ABSTRACT

A 21-year-old, gravida 1, para 0, female presented at approximately 25 weeks gestation with a large Ewing's sarcoma involving her iliac wing. She was treated with multiagent chemotherapy prior tc a successful Cesarean delivery of a normal infant at approximately 34 weeks gestation. Two years later both the mother and child are doing well. The literature of sarcoma occurring during pregnancy and the literature of multiagent chemotherapy in pregnant patients is reviewed. Chemotherapy should be instituted early in the course of many malignant sarcomas, despite pregnancy, to prevent the occurrence of metastases.

It is always difficult for the obstetrician and the medical oncologist to determine the appropriate therapeutic course in a pregnant patient who has an intercurrent malignancy. Reports of successful treatment of hematologic malignancies are becoming more frequent - certainly these are among the most common tumors encountered during the reproductive years. There is, however, very little experience dealing with the treatment of solid tumors during pregnancy and most reports are from the era prior to the development of effective multiagent chemotherapy. It will become increasingly likely though, that solid tumors diagnosed in patients who are pregnant will be curable by primary or adjuvant chemotherapy. We report herein our results in treating a pregnant 21-year-old woman with a Ewing's sarcoma of the pelvis, a review of the literature dealing with sarcoma during pregnancy, and a suggested approach to the treatment of solid tumors occurring during pregnancy.

CASE REPORT

M.N. is a 21-year-old Puerto Rican female, gravida 1, para 0, LMP 15 May, 1979, who presented to the Naval Regional Medical Center, San Diego, California on 15 November 1979, at approximately 25 weeks gestation with complaints of severe pain in her left hip dating prior to conception. She had been evaluated in June, 1979, at a local dispensary where a pelvic x-ray was interpreted as normal and she was treated with simple analgesics and local heat. Upon presentation in San Diego she was unable to walk due to severe pain in her left hip. Evaluation revealed an intrauterine pregnancy with the fundus at the umbilicus. Fetal heart tones were auscultated with a fetoscope. The uterus was pushed to the right by a

tender hard mass arising in the iliac wing and growing anteriorly and upwards to almost the left inferior costal margin. Neurologic examination revealed anesthesia over the anterior left thigh and decreased strength in the left quadraceps femoris. Laboratory studies revealed a mild normochromic-normocytic anemia, a WBC of 15,400 with a normal differential, and a LDH of 282 u/l. Pelvic x-ray revealed a large osteolytic mass destroying the left iliac wing. Sonography showed a single fetus in the transverse position with an estimated age of 25.5 weeks and a tumor mass that measured 13 cm. in diameter (Figure 1). Chest x-ray and whole lung tomograms were normal. A Technitium-99 bone scan showed changes consistant with partial obstruction of the left kidney but no uptake of the radiopharmaceutical within the tumor. On 20 November an open biopsy of the tumor was performed. The histologic and electron microscopic diagnosis was Ewing's sarcoma (Figure 2).

After counseling, the patient chose to undergo intensive chemotherapy and to continue the pregnancy. Treatment with actinomycin D, cytoxan, bleomycin, vincristine, and adriamycin was begun according to the T-6 protocol described by Rosen et al.[1]. Methotrexate was not given at this time. The drugs were well tolerated. Following the initial chemotherapy the tumor mass shrank both clinically and by ultrasonographic measurement (9 cm in diameter on 21 December). The fetus seemed to progress normally. In early January 1980, the tumor mass rather suddenly began to increase in size. Although the L/S ratio was only 0.6 with an acetone precipitable lecithin of 37% and a phosphatidyl glycerol of zero, it was felt advisable to terminate the pregnancy in order to treat the primary tumor definitively.

Betamethasone was given and on 11 January a 1,750 gram female was delivered by Cesarean section. Apgar scores were 7 and 9; the estimated gestational age was 34 weeks.

Prior to delivery the patient's hemoglobin was 11 gm/dl, her WBC 12,300/mm^3 and her platelet count 300,000/mm^3. The infant's hemoglobin was 14.8 gm/dl, hematocrit 45.3%, MCV 111, reticulocyte count 8%, WBC 7,200, and platelet count 270,000/mm^3. The infant required IV calcium on the first day and was intubated and treated with oxygen and continuous positive airway pressure (CPAP) for 48 hours for mild respiratory distress syndrome. During the same time 37cc of packed red cells were transfused. From the third day no major problems were encountered and the baby was discharged on 6 February at a weight of 2,000 grams.

Following delivery a CAT scan of the abdomen was obtained (Figure 3). The mother underwent another cycle of chemotherapy, en bloc resection of the iliac wing, radiotherapy to the tumor bed and remaining left ilium, and ten months of further multidrug chemotherapy. The patient has no evidence of disease ten months after the discontinuation of treatment. She has a mild limp with persistent numbness over her left thigh and minimal use of the left quadraceps. The child is progressing normally.

DISCUSSION

There are several reports of sarcoma occurring during pregnancy. In 1937 Smith[2] included nine cases among 54 pregnant patients with cancer. Five of these were pregnant when the tumor was diagnosed and four became pregnant after definitive therapy of their tumor. Treatment consisted of surgery and/or radiotherapy. Pregnancy did not seem to affect the course