Hemipelvectomy for liposarcoma: an unusual case and course

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Summary

A patient with liposarcoma of the upper thigh and pelvis treated by hemipelvectomy is described. Pre-operative treatment with radiotherapy and chemotherapy induced regression and necrosis of the growth. The treatment of this tumour is discussed as well as the possibility that the pre-operative therapy converted an inoperable tumour into an operable one.

KEY WORDS: liposarcoma, pelvis, hemipelvectomy, radiotherapy, fluorouracil.

Introduction

Most soft tissue sarcomas are tumours of high local malignancy; liposarcomas are particularly malignant (Miller, 1977). The treatment of this tumour should be radical and aggressive even though involving very wide excisions (Krementz and Shaver, 1963). When the tumour involves the buttock, hip and upper thigh a radical operation offers the best chance of cure. The operation of hemipelvectomy in a reasonably fit patient carries a very acceptable mortality and morbidity rate. Miller (1977) reports a mortality rate of only 1.5% in a series of 126 cases. Douglass, Razack and Holyoke (1975) had no mortality in 50 patients.

We report a case of liposarcoma of the left thigh and pelvis in which the disease was thought to be incurable and inoperable. After a course of radiotherapy and chemotherapy, bleeding of the tumour mass resulted in a reassessment of the patient and a left hemipelvectomy was successfully performed. The patient is alive and well 3 years after surgery with no evidence of recurrence.

Case report

A 46-year-old male was admitted with a mass in the left inguinal region. The lump had grown rapidly

over the previous 6 months, but the patient had previously refused treatment.

There was no weight loss. The left groin showed a mass of 20×20 cm, hard, fixed and painless which extended half-way down the thigh, and disappeared proximally beneath the inguinal ligament (Fig. 1). There was some mild oedema of the left leg, and absent peripheral pulses on this side.

A radiograph of the area showed the mass to contain irregular areas of calcification, both in the periphery as well as in the centre (Fig. 2). A biopsy of the mass revealed a partially calcified gelatinous tumour and histology was reported as a liposarcoma of the mixed type.

Investigations performed included routine blood and urine tests, and liver, spleen and bone scans which were all normal. Computerized tomography of the mass and abdomen indicated that tumour reached the level of the anterior superior iliac spine.

The tumour was at this stage thought to be inoperable, and he was therefore referred for radiotherapy. Treatment comprised 5000 rads in a regime of two doses of 300 rads daily, after sensitization with 5-fluorouracil. There was obvious clinical regression of the mass. However, the biopsy site broke down and a necrotic discharge continued over a period of months.

The patient was admitted as an emergency 6 months later with severe exanguinating arterial haemorrhage from the necrotic tumour of the left thigh. Cessation of the bleeding could only be achieved by ligation of the left external iliac artery in addition to local suture. At surgery it was noted that no tumour was present in the pelvis. The left leg became partially ischaemic, and the tumour area necrotic and it was decided to perform a radical excision of the tumour by means of a left hemipelvectomy.

FIG. 1. Liposarcoma of the left thigh on presentation. The tumour disappeared beneath the inguinal ligament proximally.

The operation involved removal of the left lower limb in continuity with the left pelvis. The ileum was transected 6 cm from the left sacroiliac joint, and the pubis was divided at the symphysis.

The patient made a very good recovery and was discharged for rehabilitation 22 days after the operation. The patient did not manage very well with a prosthesis, but is very satisfied with crutches alone (Fig. 3).

Discussion

An aggressive surgical approach to sarcoma of the pelvic girdle offers the best chance of cure (Ravitch and Wilson, 1964). Hemipelvectomy as a form of treatment is used infrequently due to the extreme mutilation which results, although it may be the only way to help some patients. Douglass *et al.* (1975) describe the results of hemipelvectomy in 50 patients and stress that it is not a very complicated operation. This was confirmed by Miller (1977) who describes his experience with 126 cases. Mortality rates are also low. Miller reported a mortality rate of 1.5%;

FIG. 2. Radiograph of the tumour of the left thigh showing the irregular areas of calcification.

Douglass *et al.* (1975) and Sneppen *et al.* (1978) in 41 cases had no mortality.

Murdoch (1969) and Sneppen *et al.* (1978) found that the rate of performance of the operation to be one per million population per year. This suggests that hemipelvectomy could be carried out more frequently in most areas.

The postoperative survival is relatively good. Miller (1977) reported an overall 33.3% survival over 30 years, and Douglass *et al.* (1975) found 20% of patients alive at 10 years. Sneppen *et al.* (1978) reported that there were 16 survivors, out of the 41 patients, who lived an average of 6.5 years. The remainder lived from 2 months to 7 years. Wu *et al.* (1977) found a 5-year survival rate of 42.1% in a group of 19 patients.

Liposarcoma is a malignant tumour which is considered insensitive to radiotherapy and chemotherapy (Enterline *et al.*, 1960). Wilbur (1975) suggested that some sarcomas respond with better results, if chemotherapy and radiotherapy are added following surgery. Stout (1944) has stated that some liposarcomas are definitely radiosensitive and that radiotherapy as a mode of treatment should not be neglected. Sensitization of the tumour by 5-fluorouracil before radiotherapy induced a dramatic reduction in size in our case. The computerized tomography before treatment suggested that the tumour extended beyond the capabilities of surgery. From

FIG. 3. Final result following left hemipelvectomy for liposarcoma. The patient preferred crutches to his prosthesis.

time to time cases which appear inoperable are allowed to deteriorate without radical therapy. In our own case there is a possibility that the initial assessment was incorrect and radical surgery should have been offered on presentation. However, it is more likely that the radiotherapy and chemotherapy converted a tumour which was inoperable, to one which was not only resectable, but possibly curable.

Rehabilitation of our patient proceeded satisfac-

torily, although he preferred crutches to a prosthesis. Reports of the use of a prosthesis after hemipelvectomy vary considerably. Higinbotham and Coley (1956) found that only two out of 25 cases used their prosthesis, whereas Miller (1959) reported 22 users out of 32 cases. Sneppen *et al.* (1979) indicated that 15 out of 27 cases used the prosthesis but did point out that eight patients out of 41 had mental problems with one even committing suicide.

The results of surgery should be considered in terms of immediate goals of the surgical procedure: control of the disease and functions. Hemipelvectomy is justifiable not only for complete cure but, under some circumstances for palliation. Radiotherapy and chemotherapy may make an inoperable tumour resectable or even curable. Patients can function satisfactorily after the operation even though the results appear rather mutilating.

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