*,   †,   ‡

*.   *.   *.   ‡.   *†

＿＿ :
                                                                                                    .

＿＿ ＿ ＿＿＿ : 1992   2   1997   1
                    120   .   16   74
            33   .   108   ,
    4 ,   2 ,   4 ,   2   .
    4 MV, 6 MV   10 MV X   1   1.8 Gy   50.4 Gy
            7   9 MeV   1   2 Gy   10 Gy   21
    , 9   ,   ,   .   46
            , 45   CMF (cyclophosphamide, methotrexate, 5-fluorouracil)   6   , 1   CAF (cyclophospha-
mide, doxorubicin, 5-fluorouracil)   12   .   (edema),
(retraction),   (elevation),   (fibrosis),   (induration)   excellent, good, fair, poor
4   ,   symmetry index   .
                    polytomous logistic regression   ,   logistic re-
gression   .
＿＿ :   excellent   29   (24%), good 62   (52%), fair 23   (19%), poor   6
    (5%)   76%   good   .   2 cm   (p=
0.04),   (p=0.0002),   (p=0.02),
                    (p=0.0005),   (p=0.0001)
            .   (p=0.04),
        (p=0.0002)   .
            2 cm   (p=0.0007),   (p=0.005),
(p=0.001),   (p=0.02)
                                (p=0.09)   .
            2 cm   (p=0.003),   (p=0.007)   .   .
＿＿ :   76%   good   .
                    ,
            .

            :   ,   ,   ,

5)

.

.

1992 2 1997 1
154
,

120 .

16 74
33 . 24 70
43 . (infiltrat-
ing ductal carcinoma) 93 77.5%
(mucinous carcinoma) 10 ,
17 . ,
Table 1 .
108 ,
4 , 2 , 4 ,
2 .
6 MV 10 MV X 1 1.8 Gy 50.4 Gy
7 9
MeV 1 2 Gy 10 Gy 21
, 9 ,

Table 1. Characteristics of Patients

Characteristic	No. of patients (%)
Tumor site	
right	45 (38)
left	75 (62)
upper quadrant	104 (86)
lower quadrant	14 (12)
central	2 (2)
T stage	
T1a (<0.5 cm)	6 (5)
T1b (0.5 1.0 cm)	23 (19)
T1c (1.0 2.0 cm)	68 (57)
T2 (2.0 5.0 cm)	23 (19)
N stage	
N0	81 (67)
N1	33 (28)
Nx	6 (5)

, .
46 ,
(29/33)
(17/87) .
46 45 CMF (cyclopho-
sphamide, methotrexate, 5-fluorouracil) 6 , 1
CAF (cyclophosphamide, doxorubicin, 5-fluorouracil)
12 . ,
1 , 30 , 15 .
(edema), (retrac-
tion), (elevation), (fibrosis), (induration)
excellent, good, fair, poor 4
6)(Table 2), sym-
metry index 7) .
, 33
. Symmetry index

1 2 .

(sternal notch)

Table 2. Definition of Cosmetic Score

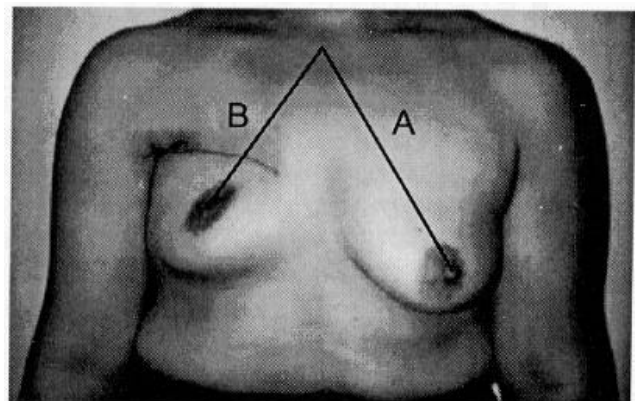| Cosmetic score	Definition
excellent	treated breast almost identical to untreated breast
good	minimal difference between the treated and un-treated breast
fair	obvious difference between the treated and un-treated breast but without major distortion
poor	major esthetic sequelae in treated breast

rom Danoff et al. (1983)

Fig. 1. Estimation of symmetry index. Symmetry index = (A–B) / A.

(Fig.   (Table 3).   ,   ,   ,

1).

,   ,   ,

,   ,   (p=0.04),

,   (p=0.0002)   .

.   poly-   symmetry index

tomous logistic regression   ,   ,

logistic regression   0.02   0.44   (: 0.15)   . Symmetry

SAS program version 6.12   .   index   (correlation analysis)

120   1998   6   117

3   .   11

,   2

.   9

,   5   ,   2   ,   1   ,

5   .

excellent   29   (24%), good 62   (52%), fair 23   (19

%), poor   6   (5%)   76%   good

.

good

75%   ,

9 1%   .

good

57%   ,   87%

.   1.5 cm, 2.0 cm   .

82

17   11   (65%),

2   2   (100%),

63   53   (84%)

good   .   33

25   13   (52%),

4   2   (50%),

3   1   (33%)

1   good   .

2 cm   (p=0.04),

(p=0.0002),

(p=0.02),

(p=0.0005),

(p=0.000 1)

Table 3. Factors Affecting Cosmetic Results (univariate analysis)

Characteristic (No. of pts.)	Cosmetic score, number of patients (%)				p
	excellent	good	fair	poor	
Tumor site[*]					0.56
upper (104)	27 (26.0)	52 (50.0)	21 (20.2)	4 (3.8)	
lower (14)	2 (14.3)	9 (64.3)	1 (7.1)	2 (14.3)	
T stage					0.04
T1 (97)	26 (26.8)	52 (53.6)	13 (13.4)	6 (6.2)	
T2 (23)	3 (13.0)	10 (43.5)	10 (43.5)	0 (0.0)	
N stage[†]					0.0002
N0 (81)	22 (27.2)	47 (58.0)	11 (13.6)	1 (1.2)	
N1 (33)	4 (12.1)	13 (39.4)	11 (33.3)	5 (15.2)	
Type of operation[‡]					0.02
quadrantectomy (107)	22 (20.6)	58 (54.2)	22 (20.6)	5 (4.7)	
others (11)[§]	6 (54.5)	4 (36.4)	1 (9.1)	0 (0.0)	
Radiation to axilla					0.0005
no (90)	26 (28.9)	49 (54.4)	13 (14.4)	2 (2.2)	
yes (30)	3 (10.0)	13 (43.3)	10 (33.3)	4 (13.3)	
Chemotherapy					0.0001
no (74)	24 (32.4)	41 (55.4)	9 (12.2)	0 (0.0)	
yes (46)	5 (10.9)	21 (45.7)	14 (30.4)	6 (13.0)	

[*] Central location is excluded, [†] Nx is excluded, [‡] Subcutaneous mastectomy is excluded, [§] Lumpectomy 6, excisional biopsy 5

Fig. 2. The relationship between tumor size and symmetry index.

Table 4. Factors Affecting Breast Symmetry (univariate analysis)

Characteristic (No. of pts.)	Symmetry index*, number of patients (%)		p
	0.15	>0.15	
Tumor site†			0.19
upper (104)	55 (53)	49 (47)	
lower (14)	10 (71)	4 (29)	
T stage			0.0007
T1 (97)	62 (64)	35 (36)	
T2 (23)	5 (22)	18 (78)	
N stage‡			0.005
N0 (81)	51 (64)	30 (36)	
N1 (33)	11 (33)	22 (67)	
Type of operation§			0.09
quadrantectomy (107)	57 (53)	50 (47)	
others (11)	9 (82)	2 (18)	
Radiation to axilla			0.02
no (90)	56 (62)	34 (38)	
yes (30)	11 (37)	19 (63)	
Chemotherapy			0.001
no (74)	50 (68)	24 (32)	
yes (46)	17 (37)	29 (63)	

* Symmetric index is calculated upto 10^{-1}, † Central location is excluded, ‡ Nx is excluded, § Subcutaneous mastectomy is excluded, Lumpectomy 6, excisional biopsy 5

p=0.0001 (Fig. 2).

2 cm (p=0.0007),
(p=0.005), (p=0.001),
(p=0.02)

(p=0.09)
(Table 4). 2
cm (p=0.003), (p=0.007)

[1,4)]

120 , 33

2

. Danoff [6)]

, , , , ,

2 excellent, good,
fair, poor . Washington University
Taylor [8)] 458

excellent, good, fair, poor ,
80% excellent good
. , , ,
,
60 , , ,
2 cm
. [8,11)] 2 cm

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Sacchni [7)]

,

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,

.

,

symmetry index .

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, ,
. Ray,[9)] Turesson,[12)]

Fisher [13)]
,

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[10,14,17)]

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[6,18,20)]

. Moro [17)] 164

CMF

a randomized trial comparing a conservative treatment to mastectomy in early breast cancer. Radiother Oncol 1989;14: 177- 184

(p=0.002)

. Danoff [6]

methotrexate   prednisone

CMF   CMF prednisone

Markiewicz [20]   826

CMF   CAF

.

.

Danoff,[6] Ray,[9, 10]

Dewar,[11] Rose [15]   90%

good   ,

76%   good   .

120   107   .

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─── *Abstract* ───────────────────────

Cosmetic Results of Conservative Treatment for Early Breast Cancer

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Purpose : This study was performed to evaluate the cosmetic outcome of conservative treatment for early breast cancer and to analyze the factors influencing cosmetic outcome.

Materials and Methods : From February 1992 through January 1997, 120 patients with early breast cancer were treated with conservative surgery and postoperative radiotherapy. The types of conservative surgery were quadrantectomy and axillary node dissection for 108 patients (90%) and lumpectomy or excisional biopsy for 10 patients (8.3%). Forty six patients (38%) received adjuvant chemotherapy (CMF or CAF). Cosmetic result evaluation was carried out between 16 and 74 months (median, 33 months) after surgery. The cosmetic results were classified into four categories, i.e., excellent, good, fair, and poor. The appearances of the patients' breasts were also analyzed for symmetry using the differences in distances from the sternal notch to right and left nipples. A logistic regression analysis was performed to identify independent variables influencing the cosmetic outcome.

Results : Cosmetic score was excellent or good in 76% (91/120), fair in 19% (23/120) and poor in 5% (6/120) of the patients. Univariate analysis showed that tumor size (T1 versus T2) (p=0.04), axillary node status (N0 versus N1) (p=0.0002), extent of surgery (quadrantectomy versus lumpectomy or excisional biopsy) (p=0.02), axillary node irradiation (p=0.0005) and chemotherapy (p=0.0001) affected cosmetic score. Multivariate analysis revealed that extent of surgery (p=0.04) and chemotherapy (p=0.0002) were significant factors. For breast symmetry, univariate analysis confirmed exactly the same factors as above. Multivariate analysis revealed that tumor size (p=0.003) and lymph node status (p=0.007) affected breast symmetry.

Conclusion : Conservative surgery and postoperative radiotherapy resulted in excellent or good cosmetic outcome in a large portion of the patients. Better cosmetic results were achieved generally in the group of patients with smaller tumor size, without axillary node metastasis and treated with less extensive surgery without chemotherapy.

Key Words : Breast cancer, Conservative therapy, Cosmesis, Symmetry