KAPOSI'S SARCOMA IN PREGNANCY

TWO CASE REPORTS

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'IDIOPATHIC' multiple pigmented sarcoma of the skin was first described by Kaposi in 1872. It is a malignant tumour made up of spindle cells, endothelial cells, and histiocytes in varying proportions. It is thought that these derive from a primitive mesenchymal cell (Murray and Lothe, 1962; Spencer, 1966). The condition is rare in most countries of the world, but is prevalent among adult males in equatorial Africa, the sex ratio being 12 males to 1 female (Slavin, Cameron, and Singh, 1969). Only 4 per cent of cases occur in children, with a male : female ratio of 3 : 1. This observation has led to speculation that the sex hormones exert a protective effect in the adult female, and previous authors have advocated treatment of the disease with oestrogens (Hurlbut and Lincoln, 1949). The present report concerns an African girl in whom Kaposi's sarcoma developed during the second month of pregnancy at a time when she might be expected to have high levels of circulating oestrogen and progesterone. A further patient is described who was pregnant twice during the time that she suffered from Kaposi's sarcoma.

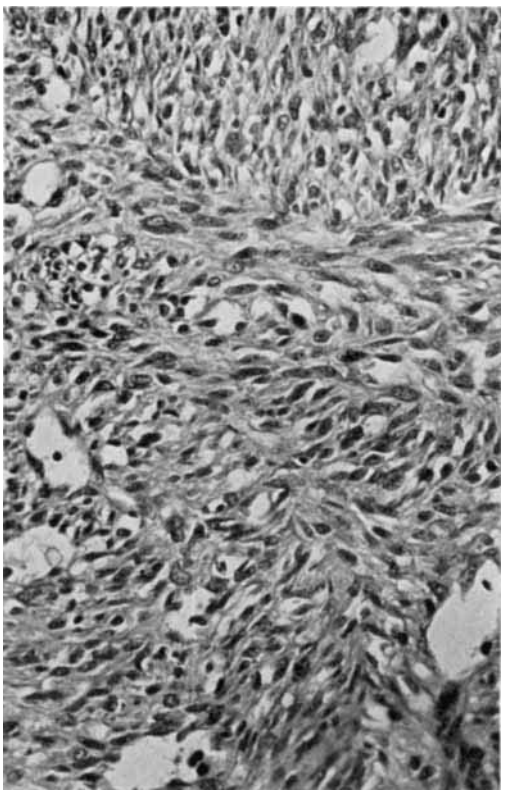

FIG. 1.—The histological appearances of the pharyngeal tumour, showing sheaves of spindle cells, capillary channels lined by endothelium, and unlined vascular slits. (×320.)

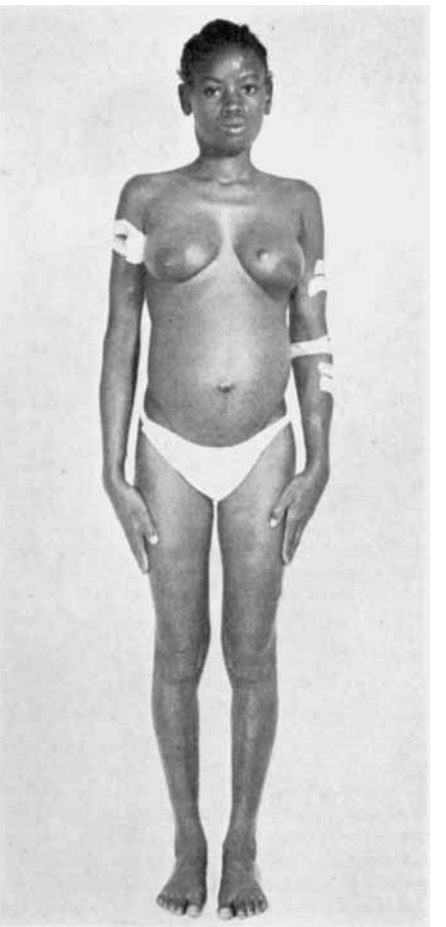

FIG. 2.—*Case* 1 on admission. The patient was then 35 weeks pregnant and had a right cervical lymphadenopathy and a tumour nodule on the left breast.

CASE REPORTS

Case 1.—This 15-year-old Mugishu girl attended the Ear, Nose, and Throat Clinic at Mulago Hospital on 3 March, 1970, complaining of hoarseness of the voice and dysphagia of 1 month's duration. Laryngoscopy revealed a pedunculated tumour in the hypopharynx and histological examination of a biopsy from this showed it

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to be a Kaposi sarcoma (*Fig.* 1). She was then referred to the Uganda Cancer Institute on 16 March.

The patient stated that she had noticed nodules in her skin 6 months previously. They had commenced in the arms and subsequently had developed on her legs, trunk, and head with a progressive increase in size. She had also noticed pitting oedema of her legs for 6 months. Her menarche had commenced in January, 1969, but in July, 1969, she had had amenorrhoea followed by the symptoms and signs of an intra-uterine pregnancy. The patient had had no significant previous illnesses. Both her parents were alive and well. The patient was the third child with 6 siblings. The second sibling had died in infancy of an unknown cause. The remainder of her family and the father of her child (a Mugishu schoolboy) had not suffered any similar disease.

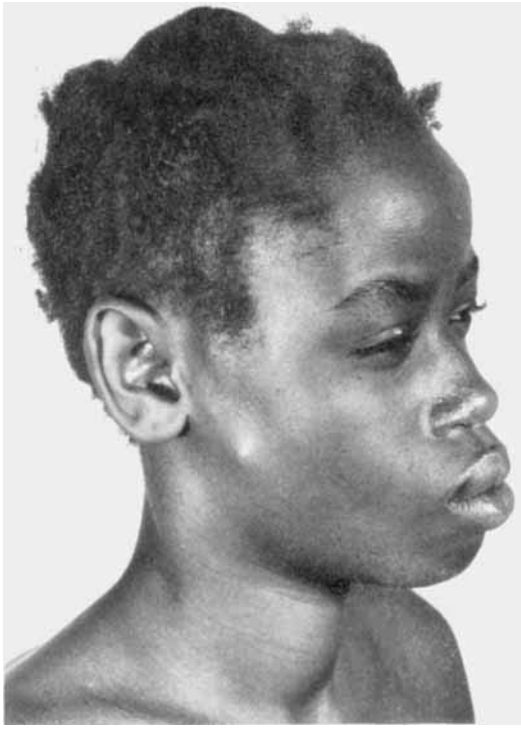

FIG. 3.—*Case* 1. Photograph taken on admission to show tumour nodules on the right eyelid and anterior to the ear. The cervical lymphadenopathy is also seen.

On examination the patient was a well-developed, well-nourished girl in the third trimester of pregnancy (*Fig.* 2). She had generalized lymphadenopathy, most marked in the right cervical nodes (*Fig.* 3), and had nodules on all four limbs, head, and left breast. These were attached to the skin but not to deeper structures and varied in diameter from 1 to 3 cm. None was ulcerated and no other physical abnormalities were noted.

The haemoglobin was 10·6 g per cent and the white blood-cells were 5800 per c.mm., with 58 per cent neutrophils, 31 per cent lymphocytes, and 9 per cent eosinophils. Serum alkaline phosphatase was 9 K.A. units per 100 ml.; bilirubin was less than 0·5 mg. per 100 ml.; SGOT, 4 units per 100 ml.; and the blood-urea, 17 mg. per 100 ml. The haemoglobin electrophoresis pattern was A.A., skeletal and chest radiographs were negative, and sigmoidoscopy revealed no abnormality.

A decision was made to treat the patient with chemotherapy after the birth of her child, and she was discharged home to await delivery. On 16 April the patient delivered a normal baby girl weighing 2·6 kg. The placenta was macroscopically and histologically normal. The patient was readmitted to the Uganda Cancer Institute. Re-examination showed many new nodules and those previously present had increased in size.

Commencing on 23 April, intravenous actinomycin D, 15 mcg. per kg., was given daily for 5 days. Substantial tumour regression was noted within a week, following completion of therapy (*Fig.* 4). A subsequent course was given, beginning on 20 May. During each of these periods the baby was bottle-fed, and breast milk was expressed and discarded. Following the second course the patient developed leucopenia, mouth ulceration, and fever. Her father visited her during this period and insisted on taking her home against medical advice. One of us (A. L.) visited her home on 17 June, and was told that all her nodules had gone and that her father did not wish her to return to hospital. Subsequent attempts to contact the patient have failed.

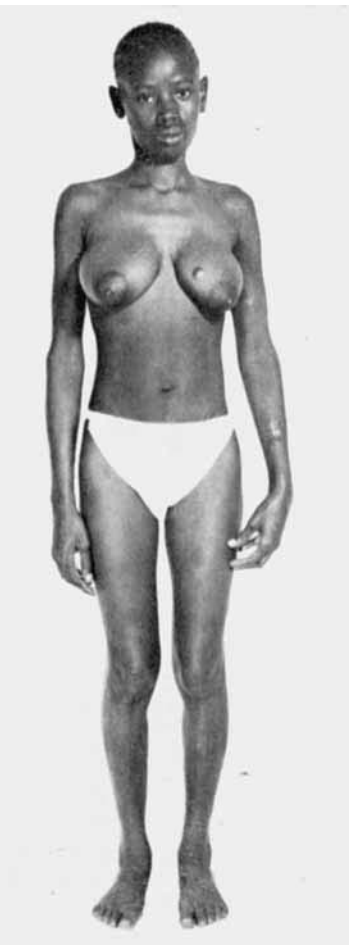

FIG. 4.—*Case* 1. The patient after one course of chemotherapy. There has been diminution of the right cervical swelling and loss of hair.

Case 2.—This patient, a 23-year-old Muganda female, was admitted to Mulago Hospital on 18 Feb., 1965, from the antenatal clinic, with progressive anaemia of pregnancy. She complained of pain and swelling of the legs for 18 months, amenorrhoea for 9 months, and

abdominal pain for 1 week. She had had a full-term normal delivery of a baby boy about a year previously, but had had no significant previous illness. On examination the patient was found to be in the third trimester of pregnancy and appeared clinically anaemic. Multiple nodules were seen on both legs which were oedematous. Her haemoglobin was 7·7 g. per cent and therapy was started with ferrous sulphate tablets and vitamin C. Uterine contractions commenced on 13 March, and, although the foetal heart was heard at the onset of labour, she was delivered 4 hours later of a stillborn male child. The baby had no external abnormalities.

By 25 March new skin plaques had developed on her left arm and hand. Histological examination of biopsies from her left arm and leg showed haemangiomatous tissue composed of thin-walled vessels associated with a proliferation of spindle cells. The appearances were compatible with Kaposi's sarcoma. It was thought that the decreased oestrogen levels might have permitted the new lesions to develop, and she was given stilboestrol tablets, 10 mg. three times daily, for 2 months with no improvement. On 29 June she was given 20 mg. nitrogen mustard into the left common iliac artery, and a further 20 mg. were given intravenously on 27 July. She was discharged home on 8 August and did not return to Mulago.

The patient's home was visited by a social worker (A. L.) in 1970. He was told that the patient's condition had deteriorated after she had left hospital. She had suffered generalized oedema, some of the nodules had ulcerated, and she had died late in 1966. The first-born male child is alive and well.

DISCUSSION

This communication is the first report of Kaposi's sarcoma in pregnancy. The low incidence of this disease in females has been attributed by some to the influence of female sex hormones (Tedeschi, 1958). However, in the first patient reported here there was development and progressive growth of the tumour with elevated levels of oestrogen and progesterone. In the second patient the tumour did not respond to oral oestrogen therapy. This is in accordance with the experience of others both *in vivo* (Keen, 1962) and *in vitro* (Taylor, 1969). Thus, it appears unlikely that female sex hormones favourably modify the natural history of Kaposi's sarcoma.

The morphology of Kaposi's sarcoma may vary considerably and several different forms of the disease have been described (Reynolds, Winkelmann, and Soule, 1965; Kylwazi, 1969). Clinicians in Uganda recognize three basic categories. Children present with generalized lymphadenopathy, occasionally accompanied by subcutaneous nodules, and in the absence of therapy have a rapidly fatal course. Adults complain of oedema of the limbs and small skin nodules which respond well to chemotherapy (Kylwazi, 1969). Less commonly, adult patients develop large fungating lesions which rapidly increase in size and may be resistant to chemotherapy (Keen, 1962; Kylwazi, 1969). There is frequent overlap of these clinical manifestations as in the adolescent patient described here who had cutaneous tumours and adenopathy. Women may suffer unusually aggressive forms of the disease (Reynolds and others, 1965).

The variable clinical and histological features of Kaposi's sarcoma seen in different age groups have led to speculation that the host response may modify the disease process. Recent studies have shown an impairment of cellular immunity in patients with large fungating tumours (Masters, Taylor, Kylwazi, and Ziegler, 1970), but whether this is the cause or effect of the aggressive lesions is not established. Although the aetiology of Kaposi's sarcoma remains unknown the increased incidence in males in equatorial Africa may result from genetic or environmental factors (Oettle, 1962). In the light of the present report sex hormones are unlikely to influence the pathogenesis of the disease. Host immunity, however, may be an important modifying factor in both the aetiology and the natural history of Kaposi's sarcoma.

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