Surgical excision of lung metastases from squamous carcinoma of the cervix

A report of 2 cases

N. G. DE MOOR, A. V. BERRY, M. M. NISSENBAUM

Summary

These 2 case reports serve to emphasize two important points concerning carcinoma of the cervix: (*i*) blood-borne metastases are now frequently encountered in this disease; and (*ii*) in selected cases surgical excision of a secondary deposit in the lung is the treatment of choice and may even result in cure.

S Afr Med J 1983; **63**: 25-26.

Department of Radiation Therapy and Oncology, Johannesburg and Hillbrow Hospitals and University of the Witwatersrand, Johannesburg
N. G. DE MOOR, M.B. B.CH., D.M.R. (T.)
M. M. NISSENBAUM, B.SC. ENG., M.B. B.CH., M.MED. (RAD.T.)
Cytology Unit, Department of Anatomical Pathology, School of Pathology, South African Institute for Medical Research and University of the Witwatersrand, Johannesburg
A. V. BERRY, M.B. B.CH., F.I.A.C

Date received: 23 February 1982.
Reprint requests: Dr M. M. Nissenbaum, Dept of Radiation Therapy and Oncology, Hillbrow Hospital, Private Bag 23140, Joubert Park, 2044 RSA.

Modern radiotherapy has improved control of cancer in the pelvis, so that more patients survive for longer periods.[1] With longer survival distant metastases may become evident with time, and the diagnosis and treatment of these metastases has become more important.

The commonest single site for blood-borne metastases is the lung.[1,2] Since all patients with cancer of the cervix have a chest radiograph before therapy, any subsequent lung lesion is consi-

dered a metastasis unless it is proved otherwise. In carefully selected cases, surgical intervention may offer the best outlook for tumour control or even cure.[3-5]

Case reports

Case 1

A 40-year-old woman, para 2, gravida 2, underwent a hysterectomy in 1964 for poorly differentiated squamous carcinoma of the cervix. Six weeks later, in September 1964, an exophytic growth was noted in the vaginal vault. Histological examination of biopsy specimens from this area showed the presence of infiltrating moderately differentiated non-keratinizing squamous carcinoma. The patient received a course of radical radiotherapy using cobalt-60 teletherapy.

Five years later, in January 1970, she had an episode of haemoptysis but no lesions were detected on a chest radiograph. When she was again seen in July 1970 there had been no further haemoptysis. However, a chest radiograph in August 1971 revealed an ill-defined ovoid opacity in the right midzone. The patient refused admission for further investigation because she had no symptoms. Four years later, in August 1975, haemoptysis recurred. Chest radiographs now showed a well-demarcated, sharply defined mass in the anterior segment of the left upper lobe measuring 4 x 5 x 7 cm. A review of the January 1970 radiograph showed the presence of a small 1 cm nodule in this area, which by August 1971 had grown to about 1,5 cm. The rate of growth was therefore very slow. Because the primary lesion was controlled a thoracotomy was suggested, and in August 1975 a right upper and middle lobectomy was performed.

Histological examination revealed an infiltrating, moderately differentiated, non-keratinizing squamous carcinoma. There was no evidence that this had arisen *de novo* in the lung, and it was reported as consistent with a secondary deposit from the primary carcinoma of the cervix. The mediastinal lymph nodes were not involved. Although the patient was now suffering from hypertension and cardiac failure, there were no symptoms attributable to the carcinoma of the cervix.

Three years later, in August 1978, chest radiographs revealed multiple pulmonary metastases. The patient was losing weight and complained of chest pain, and in February 1980 she was treated by whole-lung irradiation with very little success. She died in May 1980, having survived for 5 years after the lobectomy with 3 years free of disease.

Case 2

This patient, para 1, gravida 1, was aged 49 in July 1970 when a biopsy of the cervix revealed the presence of an infiltrating, well-differentiated squamous carcinoma of the cervix, clinical stage IIIB. A radical course of radiotherapy using daily fractionation was given with cobalt-60 (external beam only).

Six years later, in June 1976, a chest radiograph revealed a small lesion in the left lung. A repeat radiograph in October 1976 showed that the lesion was increasing in size. Two sputum specimens contained malignant cells consistent in appearance with origin from keratinizing squamous carcinoma.

In January 1977 a lobectomy was performed after investigation had revealed that the primary tumour was under control. A tumour measuring 8 x 6 x 4 cm, which appeared to be arising from a large bronchus, was present.

Microscopic examination revealed the presence of a well-differentiated, keratinizing squamous carcinoma which appeared to be ulcerating through the bronchial wall. It was noted that throughout this bronchus the epithelial lining was of the ciliated respiratory type; nowhere in many sections of adjacent lung tissue was there any evidence of squamous metaplasia. The conclusion was that this squamous carcinoma was a metastatic deposit from the primary carcinoma of the cervix. When last seen, 5 years after lobectomy, the patient was alive and well and free of disease.

Discussion

The frequency of distant metastases in patients with cancer of the cervix varies with the stage of the disease. About 20% of patients in stage II and 100% in stage IV will eventually develop metastases, and in about 60% of cases metastases will have been detected within 2 years of treatment of the primary disease. Once metastases have been detected the prognosis is poor, and over 70% of patients will have died within the first year. Even if metastasis has taken several years to become evident, once it is detected treatment should not be delayed for too long, since long-term survival or even cure may still be achieved.

In the case of metastases to the lung, the commonest site of blood-borne secondaries, careful consideration should be given to treatment by surgical excision. The following criteria for selection of patients[3,4] for surgery have been suggested:

1. The lesion must be clearly identifiable and resectable. The patient with a single solitary mass has a better prognosis. But even if there are multiple lesions, especially if they are unilateral and resectable, surgery should be considered.[2,3,5]
2. The primary lesion must be under control.
3. There should be no other metastases which may drastically worsen the prognosis, e.g. in the liver.
4. The tumour should be slow-growing, i.e. with a doubling time of more than 40 days.
5. There should be a sufficiently long interval between treatment of the primary lesion and appearance of the metastasis. It has been shown that the 3-year survival rate after excision of the lung metastasis may increase from 20% to 40% if the disease-free interval has been more than 1 year.

The operation should be carried out about 2 months after detection of the metastasis. This may provide a guide towards estimating the rate of tumour growth, and moreover multiple lung metastases may become evident and rule out surgical treatment.

Surgical methods include wedge resection(s), lobectomy and even pneumonectomy.

Conclusion

In carefully selected cases, surgical excision of lung metastases from carcinoma of the cervix may offer the patient the best prognosis.

REFERENCES

1. Carlson V, Delclos L, Fletcher GH. Distant metastases in squamous cell carcinoma of the uterine cervix. *Radiology* 1967; **88:** 961-966.
2. De Moor NG. Preliminary report of results of a 5 year follow-up of carcinoma of cervix uteri in the African patient. Paper presented at a Symposium on Cancer Therapy held at Livingstone Hospital, Port Elizabeth, 1969.
3. Casey MT. Management of solitary metastases to lung and mediastinum. *Nova Scotia Med Bull* 1973; 19-21.
4. Hutchinson DE, Deaner RN. Resection of pulmonary secondary tumors. *Am J Surg* 1972; **124:** 732-737.
5. Rees GM, Cleland WP. Surgical treatment of pulmonary metastases. *Thorax* 1972; **27:** 654-656.