

Recurrent Breast Cancer with Bone Metastasis

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ABSTRACT: Twenty patients with bone metastasis following surgery for recurrent breast cancer were clinically evaluated in analysis of clinicopathologic aspect in comparison with those with metastases in other organ. It is more likely that bone metastasis occurs in younger patients as compared with other organ metastasis.

However, there were no certain clinical patterns of patients with bone metastasis including the survival time, as compared with those with other organ metastasis.

In this series, ER and PgR failed to measure and to elucidate the effect of hormone therapy because a subject includes parts of patients prior to development of ER and PgR measurement.

In conclusion, there were no clinicopathologic features in patients with bone metastasis following surgical treatment of breast cancer except for occurrence in younger patients.

INTRODUCTION

It is frequent to encounter in patients with recurrent breast cancer in accordance with an increasing number of surgical patients. In case of recurrent breast cancer, it is characteristic of a long-term clinical course with a reflection of slow growth of recurrent tumors. Therefore, it is possible to select an appropriate therapy among various kinds of therapeutic approaches.

Recurrence of breast cancer is divided into the two categories, that is, distant metastasis into the bone, the lung, the liver and the brain, and local recurrence in the thoracic wall and regional lymph nodes.

Advances in detecting procedures and development of various kinds of instruments made it possible to detect recurrent breast cancer in early stage and to accurately assess the sites of recurrence.

In this study, patients with bone metastasis

from breast cancer were clinically reviewed in terms of the prognosis and the treatment to certify the effect of prolonging the survival time.

PATIENTS

Twenty patients with bone metastasis were subject to this study as compared with 73 patients who had recurrence from breast cancer except in the bone.

Table 1 showed the result of comparative study in recurrent breast cancer between the bone and other organs in relation to T factor. Recurrent patients included advanced disease stages as shown in **Table 2** and most had the tumor size of T₂ and more. As indicated in **Table 3**, the disease stage in patients with recurrent breast cancer is relatively progressed although there is no significant difference between patients with bone metastasis and with metastases in other organ. Detection of bone metastasis was a symptom of pain in the majority of

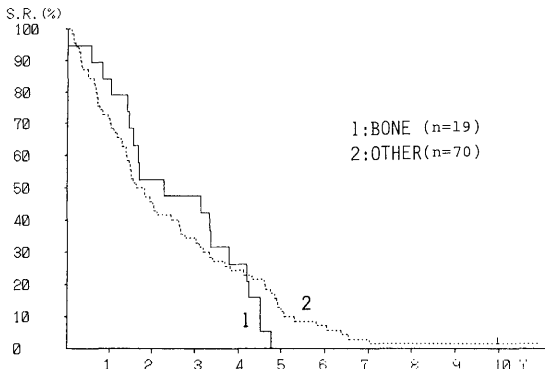


Fig. 1. Survival rates according to metastatic sites in breast cancer

Table 1. No. of cases according to T factors in recurrent breast cancers

	T1	T2	T3	T4	Total
bone meta.	2(10.0)	11(55.0)	6(30.0)	1(5.0)	20
other	10(13.7)	28(38.4)	19(26.0)	16(21.9)	73
Total	12(12.9)	39(41.9)	25(26.9)	17(18.3)	93

() : %

Table 2. No. of cases according to Tnm-stage in recurrent breast cancers

	I	II	III-a	III-b	IV	Total
bone meta.	2(10.0)	11(55.0)	4(20.0)	1(5.0)	2(10.0)	20
other	7(9.6)	23(31.5)	17(23.3)	13(17.8)	13(17.8)	73
Total	9(9.7)	34(36.6)	21(22.6)	14(15.1)	15(16.1)	93

() : %

Table 3. No. of cases according to Tnm-stage in recurrent breast cancers

	I	II	III	IV	Total
bone meta.	6(30.0)	7(35.0)	4(20.0)	3(15.0)	20
other	18(24.7)	17(23.3)	13(17.8)	25(34.2)	73
Total	24(25.8)	24(25.8)	17(18.3)	28(30.1)	93

() : %

Table 4. No. of cases according to age in age in recurrent breast cancers

	20-29	30-39	40-49	50-59	60-69	70-79	Total
bone meta.	0	4(20.0)	8(40.0)	4(20.0)	4(20.0)	0	20
other	2(2.7)	11(15.1)	21(28.8)	27(37.0)	10(13.7)	2(2.7)	73
Total	2(2.2)	15(16.1)	29(31.2)	31(33.3)	14(15.1)	2(2.2)	93

() : %

Table 5. No. of cases according to n factors in recurrent breast cancers

	n0	n1 α	n1 β	n2,3	Total
bone meta.	6(30.0)	5(25.0)	6(30.0)	3(15.0)	20
other	21(28.8)	12(16.4)	16(21.9)	23(31.5)	73
Total	27(29.0)	17(18.3)	22(23.7)	26(27.9)	93

() : %

Table 6. No. of cases according to histological classification in recurrent breast cancers

	Papillo.	Solid-t.	Scirr.	Specia.	Total
bone meta.	5(25.0)	9(45.0)	5(25.0)	1(5.0)*	20
other	24(33.8)	25(35.2)	19(26.8)	2(2.8)**	71
Total	29(31.9)	34(37.4)	24(26.4)	3(3.3)	91

() : %

* : Medullary carcinoma

** : Invasive lobular carcinoma

Papillo.: Papillotubular carcinoma, Solid-t.: Solid-tubular carcinoma, Scirr.: Scirrhou carcinoma, Specia.: Special types.

Table 7. No. of cases according to operation in recurrent breast cancers

	Modifie.	Standar.	Extend.	Super.	Total
bone meta.	2(10.0)	5(25.0)	12(60.0)	1(5.0)	20
other	21(29.2)	15(20.5)	32(43.8)	4(5.5)	72
Total	23(25.0)	20(21.7)	44(47.8)	5(5.4)	92

() : %

Modifie.: modified radical mastectomy, Standar.: standard radical mastectomy, Extend.: extended radical mastectomy, Super.: super extended radical mastectomy

patients with high serum calcium levels. Confirmation was made by x-Ray film which displayed bone destruction of mainly osteolytic shadow.

According to patient's ages, patients with bone metastasis distributed in younger age although the ages of those with metastases in other organ ranged from 40 to 59 years old as shown in **Table 4**.

As for node metastasis, two thirds of patients affected the nodes, in particular, in the axillar region as shown in **Table 5**.

In analysis of histologic types, there was no definitive difference in histologic types between the patients with bone metastasis and with metastases in other organ as indicated in **Table**

6.

The operative procedures used were shown in **Table 6** and **7**. There was no particular in patients with bone metastasis when compared with metastases in other organs. However, extended radical mastectomy is more often used for patients with recurrent breast cancer.

Figure 7 showed the survival curves between patients with bone metastasis and with metastases in other organ. There was not significant difference in the survival curve between patients with bone metastasis and with metastases in other organ. The disease free interval in patients with bone metastasis ranged from 10 months to 61 months with an average of 27.6 months, indicating not significant difference between the two group patients.

DISCUSSION

The measurement of the levels of tumor marker is now in clinical use to detect recurrence in early stage. Various tumor markers such as CEA, CA15-3, TPA, IAP, BMG, Ft, AFP is now clinically available for detection of recurrence. Anticancer drugs play a key role in the treatment of recurrent breast cancer. In addition, anticancer agents such as CA, CAF and CAPT were used in combination with hormone therapy^{1, 2)}.

Recently, combined hormone therapy of choice is now prevalent to obtain complete remission in sequence of tamoxifen and MPA³⁾. In fact, Chemo-endocrine therapy is effective in prolonging the survival time of patients with recurrent and/or advanced breast cancer.

In this series, clinical features of recurrent breast cancer were clinically evaluated. There was no special pattern of patients with bone metastasis as compared with those having metastases in other organ in terms of the disease stage and the survival time. However, the ages of patients with bone metastasis were somewhat younger as compared with those metastasizing to other organ. Therefore, the hormone therapy in combination with anticancer drugs is mandatory for the treatment of ER and PgR positive patients with bone metastasis.

It is reported that the hormone therapy is effective for 50 to 60 per cent of positive ER

patients^{4, 5)}. On the contrary, even 10 per cent of ER negative patients is effective for the hormone therapy⁵⁾.

For the reasons of no effect of the hormone therapy in ER positive patients, the levels of ER are not uniform in all breast cancer cells with inter-site variation. Some investigators^{6, 7)} clarified that histologically high intensity of malignancy decreases ER and PgR positive rates.

It is accepted that according to increasing intensity of histologic cell malignancy, ER and PgR positive rates are reduced. In addition, it is reported that ER positive breast cancer is particularly prone to occurrence of bone and skin metastases.

On the other hand, it is said that ER negative breast cancers are more likely to metastasize to the liver⁸⁾.

As for PgR positive breast cancers, these have a prolonged disease free interval as compared with PgR negative one⁹⁾. However, Sutton¹¹⁾ and Thorpe¹²⁾ et al clarified that the disease free interval is unrelated to PgR positive rates.

It is no doubt that recurrent breast cancer cells pose extensively malignant behavior with a high intensity of cell malignancy in view of histology. The more the intensity of cell malignancy increases, the more ER and PgR positive rates are lowered. This implies that the effect of the hormone therapy for recurrent breast cancer is reduced in accordance with the extension of recurrent breast cancer. It is generally accepted that the hormone therapy is preceded by chemotherapy to enhance the effects of valid chemoendocrine therapy for recurrent breast cancer.

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