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(*Accepted 17 August 1984*)

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Value of follow up in testicular cancer

Over the past decade the results in treating testicular cancer have improved greatly. This is due to a combination of accurate assessment of disease by study of tumour markers and by computed tomography, and the development of effective chemotherapy regimens.[1] Over 98% of patients now achieve complete remission with a combination of surgery, radiotherapy, and chemotherapy.[2]

Early detection of relapse is desirable as prognosis is directly related to the volume of metastatic disease at the introduction of treatment.[3] The sensitivity required to detect low volume relapses can now be achieved by repeated assessment. Intense follow up, however, is costly and can cause psychological problems. We evaluated the usefulness of the intensive follow up programme provided to all patients with testicular cancer in this regional centre.

Patients, methods, results

Patients undergoing follow up for testicular cancer fall into three groups: (1) those with stage 1 teratoma not receiving any treatment after orchidectomy; (2) those in complete remission after receiving chemotherapy and sometimes surgery for metastatic teratoma; and (3) those with seminoma who have received radiotherapy or chemotherapy or both. All three groups have been subjected to the same rigid follow up policy in Cambridge since 1981. This consists of taking a history, examination, chest radiography, and estimation of serum α fetoprotein and β human chorionic gonadotrophin concentrations monthly for one year; every two months for the next year; every three months for the next year; every six months for the next year; and after that yearly. Computed tomograms of the abdomen were obtained at three, six, and 12 months. A computed tomogram of the thorax was obtained at the same time only if the chest *x* ray film was clear.

The table summarises the results of this follow up programme. No relapses were detected in the 51 patients with seminoma. Six relapses were detected in the 55 patients with teratoma (10·9%). The clinician was alerted to the relapse by the clinical history and examination (two patients); a raised concentration of β human chorionic gonadotrophin (one); a computed tomogram of the abdomen (one); a computed tomogram of the thorax (one); and a chest *x* ray film (one). In all other patients the follow up concentrations of α fetoprotein and β human chorionic gonadotrophin were normal. On four occasions a single abnormal concentration led to several investigations. All yielded negative results, and further measurements of the two markers were also normal. All the patients who relapsed went into further complete remission after salvage chemotherapy. None of our patients developed tumours in the contralateral testis.

Comment

From this series we conclude that intensive follow up for patients with treated seminoma is unnecessary and that routine repeated measurement of concentrations of α fetoprotein and β human chorionic gonadotrophin in these patients is of no value. Few of these patients have raised concentrations of the markers at diagnosis, and in those who do the tumours are often found to have teratomatous elements on histological review. The frequency of clinic visits, computed tomography, and chest radiography could be reduced. Patients with teratoma do benefit from intensive follow up, as the incidence of relapse is considerable. In stage I teratoma surveillance has replaced prophylactic radiotherapy and is essential as 15% of patients will develop recurrent disease.[4]

Outcome of follow up related to type and stage of disease

	I	II	III	IV
Patients with seminoma* (n = 51)	38	12	1	
Patients with teratoma† (n = 55)	28	8	1	18
No who relapsed	3	3		
Time to relapse (months)	4, 6, 19	4, 8, 9		

*No relapses occurred in these patients (mean follow up 16·2 months, median 15·8 months).
†Mean follow up 16·5 months, median 17·1 months.

The cost of the first three years of the follow up programme described is £3000 per patient at present prices. As the overall incidence of relapse in seminoma is less than one in 50 patients, the cost of detecting one early relapse by this programme must exceed £150 000. Testicular cancer is a model of a curable solid tumour. Cost effective management strategies are essential to preserve health care resources. If more common tumours become amenable to radical treatment the cost will be prohibitive unless the problem of follow up is addressed.

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(*Accepted 12 September 1984*)

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