Acta Med. Nagasaki 32 : 78－82

Limited Surgery for Breast Cancer

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Received for publication, June 3, 1987

Twenty-two cases with breast cancer undergoing a limited surgical operation were clinically evaluated. A limited surgery for breast cancer was indicated for 57% of Stage I disease and 7% of Stege II, including the cases with T_1n_0, T_2n_0 and T_1n_1 diseases according to Tnm classification of breast cancer for the past six years in our clinics.

A five-year survival rate was 100% in spite of postoperative recurrences which occurred in the 3 cases over 5 years after surgery. It is more likely that a presence of histologic vascular invasion relates to postoperative recurrence.

An indication of a limited surgery can be extended to those who have an axillary metastasis of n_1 in a T_1 size including part of a T_2 with the exception of a finding of histologic vascular invasion.

INTRODUCTION

A limited surgery for breast cancer has become widely indicated for early cancer to minimize the surgical insult and to exclude cosmetic and functional demerits following surgery.[1)]

This study is to clarify the accepted criteria for identifying an indication of a limited surgery for breast cancer on the basis of clinical experiences.

MATERIAL

During the past six years from January 1975 to July 1981, twenty-two cases underwent a limited surgery at the First Department of Surgery, Nagasaki University Hospital. The number corresponds to 23.4% of Stage I and II diseases who were operated upon at the same period as shown in Table 1.

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Limited surgery was performed in 16 (57.2%) out of 28 in Stage I disease and 6 (7 %) out of 88 in Stage II.

The operative procedures of a limited surgery comprised Br (resection of breast gland) in 1, Br+Ax (resection of breast gland+dissection of axillar lymph nodes) in 6 and Br+Ax+Mn (resection of breast gland+dissection of axillar lymph nodes+resection of the pectoralis minor muscle) in 15.

According to the size of resected tumor mass as shown in Table 2, one was the size of less than 1cm in diameter, 15 less than 2cm and 5 less than 3cm including the maximum of 4.5cm in diameter. Most of whom underwent a limited surgery in this series had the tumor size of less than 2cm in diameter. The maximal diameter of 4.5cm of resected tumor mass was seen in a 81-year old female.

According to Tnm classification as shown in Table 3, 11 showed T_1n_0 and T_1n_1. Based on the n-factor analysis, 13 were n_0. As far as the tumor size is as large as T_1, n_1 is

Table 1. Stage I and II breast cancers operated upon during a period from January 1975 to July 1981 at 1st Department of Surgery, Nagasaki University Hospital.

Operative procedure	Br	Br+Ax	Br+Ax +Mn	Br+Ax Mj+Mn	
Stage I	1	1	14	12	28
Stage II	0	5	1	82	88

Table 2. Relationship between operative procedure and size of resected tumor mass.

Operative procedure \ Tumor size in diameter	-1.0	-2.0	-3.0	3.1-
Br	0	1	0	0
Br+Ax	0	1	4(1)	1
Br+Ax+Mn	1	13(2)	1	0

( ) died of recurrence

Operative procedure \ tnM	t_1n_0	t_1n_{1a}	t_2n_0	t_2n_{1a}	t_2n_{1b}
Br	1	0	0	0	0
Br+Ax	1	0	1(1)	1	3
Br+Ax+Mn	9(1)	5(1)	1	0	0
	11(1)	5(1)	2(1)	1	3

( ) died of recurrence

included as a favorable candidate of a limited surgery. A case with a T_2n_1 breast cancer was an aged patient of 81-year old in whom this operative procedure was indicated because of poor general condition. The indication of a limited surgery could be extended to T_2n_1 in this series. At least, the selection of a limited surgery was unrelated to histologic patterns. Postoperative recurrence was seen in 1 (16.6%) undergoing an operative procedure of Br+Ax and in 2 (13.3%) undergoing Br+Ax+Mn respectively. As for the tumor sizes, 2 were less than 2cm in diameter, one was less than 3cm.

Such results showed that postoperative recurrence was not closely related to the operative procedures as well as the tumor sized.

The clinical background of recurrence was viewed from analysis of 3 cases with postoperative recurrence as shown in Table 4. The 3 cases include 2 of not having nodal involvement, indicating that there is nothing clinically peculiar to occurring postoperative recurrence as shown in Table 4. However, a pattern of histologic vessel invasion was confirmed in 2 with ly(+) (lymphatic vessel invasion) and in 1 with v(+) (vascular vessel invasion). The time intervals of recurrence after surgery in 3 cases were 5.7, 7 and 9 years respectively in the course of more than 5 years after surgery.

Table 3. angiographic finding.

	G I	G II	GIII
arterial phase	10		
alearness of vessel wall margin	10	8	5
waning of vessel branching	1	2	1
unclearness of the wall	3	2	4
extravasation	0	1	2
vascular interruption	1	1	2
venous phase			
clearness of vessel wall margin	8	7	4
waning of branching	1	4	6
unclearness of the wall	3	2	2
extravasation	1	0	0
vascular interruption	2	1	2

Table 4. Clinical profiles of 3 cases with postoperative recurrence.

case age(yrs)	location of the tumor size(cm)	op. procedure	histology	node metastasis	histologic vascular invasion Ly v
62	AC 2.6	Br+Ax	Scir 2 a_3	n_0	Ly_1 v_0
73	C 1.5	Br+Ax+Mn	Solid tub. 2 a_2	n_{1a}	Ly_1 v_1
58	D 2.0	Br+Ax+Mn	Solid tub. 2 a_2	n_0	Ly_0 v_0

Two out of the 3 cases with postoperative recurrence accompanied distant metastasis into the bone and the lung.

However, the prognosis of limited surgery for Stage I and II diseases seemed to be almost similar to that of standard radical operations which was performed at the same period of time as shown in Table 5.

Table 5. Recurrence in Stage I and II diseases following radical mastectomy at the same period of time with evaluating a prognosis for limited operation.

	n_0	$n_{1\alpha}$	$n_{1\beta}$	
T_1	2 of 15 (13.3%)	0	0 of 1	2 of 16 (12.5%)
T_2	2 of 41 (4.8%)	2 of 18 (11.1%)	1 of 11 (9.0%)	5 of 70 (7.1%)
	4 of 56 (7.1%)	2 of 18 (11.1%)	1 of 12 (8.3%)	7 of 86 (8.1%)

DISCUSSION

A limited surgery for breast cancer benefits from reducting the postoperative cosmetic and functional defects and also promises to reduce the incidence of postoperative recurrence if oncologic radicality is provided.[2] Recently caution is employed to avoid occurring atrophy of pectoralis major muscle in terms of an operative procedure of a limited surgery.

It is believed that prognosis for breast cancer can be attributed to the stage of disease which correlates well with progressing of cancer extension. Surgeons take it for granted that a limited surgery for breast cancer should be indicated for stage I and II diseases and an operative procedure of radical mastectomy is recommended for those in whom nodal involvement and histologic vascular invasion are present and the tumor mass located in the inframmatory fold.

In Stage II disease, the indication for a limited surgery is restricted to those who have a disease of T_2N_2 that cancer is limited to the cystic wall, or extending intraductally and situating adjacent to the axillary tail, less than 2.5cm in diameter.[2] It is well known that the outcome of a limited surgery is satisfactory in condition of the restrictive indication although recurrence appears by chance 10 years after surgery. In fact, it takes much time until recurrence appears as is usual occurring following surgery for breast cancer. Therefore, when axillary metastasis is palpated, it should be identified as to whether it originates from primary cancer or newly second one.[3] Attention is called to the fact that

axillary metastasis palpable on the opposite side derives from not only primary cancer but ipsilateral second occult cancer, even though the second tumor fails to be detected. Further experience with a limited surgery for breast cancer must be accumulated to define the adequacy of surgical indication as compared a result of radical mastectomy with that of simple mastectomy combined with axillary node dissection when axillary nodes are involved.[4)5)]

In this present study a limited surgery for breast cancer was indicated for 57% of Stage I and 7% of Stage II disease. As a result, a 5 year survival rate was 100%, reflecting a proper determination of surgical indication. The conclusion reached from this study is that a limited surgery for breast cancer is indicated for Stage I disease including part of Stage II.

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