Leiomyosarcoma of the spermatic cord

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Summary

Leiomyosarcoma of the spermatic cord is extremely rare. We report a case associated with recurrent papillary bladder tumours and benign hyperplasia of the prostate. The use of adjuvant chemotherapy is described for the first time in the management of this condition.

KEY WORDS: leiomyosarcoma, spermatic cord, chemotherapy.

Introduction

Neoplasms affecting the spermatic cord are rare (Zuckner and Aronberg, 1951; Bissada, Finkbeiner and Redman, 1976) and 70% show benign characteristics. The most commonly reported malignant tumour is the rhabdomyosarcoma, fibrosarcomas and leiomyosarcomas occurring less often. We believe there have been 32 cases of leiomyosarcoma of the spermatic cord reported since its first description by Patel in 1907.

Case report

A 63-year-old man presented in 1975 with painless haematuria. This was found to be due to a superficial papillary bladder tumour near the left ureteric orifice and was treated by cystodiathermy. Regular follow-up cystoscopies revealed recurrent bladder tumours in March 1979 and these were similarly treated.

In August 1979, he complained of a firm, painless mobile mass in the left inguinal region, which had been present for 6 weeks and was slowly enlarging. At operation, a 3 × 3 cm size cystic mass was found within the spermatic cord, 3 cm distal to the deep inguinal ring. Biopsy and frozen section examination demonstrated a spindle-celled sarcoma and left radical orchidectomy was performed. Subsequent histological examination showed a markedly vascular tumour with areas of haemorrhage and the features of a leiomyosarcoma. The tumour was composed of

spindle cells with large binucleate and multinucleate cells scattered within and cleft-like spaces with a flattened endothelial cell lining (Fig. 1).

Routine haematology and biochemistry tests were normal. Chest X-ray, isotope liver and bone scans showed no metastases and an intravenous urogram revealed only a trabeculated bladder and a bladder diverticulum.

Three weeks postoperatively, a course of adjuvant chemotherapy was commenced. Vincristine, 2 mg was given intravenously, followed 6 hr later by adriamycin, 50 mg, and methotrexate, 100 mg. Leucovorin, 27 mg, was given intramuscularly after 24 hr. Treatment was continued as an in-patient at monthly intervals for one year, 2-monthly intervals for 6 months, and then on 2 further occasions, each 6 months apart. The treatment was well tolerated, there being no evidence of recurrence or dissemination of the tumour 32 months postoperatively. Severe prostatic symptoms developed 12 months postoperatively and a transurethral resection was performed, histology demonstrating benign hyperplasia with no evidence of malignancy. No further recurrence of the bladder tumours has occurred.

Discussion

Since the first reported case of leiomyosarcoma of the spermatic cord, further cases have been described (Jenkins and Subbuswamy, 1972; Deluise, Draper and Gray, 1976; Banik and Guha, 1979; Buckley and Tolley, 1981). Kyle (1966) reviewed the subject some years ago. These tumours usually occur in men over the age of 50 years, but details available from 32 previously reported cases show a wide range of age at presentation (15-78 years). They are more often situated near the testis than in the inguinal region. It is probable that the association of the tumour with prostatic hyperplasia (Zuckner and Aronberg, 1951; Bevan, 1954) is accounted for by age alone, but we have found no previous reference to associated bladder tumours.

There has been debate as to the origin of this

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FIG. 1. Section of tumour ($\times 75$).

tumour. It has been suggested that it derives from the walls of blood vessels, the vas deferens, smooth muscle cells of the cremaster and undifferentiated mesenchymal cells. Some reports have pointed to the development of sarcomatous change within a benign leiomyoma (Jenkins and Subbuswamy, 1972; Bevan, 1954). Macroscopically, the tumours appear encapsulated, firm and nodular with cystic and necrotic areas (Jenkins and Subbuswamy, 1972; Buckley and Tolley, 1981; Kyle, 1966). Microscopically, they consist of interlacing strands of spindle shaped cells with marked variation in nuclear size and chromatic distribution, and large numbers of mitotic figures.

The spread of leiomyosarcoma of the spermatic cord is believed to be primarily by the haematogenous route (Banik and Guha, 1979; Strong, 1942). Due to their rarity, full evaluation of different forms of therapy is lacking, but the cornerstone of treatment is radical orchidectomy with ligation of the spermatic cord at the deep inguinal ring. The role of surgery and radiotherapy to the retroperitoneal lymph nodes is undecided, though some authors (Banik and Guha, 1979; Weitzner, 1973) feel it to be unwarranted.

As with many other soft tissue sarcomas, the prognosis for patients with leiomyosarcoma of the spermatic cord is poor. Kyle (1966) suggested a probable 5 year survival rate of 10–15%. Of the 22 cases in his series, nearly half died in less than 2 years. We were able to find only one case report in which specific antimitotic chemotherapy was given for the treatment of lung metastases from this tumour (Jenkins and Subbuswamy, 1972). We are unaware of adjuvant chemotherapy previously being used in

this condition in the absence of detectable metastases. In view of the poor outlook for patients with this tumour, a well tolerated course of chemotherapy, such as was given in this case, would seem to be well justified.

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References

- BANIK, S. & GUHA, P.K. (1979) Paratesticular rhabdomyosarcomas and leiomyosarcomas: A clinicopathological review. *Journal of Urology*, **121**, 823.
- BEVAN, P.G. (1954) Malignant leiomyoma of the spermatic cord. *British Journal of Surgery*, **42**, 101.
- BISSADA, N.K., FINKBEINER, A.E. & REDMAN, J.F. (1976) Paratesticular sarcomas: Review of management. *Journal of Urology*, **116**, 198.
- BUCKLEY, P.M. & TOLLEY, D.A. (1981) Leiomyosarcoma of the spermatic cord. *British Journal of Urology*, **53**, 193.
- DELUISE, V.P., DRAPER, J.W. & GRAY, G.F. (1976) Smooth muscle tumours of the testicular adnexa. *Journal of Urology*, **115**, 685.
- JENKINS, D.G. & SUBBUSWAMY, S.G. (1972) Leiomyosarcoma of the spermatic cord. *British Journal of Surgery*, **59**, 408.
- KYLE, V.N. (1966) Leiomyosarcoma of the spermatic cord: a review of the literature and report of an additional case. *Journal of Urology*, **96**, 795.
- PATEL, A. (1907) Tumeur maligne du cordon spermatique (léiomyome malin). *Lyon médical*, **104**, 12.
- STRONG, G.H. (1942) Lipoma of the spermatic cord: case report and review of the literature. *Journal of Urology*, **48**, 527.
- WEITZNER, S. (1973) Leiomyosarcoma of the spermatic cord and retroperitoneal lymph node dissection. *American Surgeon*, **39**, 352.
- ZUCKNER, J. & ARONBERG, L.M. (1951) Leiomyosarcoma of the spermatic cord with the report of a case. *Journal of Urology*, **66**, 285.

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