

유방암의 방사선치료

Radiotherapy for Breast Cancer

134

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Abstract

Radiation plays an important role in the management of breast cancer. The role of radiotherapy in the management of breast cancer can be defined in four categories as follows : primary radiotherapy in breast - conserving treatment(BCT) for early breast cancer including ductal carcinoma in situ(DCIS). Adjuvant radiotherapy after mastectomy for high - risk patients. Radiotherapy with or without surgery after neo - adjuvant chemotherapy in locally advanced breast cancers. Palliative radiotherapy for metastatic disease, mostly bone and brain metastases, and loco - regional recurrences. Recently, the application of radiotherapy in the management of breast is increasing. The increased use of mammographic screening have dramatically increased the percentage of cases of breast cancer diagnosed at noninvasive or early stages of disease. As BCT has become the standard treatment for woman with DCIS and a preferred treatment method for early invasive cancers, the proportion of patients who need a radiotherapy is increasing. Also, post - mastectomy radiotherapy(PMRT) is re - appraised because some studies proved that PMRT not only decreased local recurrence but also improved survival rate. Many patients live for decades after treatment. Therefore, technical excellence in irradiating the intact breast or chest wall is very important to reduce long - term complications as well as to control the disease. Rationale, indications, and technical aspects of primary radiotherapy in breast - conserving therapy for early breast cancer and PMRT for operable breast cancer areas reviewed.

Keywords : **Breast cancer; Breast - conserving treatment; Radiotherapy; Post - mastectomy radiotherapy**

: ; ; ;

가
가 ,

가

(8, 9).

가

AJCC I, II

가

가
(10).

50 Gy

가

1.

가

1970

1980

T1,

6

T2, N1

가

1)

(1~3).

가,

가

2)

가

가

NSABP B - 06 trial

가

3) 1

2

25~35%

가

4)

10%

(2, 4).

T1N0

ma),

(systemic lupus erythemato-

sus),

(polymyositis),

(dermato-

myositis)

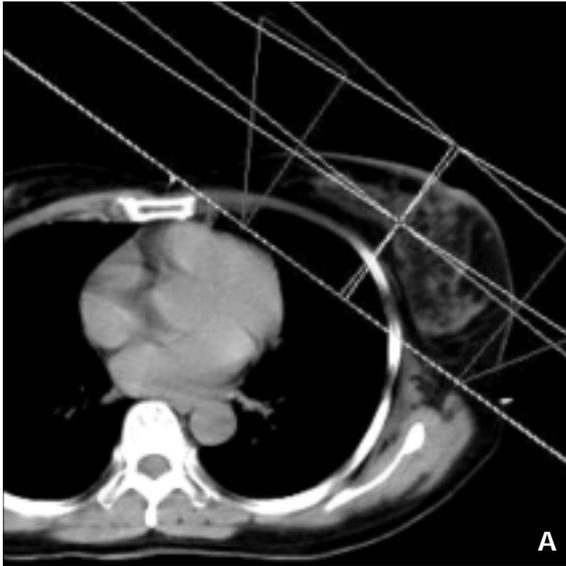
(collagen vascular dis-

ease)

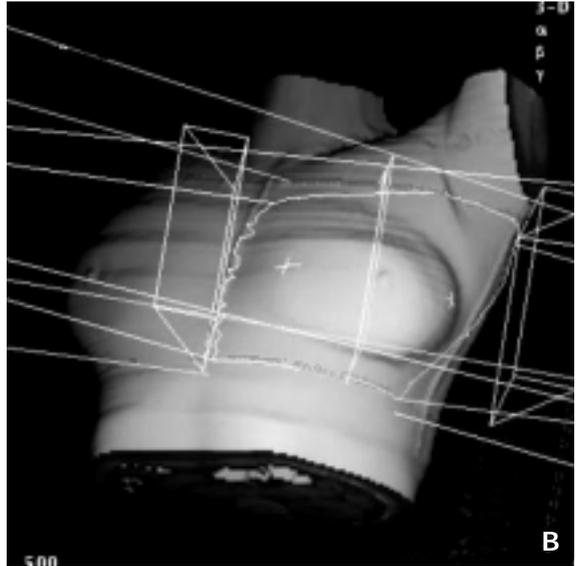
가

(5~7)

(tamoxifen)가



A) (tangential technique)
B)



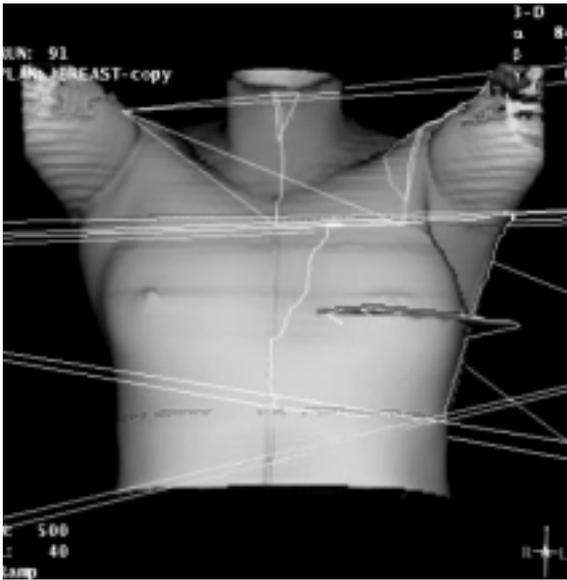
(tangential technique)

1. (tangential field)

가 (target volume) mid - axillary line, inframammary fold 1~2 cm (tangential field)

2. (multileaf collimator ; MLC) 4~8 segment (Intensity modulated radiotherapy ; IMRT)

가 (target volume) Co - 60 4~6 MV X - ray가 8~10 MV X - ray가 (beam spoiler)



2. CT simulation

apex
(scapular) coracoid process 1~
2 cm
(humerus) head가

half - beam
couch beam diver-
gence

CT simulation
(2).

가 (11~13).

가

가
가

가

(14).

가

()

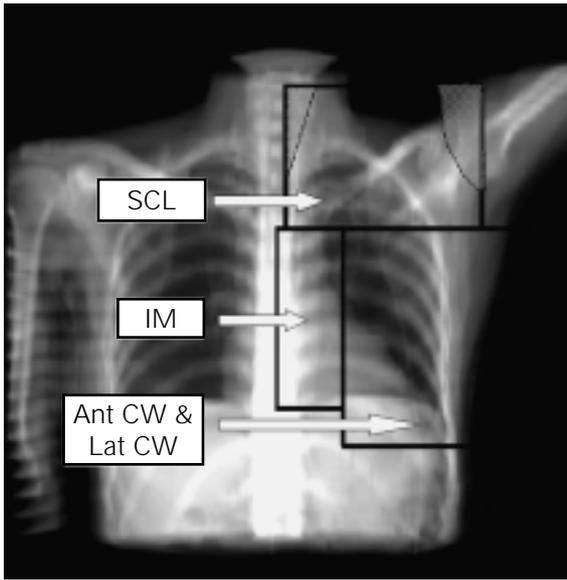
, 가 randomiza-
tion

가 가

(15, 16).

가
가

1.



(X, V)

3.

9~24%

가
5% 가
25% 3 가
10% 4
36% 가
가 가
T3, T4 가
5% 가
가
가 5 cm 4 가

30%
가
2001
4
가 (recom-
mend)
가 T3
3 (suggest)
가 1 3 T1, T2
가
(17). 가
T3, T4

British Columbia randomized trial

가 T3, T4
가 가

2.

45
50 Gy 1 1 , 5 , 5 25 28
가

(photon beam) (tangential field)
가 (bolus)

(target volume)
가 가



X-ray

2



A) CT axial
B) CT coronal

6.

5.

3~7

(late regenerative

phase of scarring or fibrosis)

X

(brachial plexopathy), (decreased arm mobility),

, 가 , ,

(5). X

. 가

가

()

2~3

가

. 20~25% ,

3~6

가 가

가 (19, 20).

가 4%

13% (21).

1~3

가

(early degenerative pneumonic phase)

50 Gy
 가 (22).
 50 Gy
 6).
 2 Gy , 9 ~ 10 Gy) 50 Gy
 : ⑤

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