821 PUBLICATION

Five-year outcome of interstitial brachytherapy in the management of breast cancer patients treated with breast conserving surgery

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Purpose: We reviewed our institution's experience with interstitial implant boosts to determine their five-year impact on local control and cosmetic results.

Method: Between 1989–98, 100 women were managed with breast-conserving surgery (BCS). Radiation consisted of 46–50 Gy/23–28 f external beam irradiation to the whole breast followed by median 15 Gy (10–25.3) inerstitial implant boost to the tumor bed using LDR 192Ir wire and Paris dosimetry system. All of the patients tumor bed were localized using position of sugical scar, determination of tumor bed scar by ultrasonography and radiological control of surgical clips (29% of all pts.).

Results: Tumor stage were 55% T1, 43% T2, 1% T3, 1% T4 and lymph node stage were 62% N0, 34% N1, 4% N2. With mean follow-up 35±32 months, 6% of patients have recurred locally. Local disease free survival (LDFS) were 90% and 60% in patients with surgical margins were negative and positive respectively (p = 0.03). Overall Survival were 90%, DFS were 78% and LDFS were 90% for all group. Cosmetic outcome 86% were excellent and good.

Conclusions: Patients with breast cancer undergoing BCS can be effectively managed with LDR interstitial boost. Local control was seen as a result of negative surgical margins and marked tumor bed using clips.

822 PUBLICATION

Bilateral breast carcinoma: Conservative surgery and RT are feasible?

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Purpose: This study evaluate the results of surgery and RT in bilateral breast cancer.

Materials and Methods: On 950 breast cancer patients (pts) treated whith quadrantectomy + RT (QUART), 44 pts presented bilateral tumor, synchronous in 5 cases. 19 pts were treated with radical surgery and controlateral QUART, 23/25 pts with bilateral QUART (RTE 50 Gy/ICRU + 12 Gy boost), 2 pts with Brachytherapy alone (192 Ir, 60 Gy). CT-based dose calculations were performed. The late reactions, cosmetic results, local failure and the impact of patient- and treatment-related factors (age, total and inhomogeneity dose, technique of boost, surgical complications, acute skin reactions, chemotherapy, IMN irradiation) were studied.

Results: 1/25 pts had local failure at the 22nd month after 1st treatment. Local control was achieved in all controlateral tumors. No acute or late reactions for overlapping, cardiac complications or radiation pneumonitis developed. For central or inner tumors ipsilateral internal mammary node (IMN) was treated in only 2/10 pts. In 3/6 pts the irradiation of the controlateral IMN for the first carcinoma required BT (in 2 cases alone and in 1 as a boost). The cosmetic results were evaluated at 12 months after RT in all pts, 24 months in 17 pts and >36 months in 10 pts. Only in 3 pts the cosmetic result was poor: this outcome is related to the first treatment. There is significant correlation between IMN irradiation and results, independently from the techniques used (Pearson correlation coefficient P < 0.03). No relationship was observed between the cosmetic results and other patient- and treatment-related variables.

Conclusion: This study showed that irradiation of bilateral breast cancer is feasible with good results if the dose distribution is performed using CT-treatment planning system. The IMN irradiation determined poor cosmetic results in this group of pts.

823 PUBLICATION

Serum cholesterol, HDL cholesterol and triglycerides during adjuvant CMF therapy in premenopausal breast cancer patients

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Adjuvant chemotherapy with cyclophosphamide, methotrexate and 5-fluorouracil (CMF) has been suggested to change the concentrations of serum lipids in premenopausal breast cancer patients at least when ovarian failure is induced. We measured serum concentrations of cholesterol, HDL cholesterol and triglycerides serially in 14 premenopausal breast cancer patients receiving CMF adjuvant chemotherapy (i.v.) and optional radiotherapy (9 patients). The mean age of the patients was 43.1 years and mean weight 62.5 kilograms when entering the study. The follow-up time was from pretreatment up to 10 months (at 3 and 5–8 weeks and 4, 6–8 and 10 months).

Amenorrhea was induced in 12 women (86%). The mean weight gain during the study was 3.2 kilograms. Of the lipids, only triglycerides increased significantly at 5–8 weeks (p = 0.0212), 4 months (p = 0.0142) and 6–8 months (p = 0.0155) when compared to pretreatment values. This increase was not seen at 10 months. The mean triglycerides value at pretreatment was 0.78 ± 0.27 mmol/l and the maximum values observed at 5–8 weeks were 0.96 ± 0.38 mmol/l. In women who became amenorrheic, the increase of triglycerides was observed only at 4 months (p = 0.0424). Cholesterol and HDL cholesterol maintained their pretreatment concentrations (5.09 ± 0.88 mmol/l and 1.55 ± 0.27 mmol/l, respectively) in both groups throughout the study.

This study suggests that CMF adjuvant treatment causes minor increases in serum triglycerides. The clinical relevance of the increases needs to be studied further.

824 PUBLICATION

Analysis of factors influencing axillary lymph node involvement in breast cancer

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Purpose: Indications for irradiation of peripheral lymph nodes including axillary nodal group in breast cancer patients are still controversial. In this study, we analysed possible prognosticators influencing axillary nodal involvement in breast cancer.

Materials & Methods: Data from 234 breast cancer patients who were treated at Uludag University M. A. Radiotherapy Centre since November 1995 were analysed retrospectively in terms possible prognostic factors such as age, menopausal status, family history, receptor status, tumour size and volume, histological and nuclear grade, presence of lymphatic and vascular invasion, perineural invasion, lymphatic and desmoplastic reactions, presence of necrosis, and microcalcification, multicentricity, extensive intraductal component, cutaneous and subcutaneous involvement, pectoral muscle invasion. Axillary nodal involvement was analysed in four groups; 0, 1–3 nodes, 4–9 nodes and >10 nodes. Spearman and Pearson, Kruskal-Wallis and t-test were used as statistical methods. Multiple regression analysis was also performed in correlated parameters.

Results: In univariate analyses, increasing tumour size, presence cutaneous and subcutaneous invasion, presence of nipple invasion multicentricity, presence of pectoral muscle and perineural invasion were statistically significant factors affecting axillary nodal involvement. In multiple regression analyses, presence of extensive intraductal component, estrogen receptor status, tumour size and volume were correlated significantly with axillary nodal involvement.

Conclusion: Major prognosticators for axillary nodal involvement in breast cancer patients are tumour size and volume, the presence or absence of extensive intraductal component and estrogen receptor status.

825 PUBLICATION

Myomammary flap of pectoralis major muscle for breast reconstruction: New technique

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Purpose: simple mastectomy and modified radical mastectomy still the preferred surgical technique for management of breast cancer, as it is

almost always in the second stage (II). Breast reconstruction in Egypt is always accompanied by reduction mammoplasty of the other breast. The new method utilizes a myomammary flap from the other side this flap depends on the other breast being of moderate or large size.

Patient's and Methods: A total of 40 female patients were submitted for breast reconstruction using a pectoralis major myocutaneous flap from the other relatively large breast. The flap depended on a blood supply from the pectoral branch of the thoracoacromial artery. The flap being transferred on the pedicle of the pectorals major tunneled under the skin. The new technique utilizes the nipple on the healthy side to reconstruct the nipple of the new breast at the same time. A reduction mammoplasty was achieved in healthy contralateral huge breast.

Results: Good cosmetic results were achieved in 60% of cases, fair results in 25%, and unsatisfactory in 15%.

Conclusion: this new technique of breast reconstruction is suitable especially for patients with large, healthy breasts and for relatively poor patients.

826 PUBLICATION

Complications after level 1, 2 axillary dissection without division of pectoralis minor

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Purpose: most data on complications after axillary dissection regard level 1, 2, 3 clearance with division of pectoralis minor. The prophylactic dissection carried out at the Royal Marsden NHS Trust as in other Centres today consists of level 1 and 2 without division of pectoralis minor.

Method: analysis of the complications in 200 patients so treated.

Results: 38% of patients developed a seroma (30% required aspirations); 15% had transient lymphoedema (LE); 8% complained of tighter rings and 2.5% had problems with clothing; 17% had restriction of shoulder movements; 85% had numbness and this was slight in 58%, moderate in 33% and total in 4%.

90% of patients had no clinical evidence of LE, 5% of patients thought they had LE but the doctor and the nurse disagreed; 5% of patients had clinical LE. Measurements taken 15 cm above olecranon, 10 cm below olecranon and at the metacarpo-phalangeal joints showed a >5% increase in 13% (15 cm), 12% (10 cm), 15% (metacarpals), 7% (total arm), and a >10% increase in 1% (15 cm), 3% (10 cm), 0.5% (metacarpals), 0% (total arm). Differences in centimetres were:

	15 cm	10 cm	Metacarpals
No difference (0–1 cm)	68%	70%	82%
1–1.9 cm (minimal)	18%	18%	16%
2–2.9 cm (mild)	11%	8%	0.5%
3–3.9 cm (moderate)	1%	2.5%	0
> 4 cm (severe)	0.5%	0.5%	0

Conclusions: Level 1, 2 axillary dissection has in our experience a lesser incidence of lymphoedema than complete axillary dissection.

827 PUBLICATION

Follow-up of postirradiation side effects after breast conserving surgery (BCS): Presentation of a new scoring system based on MRI findings

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Purpose: To establish an objective method for evaluation the extent, topography and quantity of skin and soft tissue side effects after radiotherapy (RT) of the conserved breast and to compare the sequales of different radiation methods.

Methods: 48 patients operated on for breast cancer recieved postoperative RT 1. 50 Gy teletherapy + 10–16 Gy electron boost (12), 2. 50 Gy teletherapy + 10–15 Gy brachytherapy (BT) boost (13), 3. 46–50 Gy teletherapy (12), 4. 36.4 Gy sole HDR-BT (11). The post-RT side effects were examined by MRI, mammogram (MGR), ultrasound (US) and physical examination, MRI was performed on a 0.5 T double breast coil with SE-T1, SE-T2 and 3D-GE sequences. The findings of MKI and MGR were compared to physically detectable side effects using the RTOG/EORTC late radiation morbidity scoring scheme.

Results: US is useful only in the diagnosis of fat necrosis. MGR and physical examination are subjective and low specificity methods to evaluate post-RT side effects. MRI is a suitable and more objective method to detect the real extent and quantity of skin thickening and fibrosis. The differences between the side effects of whole breast RT and sole BT are also clearly demonstrated.

Conclusion: The authors established the MRI criteria for categorization the extent and grade of skin thickening and fibrosis. Breast MRI is an objective toot for assisting to the evaluation of the side effects of postoperative RT. BT alone after BCS is feasible without compromising cosmetic results.

828 PUBLICATION

Analysis of loco-regional failure pattern according to the radiation volume after conservative breast cancer treatment

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Purpose: To determine the optimum radiotherapy (RT) volume in the primary RT for early breast cancer, we analyzed loco-regional failure pattern.

Materials and Methods: In 1991–1995, 264 patients with stage I, II breast cancer were treated with breast-conserving surgery & primary RT. In N0 or <4 involved ALN, RT volume was involved breast alone with tangential technique. In ≥4 involved ALN, ipsilateral supraclavicular fossa (SCF) was also irradiated and in cases with inadequate ALN dissection or perinodal tumor extension, axillary fossa was included in the SCF field with posterior axillary boost (45–50.4 Gy). Supplemental dose to the primary tumor sites was 10–20 Gy.

Results: During the FU periods (median 38 mo), 30 patients recurred. 5-year disease-free survivals of stage I, IIA, & IIB were 93%, 87.2%, & 61.2% respectively. There were 6 LR alone, 13 DM alone, 5 supraclavicular lymph node recurrences (SCLR) alone, 4 LR + DM, & 2 DM + SCLR. There was no axillary recurrence. Four cases among 16 with >8 involved ALN recurred at breast skin. SCLR were more common in the inner quadrant location.

Conclusion: Axillary RT is not necessary in the cases who received adequate ALND. In cases with > 8 involved ALN, skin recurrence was a major LR pattern. Therefore, application of skin bolus should be considered. If the tumor location is inner quadrant, SCF RT can be considered to reduce SCL recurrence, even though axillary lymph nodes are not involved.

829 PUBLICATION

Management of impalpable breast lesions in Greece

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Purpose: Localization biopsy for impalpable breast lesions imaged by mammography is a means of accurately excising the suspicious lesions and avoiding an unnecessarily large biopsy. The results of a prospective study are evaluated here.

Methods: In the last 8 years, 131 women underwent a needle localization breast biopsy (NLBB) for impalpable breast lesion. The mean age was 50.6 years (range 33 to 75). Ten of them belonged in the third age (>65 years old). The mammographic presentation of the lesion was categorized as follows:

Category 1: Suspicious microcalcifications (clustered or other)

Category 2: Stellate lesion with microcalcifications

Category 3: Stellate lesion without microcalcifications

Category 4: Suspicious lesion (opacity-mass or developing density – with ill-defined borders) with microcalcifications

Category 5: Suspicious lesion without microcalcifications

Category 6: Distortion of the normal architectural pattern, striking asymmetry.

The Kopans localization needle and hookwire was applied in all instances with the aid of a special mammographic grid.

Results: The application of the method yielded a total of 25 breast cancers, that is 19.2%. The majority of Stage I and in situ carcinomas were classified on mammographic Category 4. The final staging of the patients found to have a breast cancer was: 6 pts Stage I, 4 pts Stage IIA, 1 pt Stage IIB, 3 pts Stage IIIA, 2 pts Stage V, 2 pts lobular in situ and 7 pts ductal in situ carcinomas. Six out of them underwent conservative surgery and another ten total mastectomy with standard axillary disection. The in situ carcinomas were treated initially with simple mastectomy (4 pts) and conservative surgery plus radiotherapy (5 pts) thereafter.

Conclusion: Needle localization biopsy for suspicious impalpable breast lesions yields a high percentage (19.2%) of breast cancer. This is accor-