

TESTICULAR NEOPLASM IN FATHER AND SON

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The incidence of testicular germinal tumors is 2 to 3 cases per 100,000. Such tumors constitute only 0.7 to 2.0 per cent of malignant tumors in men.¹⁻³ Because this neoplasm is so rare it has been impossible to determine the role of hereditary or environmental influences from a series of cases. Thus, we must rely upon case reports to learn about the degree of familial incidence of these tumors.^{4, 5}

CASE REPORTS

M. K., a 38-year-old white man, was hospitalized owing to a testicular enlargement 1 year in duration. Physical examination was unremarkable except for a nodular mass in the left scrotum which replaced the testicle; the mass did not transmit light. Chest x-ray and excretory urogram (IVP) were normal. Radical orchiectomy was performed and microscopic sections revealed pure seminoma. The patient underwent radiation therapy to the retroperitoneal nodes and has had no evidence of recurrence.

R. K., the 19-year-old son of M. K., was admitted to the hospital 2 years and 10 months after his father, owing to painful swelling of the right testicle 3 months in duration. Physical examination was unremarkable except for a large, tender right testicular mass that did not transmit light. Chest x-ray and IVP were normal. Chorionic gonadotropin titers were negative. He underwent radical right orchiectomy. Microscopic sections revealed teratocarcinoma with a few small areas of cytotrophoblast and syncytial trophoblastic cells. A retroperitoneal node dissection revealed 3 of 25 nodes positive for metastatic teratoma and choriocarcinoma. He underwent cobalt

therapy to the retroperitoneal and iliac nodes and is receiving monthly chemotherapy.

DISCUSSION

Since 1930 malignant testicular tumors have been reported in 5 sets of twins and in 4 sets of non-twin siblings.^{4, 6-10} In 2 sets of twins each twin had embryonal carcinoma and in 2 other sets each twin had seminoma. In the fifth set embryonal carcinoma developed in 1 twin and seminoma in the other, at an interval of only 5 weeks.

In each of the 4 sets of non-twin brothers, 1 sibling had seminoma and the other teratoma. In 1 case the brothers' grandfather had had bilateral testicular tumors.

Only 0.2 per cent of the population are identical twins.¹¹ Thus, a series of at least 1,000 cases of testicular neoplasm would be necessary to find a few patients who have a twin brother. If, out of approximately 150 such patients (that is those having identical twins) in the United States in the last 40 years, 5 of their twin brothers also had testicular neoplasm, there would be an incidence of about 3 per cent, or more than 1,000 times the expected incidence in the general population.

Although with non-twin brothers or fathers and sons, the number of cases reported is not yet sufficient to warrant any conclusion, it appears that prenatal factors may influence the development of testicular neoplasm.

SUMMARY

We have reported testicular neoplasms occurring about 2 years apart in a father and son. Analysis of previous familial case reports suggests a prenatal influence.

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⁹ Raven, R. W.: Tumors of the testis in two brothers. *Lancet*, **2**: 870, 1934.

¹⁰ Lownes, J. B. and Leberman, P.: Tumors of the testis in brothers. *Urol. & Cutan. Rev.*, **43**: 205, 1939.

¹¹ MacMahon, B. and Levy, M. A.: Prenatal origin of childhood leukemia. Evidence from twins. *New Engl. J. Med.*, **270**: 1082, 1964.

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³ Ferber, B.: *Cancer in New York State, exclusive of New York City, 1941-1960*. Albany, New York: Bureau of Cancer Control, New York State Department of Health, 1962.

⁴ Stewart, J. R. and Bagshaw, M. A.: Malignant testicular tumors appearing simultaneously in identical twins: a case report. *Cancer*, **18**: 895, 1965.

⁵ Harvald, B. and Hauge, M.: Heredity of cancer elucidated by a study of unselected twins. *J.A.M.A.*, **186**: 749, 1963.