



Data Article

Data on distant metastasis and survival after locoregional recurrence following nipple-sparing mastectomy and immediate breast reconstruction



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ABSTRACT

Nipple-sparing mastectomy (NSM) with immediate breast reconstruction is being increasingly used in the treatment of breast cancer [1]. However, there are limited available data on the prognostic implications of locoregional recurrence (LRR) following this surgical procedure. This article is a supplementary resource of the original research article by Wu ZY et al. entitled “Locoregional Recurrence Following Nipple-Sparing Mastectomy with Immediate Breast Reconstruction: Patterns and Prognostic Significance” [2] and presents data

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Keywords:

Breast cancer
Nipple-sparing mastectomy
Immediate breast reconstruction
Locoregional recurrence
Distant metastasis
Prognosis

regarding the subsequent distant metastasis following the first LRR, as well as the prognoses for isolated local recurrences according to the site of recurrence after NSM and immediate breast reconstruction for primary breast cancer. Data from a total of 1,696 patients with primary breast cancer who underwent NSM with immediate reconstruction from March 2003 to December 2016 at the Asan Medical Center, Seoul, Korea, were retrospectively reviewed. An LRR as the first event was found to have developed in 172 patients. Among these, 117 cases (6.9%) involved isolated local recurrence, including 52 cases (3.1%) of nipple-areola complex recurrence, 41 cases (2.4%) of skin/subcutaneous recurrence, and 24 cases (1.4%) of chest wall recurrence. Kaplan-Meier survival analysis and the log-rank test were performed to compare the subgroups of local recurrence. In 172 patients with LRR, subsequent distant metastases were observed in 30 cases (17.4%). Our data may be helpful for conducting further in-depth investigations on salvage treatment options in patients with LRR following NSM and immediate breast reconstruction.

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Specifications Table

Subject	Surgery, Oncology
Specific subject area	Prognosis associated with the recurrence after breast cancer treatment
Type of data	Table
How data were acquired	Figure
Data format	Retrospective clinical chart review
Parameters for data collection	Raw Analyzed
Description of data collection	Patients with locoregional recurrence as the first event after nipple-sparing mastectomy and immediate breast reconstruction for primary breast cancer were included in this study.
Data source location	Patient data and medical records were obtained from a prospectively maintained database and were documented in an Excel dataset. Institution: Asan Medical Center City/Town/Region: Seoul Country: South Korea
Data accessibility	With the article. Raw data are uploaded to Mendeley Data.
Related research article	Direct URL to raw data: http://dx.doi.org/10.17632/5kjj57f5dm.1 Wu ZY, Han HH, Kim HJ, Lee J, Chung IY, Kim J, Lee S, Han J, Eom JS, Kim SB, Gong G, Kim HH, Son BH, Ahn SH, Ko B. Locoregional recurrence following nipple-sparing mastectomy with immediate breast reconstruction: Patterns and prognostic significance, Eur. J. Surg. Oncol. 2021 Jan 13:S0748-7983(21)00,006-8, http://dx.doi.org/10.1016/j.ejso.2021.01.006 . Online ahead of print.

Value of the Data

- Considering the very limited available data on locoregional recurrence (LRR) outcomes following nipple-sparing mastectomy (NSM) and immediate breast reconstruction, our current data provide important initial insights that will assist with the appropriate management and surveillance of this patient population.

- Our data may be useful to those estimating prognosis following an LRR in patients who underwent NSM and immediate breast reconstruction.
- Our data would allow researchers to conduct further in-depth studies on salvage treatment options in patients with LRR following NSM and immediate breast reconstruction.

1. Data Description

We present supporting data related to the research article “Locoregional Recurrence Following Nipple-Sparing Mastectomy with Immediate Breast Reconstruction: Patterns and Prognostic Significance” by Wu et al. [Table 1](#) contains the characteristics of the 30 patients who subsequently developed distant metastasis after the first LRR following NSM and immediate breast reconstruction. For each case, the age at diagnosis of the primary tumor, the site of distant metastasis, the corresponding site of first LRR, the primary tumor and LRR molecular subtypes, the time to first LRR, the time interval between LRR and distant metastasis, and the survival status at the last follow-up are shown.

[Fig. 1](#) shows the Kaplan–Meier curves for disease-free survival (**A**) and distant metastasis-free survival (**B**) in accordance with the site of local recurrence after NSM and immediate breast reconstruction. Among the patient cohort, there were 52 cases of nipple-areola complex recurrence, 41 cases of skin/subcutaneous recurrence, and 24 cases of chest wall recurrence. The relevant raw data are provided in the supplementary file.

2. Experimental Design, Materials and Methods

This retrospective study included all patients with primary breast cancer who underwent NSM and immediate breast reconstruction at the Asan Medical Center, Seoul, Korea, between March 2003 and December 2016. LRR as the first event was found to have developed in 172 of the 1696 breast cancer patients in our cohort. Cases of LRR diagnosed with a simultaneous distant metastasis were excluded from this subgroup.

Recurrences and metastases were assessed by clinical examination and chest radiography during every follow-up visit. Abnormal clinical findings were evaluated through further studies, including ultrasonography, computed tomography of the chest, and bone scanning. Fine needle aspiration, core needle or excisional biopsies were performed to evaluate suspected locoregional lesions. Patients who failed to be present for scheduled examinations were contacted via telephone to confirm that they were alive. LRRs were classified as biopsy-proven local recurrences in the ipsilateral nipple-areola complex, skin/subcutaneous layer, or chest wall, and as regional recurrences during instances of carcinoma metastases involving the ipsilateral axillary, supraclavicular, or internal mammary lymph node. Any other site of recurrence was considered to be distant metastasis. Lesions with a clear evidence of distant metastasis during imaging evaluation were considered as recurrence without pathological examination.

Endpoints of interest included disease-free survival (DFS) and distant metastasis-free survival (DMFS) after LRR as the first event. Post-recurrence DFS was defined as the interval from the date of LRR salvage treatment to any second recurrence. Post-recurrence DMFS was defined as the interval from the date of LRR salvage treatment to the subsequent occurrence of a distant metastasis. Survival rates were estimated using the Kaplan–Meier method and compared using the log-rank test. All statistical analyses were performed using SPSS, version 24.0 for Windows (IBM Corp., Armonk, NY, USA).

Ethics Statement

The study protocol was approved by the Institutional Review Board of the Asan Medical Center (Approval No. 20,200,712), and all experiments were conducted in accordance with the

Table 1

Data on subsequent distant metastasis following the first locoregional recurrence.

No.	Age at diagnosis of years	Site of DM	Site of LRR as 1st event	Molecular subtype (PT)	Molecular subtype (LRR)	Time to LRR, months	Time interval between LRR and DM, months	Survival status
1	36	Brain, Lung	SCR	HR+/HER2-	TN	3	19	Alive
2	27	Lung, Distant LN	CWR	HR+/HER2-	HR+/HER2-	5	9	Alive
3	37	Distant LN	ALN	HR-/HER2+	HR-/HER2+	6	9	Dead
4	35	Lung	CWR	HR+/HER2-	HR+/HER2-	7	72	Dead
5	32	Bone, Pleura, Liver	SCR	HR+/HER2+	HR-/HER2+	7	7	Alive
6	46	Distant lymph nodes	ALN, SCLN	HR+/HER2-	TN	8	10	Dead
7	26	Liver	ALN	HR+/HER2-	HR+/HER2-	9	28	Dead
8	39	Lung	ALN	TN	HR-/HER2+	9	1	Dead
9	32	Liver, Lung, Bone, Distant LN	NCR	HR-/HER2+	HR-/HER2+	12	16	Dead
10	51	Distant LN, Lung, Bone	ALN	HR-/HER2+	HR-/HER2+	13	10	Dead
11	31	Distant LN	NCR	HR-/HER2+	HR-/HER2+	14	5	Alive
12	31	Lung	SCR	HR+/HER2-	HR+/HER2-	18	24	Alive
13	26	Lung, Bone	SCLN	HR+/HER2+	HR+/HER2+	18	11	Dead
14	34	Bone, Distant LN	IMLN	HR+/HER2-	HR+/HER2+	19	33	Alive
15	35	Distant LN	ALN	TN	TN	19	45	Dead
16	28	Lung, Pleura, Bone, Distant LN	SCR	HR+/HER2-	HR+/HER2-	20	59	Alive
17	44	Lung	ALN, SCLN	HR+/HER2+	HR+/HER2+	29	5	Dead
18	33	Bone	ALN	HR+/HER2-	HR+/HER2-	31	14	Alive
19	42	Liver, Lung	ALN	HR+/HER2-	HR+/HER2-	34	41	Dead
20	45	Liver, Bone, Distant LN	ALN	HR+/HER2-	HR+/HER2-	36	39	Dead
21	32	Liver	CWR	HR+/HER2+	HR+/HER2+	46	20	Alive
22	43	Liver, Pleura	IMLN	HR+/HER2+	HR+/HER2+	58	26	Dead
23	29	Lung	SCR	HR+/HER2+	HR+/HER2-	61	87	Alive
24	24	Bone	IMLN	HR-/HER2+	HR+/HER2-	76	21	Alive
25	40	Liver, Bone, Distant LN	CWR	HR+/HER2-	HR+/HER2-	84	24	Dead
26	48	Bone, Liver	ALN	HR+/HER2-	HR+/HER2+	88	53	Alive
27	38	Bone	ALN	HR+/HER2-	HR+/HER2-	90	26	Dead
28	50	Distant LN	SCR	HR-/HER2+	HR-/HER2+	103	22	Alive
29	44	Brain, Bone, Pleura	SCLN, IMLN	HR+/HER2-	HR+/HER2-	119	25	Alive
30	44	Lung	ALN	HR+/HER2-	TN	144	17	Alive

ALN, axillary lymph node; CWR, chest wall recurrence; DM, distant metastasis; HER2, human epidermal growth factor receptor 2; HR, hormone receptor; IMLN, internal mammary lymph node; LN, lymph node; LRR, locoregional recurrence; NCR, nipple-areola complex recurrence; NSM, nipple-sparing mastectomy; PT, primary tumor; SCLN, supraclavicular lymph node; SCR, skin or subcutaneous recurrence; TN, triple negative.

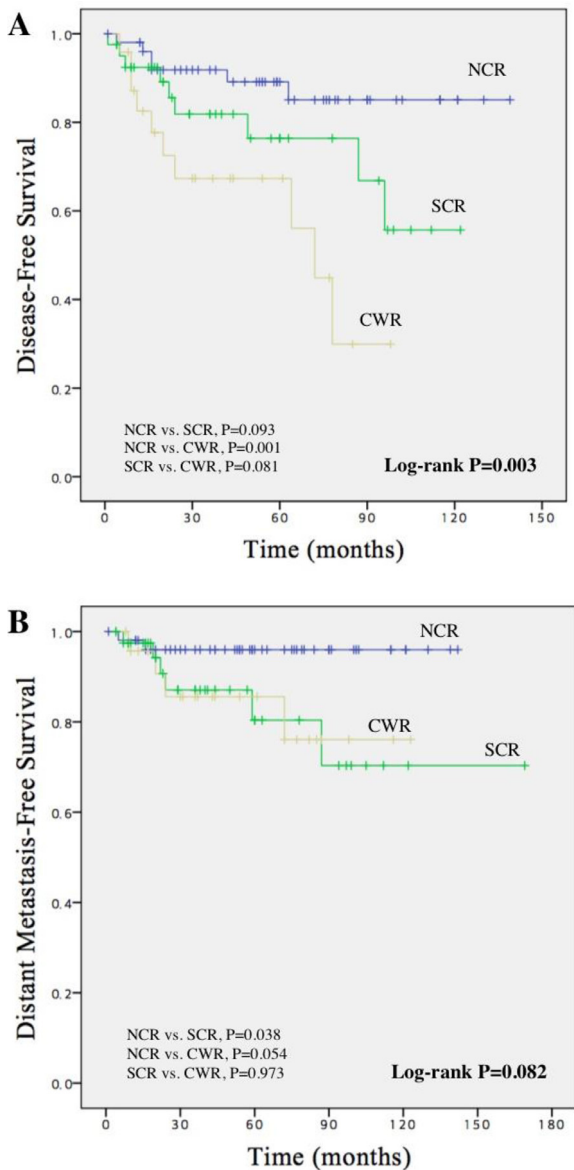


Fig. 1. Kaplan-Meier survival analysis of the disease-free survival (A) and distant metastasis-free survival (B), in accordance with the site of local recurrence after nipple-sparing mastectomy and immediate breast reconstruction. CWR, chest wall recurrence; NCR, nipple-areola complex recurrence; SCR, skin or subcutaneous recurrence.

Declaration of Helsinki. The requirement for informed consent was waived since our study was a retrospective review of patient records.

CRedit Author Statement

Zhen-Yu Wu: Conceptualization, Methodology, Formal analysis, Investigation, Data curtion, Writing original draft, Supervision; **Hyun Ho Han:** Methodology, Investigation, Data curtion;

Hee Jeong Kim: Data curtion; **Jongwon Lee:** Data curtion; **Il Yong Chung:** Data curtion; **Jisun Kim:** Data curtion; **Saeyeol Lee:** Data curtion; **Jin Sup Eom:** Data curtion; **Sung-Bae Kim:** Data curtion; **Gyungyub Gong:** Data curtion; **Hak Hee Kim:** Data curtion; **Byung-Ho Son:** Data curtion; **Sei-Hyun Ahn:** Conceptualization, Methodology; **BeomSeok Ko:** Conceptualization, Methodology, Validation, Formal analysis, Investigation, Data curtion, Writing review & editing, Supervision, Project administration.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships which have or could be perceived to have influenced the work reported in this article.

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References

- [1] S.M. Wong, Y.S. Chun, Y. Sagara, M. Golshan, J. Erdmann-Sager, National patterns of breast reconstruction and nipple-sparing mastectomy for breast cancer, 2005–2015, *Ann. Surg. Oncol* 26 (2019) 3194–3203.
- [2] Z.Y. Wu, H.H. Han, H.J. Kim, J. Lee, I.Y. Chung, J. Kim, et al., Locoregional recurrence following nipple-sparing mastectomy with immediate breast reconstruction: patterns and prognostic significance, *Eur. J. Surg. Oncol.* (2021 Jan 13) S0748-7983(21)00006-8Online ahead of print, doi:[10.1016/j.ejso.2021.01.006](https://doi.org/10.1016/j.ejso.2021.01.006).