definite proof was lacking. Transmission to the child may have occurred during suckling. Montenegro showed that leishmaniasis is an inoculable, contagious disease.⁵ A case of sexual transmission is documented. A laboratory infection due to contamination with *L. braziliensis braziliensis* has occurred in our own laboratory.

- 1 Cuba CA, Marsden PD, Barreto AC, *et al.* Identification of human stocks of *Leishmania* sp isolated from patients with mucocutaneous leishmaniasis in Trés Braços, Bahia-Brazil. *Trans R Soc Trop Med Hyg* (in press).
- 2 Llanos-Cuentas EA, Marsden PD, Lago EL, Barreto AC, Cuba CC, Johnson WD. Human mucocutaneous leishmaniasis in Trés Braços, Bahia-Brazil. An area of *Leishmania braziliensis braziliensis* transmission. II. Cutaneous disease: presentation and evolution. *Rev Soc Bras Med Trop* (in press).
- 3 Zeledon R. Efecto de la temperatura de la piel en la leishmaniasis cutanea experimental. *Rev Soc Bras Med Trop* 1971;5:131-4.
- 4 White SM, Hendricks LD. American cutaneous leishmaniasis. *Int J Dermatol* 1982;21:86-8.
- 5 Montenegro J. The inoculability of *Leishmania*. *American Journal of Tropical Medicine* 1924;4:331-40.

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Partial mastectomy alone in early breast cancer

The clinical management of early breast cancer has evoked considerable controversy over the past 20 years, but the survival of patients with the disease has remained unchanged. Surgical procedures vary widely even within a single centre. Most British surgeons prefer simple mastectomy or wedge excision and radiotherapy,¹ though some still practise modified radical mastectomy.² Worldwide practice varies from radiotherapy as primary treatment to extended radical mastectomy with excision of all nodal drainage areas.³ The optimum treatment for individual patients can best be evaluated by investigating all permutations and combinations of treatment through prospective clinical trials. The results of such studies show how little impact initial treatment has on survival,⁴ suggesting that the least aggressive approach possible should be used after diagnosis.

In 1971 one of us (RT) began a trial to study the results of partial mastectomy without supplementary radiotherapy.⁵ The study was ended because the incidence of local recurrence at three years was unacceptably high (37%). We present a subsequent follow up.

Patients, methods, and results

We studied 37 patients with histologically proved invasive carcinoma (stages I and II). The series was consecutive, but patients were excluded if they had more than one primary growth; widespread peau d'orange; primary growths of affected axillary nodes fixed to the deep fascia; or less than 2 cm between the nipple and the growth's palpable edge. The growth was excised with 2 cm of normal tissue all around. Follow up was three monthly for the first three years, six monthly for two more years, and then yearly (nine to 13 years altogether). We also collected information from the Cambridge Cancer Registry on 330 patients with early breast cancer who presented in 1974. These patients had been managed conventionally with either a modified radical mastectomy or simple mastectomy; some had also received radiotherapy.

Primary tumours were 0.5-5.0 cm (average 2.0 cm) in diameter. Five tumours were in medial, 26 in lateral, and six in intermediate positions in the breast. The axillary nodes were dissected out in 12 patients, but only nine showed histologically confirmed malignant disease.

Tumours recurred in 20 patients (54%), who were disease free for eight to 50 (average 24.5) months postoperatively. Local recurrences were defined as recurrences in the chest wall, axilla, or supraclavicular nodes. Tumours recurred locally in 15 patients (40%), who survived three years or more, with a mean of 23 months before relapse. Nine patients with lateral, three with medial,

and three with intermediary tumours developed recurrences in the same breast. The mean diameter of these recurrences was 2.3 cm. In all but one patient the recurrence lay immediately below the operation scar, suggesting that remaining malignant cells had colonised the wound. Seven patients with histologically proved recurrences underwent total mastectomy, five axillary dissection, and three both. Five were disease free four years after treatment, although in two of these the disease later recurred.

Disease free survival patterns in patients who had undergone partial mastectomy (○—○) and controls (△—△); and survival patterns corrected for age in patients (○--○) and controls (△--△).

The figure shows overall and disease free survival patterns for our 37 patients and the 330 patients in whom radical or simple mastectomy with or without radiotherapy was the primary treatment. Primary surgical treatment clearly did not affect survival even when limited to partial mastectomy alone.

Comment

This study shows that the results of minimal surgical intervention are similar to those of more aggressive approaches in terms of survival, despite the high incidence of local recurrence. This suggests that the type of the disease at presentation is more important than the surgical procedure used.

We believe that the controversy surrounding the management of early breast cancer is now over. Excision with radiotherapy is the most cosmetically acceptable treatment with the lowest overall morbidity. New advances require the successful management of systemic disease.

1 Baum M. The role of local treatment for primary carcinoma of the breast. *Ann R Coll Surg Engl* 1978;60:479-82.

2 Patey DH, Dyson WH. The prognosis of carcinoma of the breast in relation to the type of operation performed. *Br J Cancer* 1948;2:7.

3 Bluming AZ. Treatment of primary breast cancer without morbidity. *Am J Med* 1982;72:820-8.

4 Veronesi U, Saccozzi R, Vecchio DM. Comparing radical mastectomy with quadrantectomy, axillary dissection, and radiotherapy in patients with small cancers of the breast. *N Engl J Med* 1981;305:6-11.

5 Tagart REB. Partial mastectomy for breast cancer. *Br Med J* 1978;iii:1268.

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