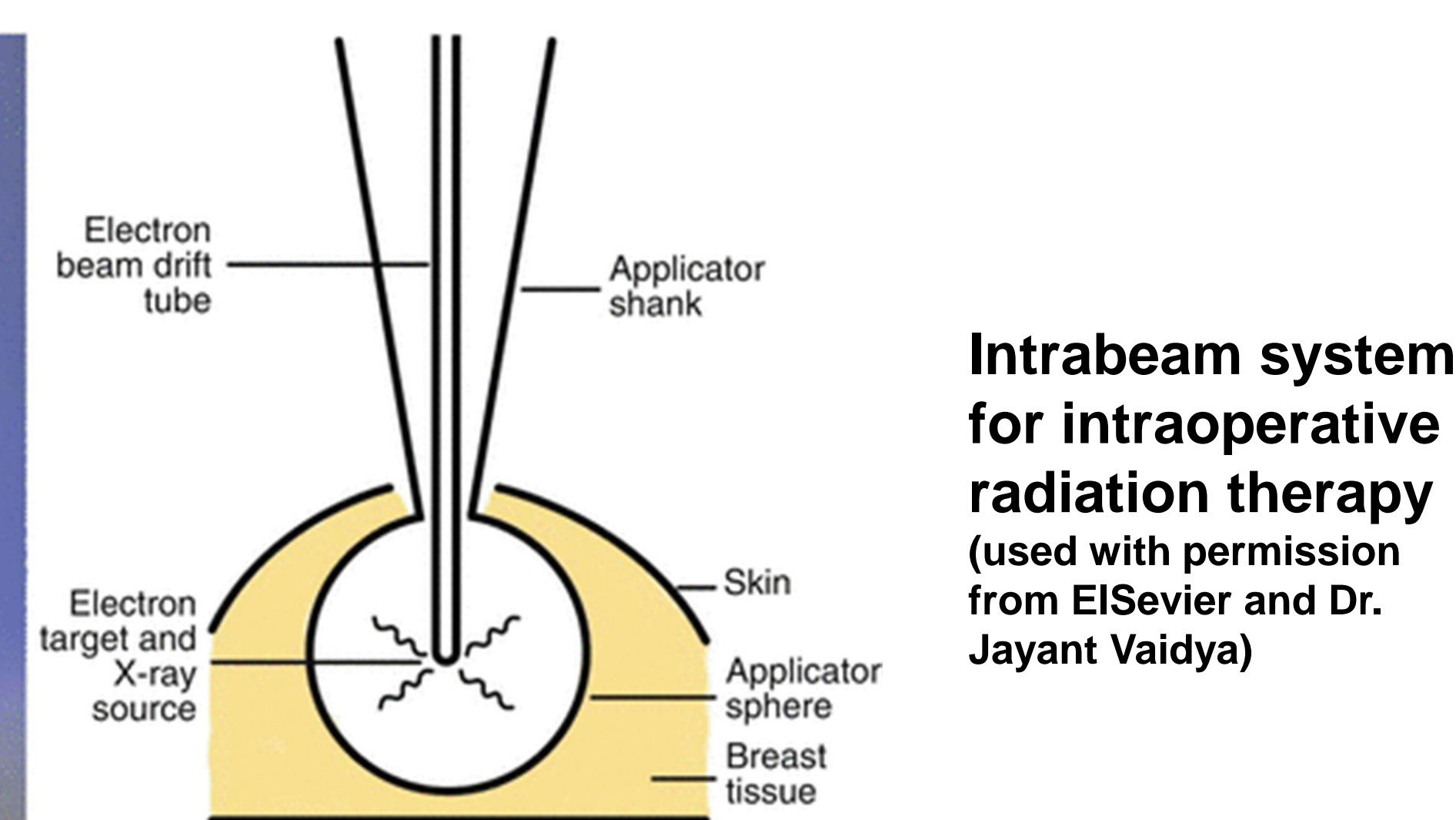
Study Design: Single institution, retrospective review

Population: Adult women with estrogen-receptor positive, clinically node-negative breast cancer

Time frame: 2011-2015

Comparison Groups: Suitable for IORT alone, meeting TARGIT-A criteria for selective WBXRT, meeting expanded (TARGIT-MCC) criteria for selective WBXRT

Analysis: LR was compared based on whether patients met criteria for WBXRT, had recommendation for WBRT, and on receipt of WBXRT using Fishers' exact tests.



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