

Pregnancy and abortion in breast cancer patients

Two case reports and a literature review

Elizabeth M Murray, I Dudley Werner

Breast cancer in pregnancy is by itself not an indication for abortion. We document the case histories of 2 patients with breast cancer (recurrent or advanced) who elected to carry pregnancies to term. Pregnancy concurrent with or subsequent to breast cancer is not associated with a worse prognosis than would be observed in non-pregnant women. Treatment for breast cancer may be an indication for abortion, but chemotherapy may be administered to pregnant patients, although it should be avoided in the first trimester if possible. Treatment such as radiotherapy may not be aimed at improving survival and this knowledge may affect a patient's decision regarding abortion. Breast cancer patients undergoing abortion must be aware of the exact indications for the procedure and the difference between medical and social indications.

S Afr Med J 1997; 87: 1538-1539.

Over the last few decades opinion has changed in that breast cancer in a pregnant woman is, by itself, no longer regarded as an indication for abortion. If termination of pregnancy is considered for patients with active or previous breast cancer, the patient and the medical practitioner should be fully informed of the indications for this procedure.

We wish to document the clinical histories of 2 patients, one of whom had recurrent breast cancer and the other newly diagnosed stage IV disease at the time of pregnancy. After counselling, both patients elected to carry the pregnancies to term.

Case 1

A 32-year-old woman, gravida 1 para 1, underwent mastectomy and axillary clearance for a stage 1 carcinoma of the left breast in 1991. Five years later, in April 1996, she presented with amenorrhoea, nausea and vomiting and a scar recurrence. A urine pregnancy test was negative. Metastatic screening tests, including chest radiograph and bone scan, did not reveal malignancy. The local recurrence was excised but, on histological examination, the margins were positive. The patient returned to the clinic 4 weeks later and was found to be 15 weeks pregnant on ultrasound

examination. She was counselled about termination of pregnancy. When she was informed that she would not be able to receive radiotherapy for the purposes of local control if she continued with the pregnancy, but that the prognosis would not be affected by the omission of radiotherapy, she chose to continue with the pregnancy. This led to heated debate among the various clinicians involved in the patient's care, several of whom felt that breast cancer itself was a medical indication for abortion. On 21 October 1996, at 37 weeks' gestation, the patient gave birth to a healthy 2 600 g girl by normal vaginal delivery. Postpartum chest wall radiotherapy was considered, but it was decided only to follow up the patient. She was well and clear of recurrence when last seen at the clinic in May 1997.

Case 2

A 36-year-old woman, gravida 4 para 4, was referred to the breast clinic in June 1996 at 23 weeks of pregnancy with stage IV breast carcinoma with pulmonary infiltrates and bilateral effusions as well as bone metastases. Her performance status was 4. The patient wished to continue the pregnancy until the fetus was viable. A gynaecologist consulted felt that termination might be difficult at 23 weeks. Opinion was divided as to the wisdom of continuation of the pregnancy. After counselling, the patient accepted anticancer cytotoxic management and commenced active therapy comprising a regimen of doxorubicin 45 mg/m² and cyclophosphamide 600 mg/m² 3-weekly. Approximately 3 weeks after the first cycle of treatment the patient was admitted with increased shortness of breath. Pleural and pericardial aspirations were performed. Chemotherapy was continued, and after a total of three cycles the lung fields appeared clearer. At 32 - 33 weeks, the day the 4th cycle of chemotherapy was due to commence, the patient gave birth to a healthy 1 800 g boy by normal vaginal delivery. This was after betamethasone administration and induction of labour. The patient was keen to continue treatment immediately and the drug regimen was subsequently changed to include 5-fluorouracil at a dose of 500 mg/m² and to a 4-weekly cycle. At the time of the sixth cycle of treatment, epirubicin was substituted for doxorubicin at a dose of 50 mg/m².

The patient's condition improved markedly after delivery of the baby. After a further two cycles of chemotherapy this treatment was discontinued and tamoxifen commenced. Approximately 6 weeks later a salvage chemotherapy regimen was commenced as the patient was very keen to continue treatment and her clinical status was deteriorating. The disease progressed and chemotherapy was discontinued. At the time of writing (May 1997) the patient's performance status is 3 but she is actively involved in the care of her baby.

Discussion

In the past abortion was very strongly recommended for pregnant breast cancer patients. This was often combined with oophorectomy. It was believed that breast cancer in pregnancy was a particularly dreadful situation as the prognosis for the breast cancer was very poor. Haagensen actually recommended that surgery for the breast cancer should be refused in view of the grim prognosis (quoted by

Department of Radiation Oncology, Groote Schuur Hospital and University of Cape Town

Elizabeth M Murray, MMed Rad (T)

I Dudley Werner, MMed (Rad Onc), FRCC

Petrek).¹ Opinion has changed gradually, but as far back as 1962 it was reported from the Memorial Hospital that abortion did not improve survival in breast cancer.¹ Several studies have been reported but only one modern series (of 20 pregnant patients) with control subjects has shown a significantly worse survival rate for women with a current pregnancy.¹ Overall the prognosis for pregnancy-associated breast cancer is worse than for non-pregnancy-associated cancer, but only because the pregnancy-associated disease tends to be more advanced at presentation.¹

Whatever the effect of pregnancy on concurrent breast cancer, it will presumably have the same effect on occult metastases if pregnancy occurs subsequent to the treatment of breast cancer. The effect of subsequent pregnancy is uncertain, but it does not appear to worsen the prognosis of breast cancer.² Two case-matching studies have indicated that subsequent pregnancy may improve the breast cancer prognosis.²

In 1995 Von Schoultz *et al.*³ reported a relative hazard of 0.48 for women with pregnancy within 5 years of the diagnosis of breast cancer in comparison with women without a subsequent pregnancy, suggesting a possible decreased risk of dissemination.³

Treatment which would be extremely harmful to a fetus may be necessary for breast cancer¹ and this would provide a definite ground for abortion. Modified radical mastectomy is usually the recommended local treatment.⁴ Breast conservation therapy may be appropriate if the pregnancy is in the third trimester and radiotherapy can be delayed until after delivery.⁵ Radical-dose chest wall or breast radiotherapy should be avoided if the patient is to continue with the pregnancy.^{1,4} Both the practitioner and the patient must bear in mind the difference between improved local control with radiotherapy and improved prognosis. The Early Breast Cancer Trialists' Collaborative Group⁵ found that adjuvant postoperative radiotherapy for new cases of breast cancer does not have a definite effect on survival at 10 years. In the case of local postmastectomy recurrence it is not clear whether radiotherapy or even chemotherapy improves the prognosis.⁵

Termination of pregnancy must also be considered if chemotherapy is expected to damage the fetus. Most antineoplastic agents cross the placenta.⁷ Doxorubicin may be an exception.⁸ If chemotherapy cannot be avoided in the first trimester, folic acid antagonists should not be administered. Generally, the risk of teratogenesis from chemotherapy in the first trimester may be lower than is commonly thought.⁸ In several reported cases, teratogenesis may have been due to radiotherapy which was also administered during pregnancy.⁸ Alkylating agents appear to be less potent teratogens than methotrexate.⁸ In the second and third trimesters chemotherapy may cause low birth weight,¹ microcephaly, mental retardation and impaired learning. The least teratogenic regimens should still be used if chemotherapy is administered during these stages of pregnancy.⁷ Unknown effects which could appear in childhood are also of concern.¹

There are many who feel that a woman with active cancer, or one with a high risk of relapse, should have an abortion, whether or not the pregnancy will affect the prognosis and whether or not the mother is undergoing treatment that will damage the baby. If the abortion is not contributing to treatment in any way it must be understood that the recommendation is made for social reasons. It is suggested

that it is more sensible for a woman who will probably not survive for many years to undergo termination of pregnancy. However, in case 1, one of the counsellors commented that the patient would have been psychologically devastated by a termination. This was a planned pregnancy and the birth was eagerly awaited by the whole family. Just as there is an argument that a child is likely to be brought up in less than ideal circumstances if the mother dies of cancer, one can argue that in this case termination of a longed-for pregnancy may have been followed by depression, particularly if the patient understood that the termination was being done because her practitioners were expecting a relapse and if she believed abortion to be wrong, which also emerged during counselling. The quality of life in her remaining years might have been badly affected, while the aim of treatment is to try to improve and maintain quality of life. Many regard single-parent families as less than ideal, but millions of children are reared in this situation. The indication for abortion at the time of initial counselling in case 1 would have been therapeutic as it would have allowed postoperative radiotherapy. However, the patient rejected termination of pregnancy which would have allowed treatment aimed at local control only. The other reasons for termination of pregnancy were social.

It must be noted that even if the mother is incurable, her consent has to be obtained for any acts of omission or commission performed for the sake of the baby's survival or health. In a case described in the *Lancet* in 1988⁹ a caesarean section was performed on a dying woman against her wishes in order to try and save her fetus. The non-viable fetus died 2 hours postoperatively and the mother 2 days later.

Patients often expect directive counselling from their obstetricians and oncologists. It is essential, if termination of pregnancy is to be considered in cancer patients, that the patient be aware of the exact indications for this procedure and of the difference between medical and social reasons for a termination. There must be a multidisciplinary approach involving the obstetrician, the radiation oncologist and the social worker. We would not regard a diagnosis of breast cancer by itself as a medical indication although treatment for breast cancer may in some cases constitute a medical indication for abortion. Both the patients discussed wished to avoid termination of pregnancy if possible, but would have chosen termination of pregnancy if it would have improved their chances of survival.

The authors would like to thank Drs J Anthony and L Denny of the Department of Obstetrics and Gynaecology for their participation in the care of these patients and discussions.

REFERENCES

- Petrek JA. Breast cancer during pregnancy. *Cancer* 1994; **74**: suppl, 518-527.
- Petrek JA. Pregnancy safety after breast cancer. *Cancer* 1994; **74**: suppl, 528-531.
- Von Schoultz E, Johansson H, Wilking N, Rutqvist L. Influence of prior and subsequent pregnancy on breast cancer prognosis. *J Clin Oncol* 1995; **13**: 430-434.
- Petrek JA. Breast cancer and pregnancy. In: Harris JR, Hellman S, Henderson IC, eds. *Breast Diseases*. 2nd ed. Philadelphia: J B Lippincott, 1991: 809-816.
- Early Breast Cancer Trialists' Collaborative Group. Effects of radiotherapy and surgery in early breast cancer: An overview of the randomized trials. *N Engl J Med* 1995; **333**: 1444-1455.
- Recht A, Hayes DF. Local recurrence following mastectomy. In: Harris JR, Hellman S, Henderson IC, eds. *Breast Diseases*. 2nd ed. Philadelphia: J B Lippincott, 1991: 527-540.
- Doll DC. Chemotherapy in pregnancy. In: Perry MC, ed. *The Chemotherapy Source Book*. Baltimore: Williams and Wilkins, 1992: 703-709.
- Roboz J, Gleicher N, Wu K, *et al.* Does doxorubicin cross the placenta? (Letter). *Lancet* 1979; **2**: 1382-1383.
- Brahms D. A baby's life or a mother's liberty: A United States case. *Lancet* 1988; **1**: 1006.

Accepted 18 July 1997.