

Pregnancy associated with melanoma and fetal anomalies: a case report and review of literature

J. Jeremić^{1,3}, K. Jeremić^{2,3}, A. Stefanović^{2,3}, M. Gojnić^{2,3}, J. Stojnić^{2,3}, Ž. Nikolić⁴

¹ Clinic for Burns, Plastic and Reconstructive Surgery, Clinical Center Serbia, Belgrade

² Clinic for Obstetrics and Gynecology, Clinical Center of Serbia, Belgrade; ³ School of Medicine, Belgrade University, Belgrade

⁴ Clinic for Maxillofacial Surgery, Faculty of Stomatology, Belgrade (Serbia)

Summary

The estimated incidence of melanoma complicating pregnancy has ranged from 0.1 to 2.8 per 1,000 pregnancies. Here the Authors present a case of a 40-year-old pregnant woman, who was admitted to the Clinic of Obstetrics and Gynaecology in 26 weeks of gestation, with diagnosis of melanoma and suspected with fetal anomaly, as possible bowel obstruction, and polyhydramnios. The melanoma was asported with a wide local excision under local anesthesia. Histological evaluation revealed melanoma Stage Ib (Clark IV, Breslow thickness 1.2 mm, pT2a). Lymph node sonography of neck, axilla, inguinal, abdomen, and pelvis as well as chest radiography did not demonstrate any evidence of metastatic disease. After vaginal delivery at 37 weeks of gestation, the female preterm hypotrophic newborn was transferred to the Institute for Neonatology and underwent resection of duodenojejunal atresia with tapering duodenoplasty and duodenojejunal termino-terminal anastomoses due to intestinal obstruction. No evidence of the melanoma was found in the placenta. Two years later the child was healthy and the mother was disease-free.

Key words: Melanoma; Pregnancy; Congenital anomalies.

Introduction

The estimated incidence of cancer diagnosed in pregnant women is one in 1,000 pregnancies and is predicted to rise as childbearing is shifted towards later reproductive ages [1]. The most common cancers associated with pregnancy are cervical, breast cancer, melanoma, lymphomas, and leukemia. Melanoma represents a life threatening situation not only for the mother, but also for the fetus due to potential aggressive therapy and fetal metastasis. The estimated incidence of melanoma complicating pregnancy has ranged from 0.1 to 2.8 per 1,000 pregnancies [2]. Although melanoma occurring during pregnancy challenges the physician, only a few studies regarding this pathology have been published. Little is known regarding the exact mechanisms whereby maternal cancer may pose risk to a developing fetus.

Case Report

A 40-year-old woman, with three previous deliveries was admitted to the Clinic for Obstetrics and Gynaecology in 26 weeks of gestation, for pregnancy complications including threatened preterm delivery and gestational diabetes mellitus. Additional finding was a suspicious cutaneous lesion on the patients back, first noticed by dermatologist few days before hospitalization. After the diagnosis of melanoma, a wide local excision. Pathological evaluation revealed melanoma Stage Ib (Clark IV, Breslow thickness 1.2 mm, pT2a). Before the operation the physical examination of lymph nodes was carried out to check whether the melanoma had spread to them. Sonography of neck, axilla, in-

guinal, abdomen and pelvic lymph nodes, and chest radiography were negative for metastases. Sentinel node biopsy was not performed. The predictive values of the serum protein S100 as a tumor marker and lactate dehydrogenase in the post surgical follow up staging of patient were measured and evaluated.

Gestational diabetes was ruled out and with no further symptoms of preterm delivery, the patient was discharged from the hospital two weeks later. Genetic examination with amniocentesis performed at 17.2 weeks of gestation, for age risk factor diagnosed female fetus with normal chromosomes (46XX).

A suspicion of abnormality that caused bowel obstruction and polyhydramnios was revealed by ultrasound; moreover a dilated stomach (40 x 20 cm) and small intestine with stenosis or atresia, and intrauterine growth restriction (IUGR) were evidenced.

After spontaneous vaginal delivery at 37 weeks of gestation, female newborn child weighed 1,950 grams, length 48 cm, head circumference 33 cm, and Apgar score 3. Immediately after birth, the newborn was transferred to the Institute for Neonatology for surgery that consisted in resection of duodenojejunal atresia with tapering duodenoplasty and duodenojejunal termino-terminal anastomoses. The pathology report of specimen revealed cystic duplication of intraluminal duodenojejunal transition zone. No evidence of the melanoma was found in the placenta. The mother and child are well and alive two years later.

Discussion

Melanoma is one of the most commonly diagnosed cancer during the childbearing age and pregnancy. Melanoma is now a major cause of death due to cancer in women of childbearing age, and the incidence rates are dramatically increasing.

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There have been concerns in the past that hormonal and immunological changes occurring during pregnancy could be important in the development of melanoma. The most recent controlled studies suggest that pregnancy has no effect on survival in woman diagnosed with melanoma during pregnancy.

Based on a limited data, pregnancies associated with the diagnosis of localized melanoma do not appear to worsen prognosis [3].

Since 1866 when the first case report appeared, only 87 patient cases of placental or fetal metastasis have been reported. Although melanoma is the most common malignancy to metastasize to placenta, accounting 27 of 87 (31%) patient cases, metastasis of melanoma to the fetus appears to be a rare event [1].

Although pregnant women with melanoma should be treated similarly to non-pregnant ones, pregnancy status of patient limits the treatment options [4, 5]. Surgery is a definitive treatment for early stage of disease (Stage I et II melanoma), and this does not differ between pregnant and non-pregnant women, whereas the treatment of pregnant women with Stage III and IV melanoma is less clear and more difficult. Generally, as a treatment option, surgery poses the least risk to the fetus and may be considered the safest cancer treatment option for some cancers, especially after the first trimester. Careful monitoring of the mother and baby is important in order to keep the risk to a minimum.

Most authors agree that anesthesia (general, local, regional) does not affect the development of embryo and fetus. The maternal death rate due to anesthesia and surgery is negligible during the first trimester and does not appear to increase the incidence of major birth defects. With local anesthesia local resection can be performed regardless of the trimester without increased risk [6].

Only a few data exist regarding birth outcome in women with breast cancer, relating melanoma and Hodgkin's disease. A recent study of birth outcome in women who were diagnosed with Hodgkin's disease before pregnancy indicated a slightly increased risk of congenital anomalies among the newborns. Little is known about exact mechanisms by which maternal cancer may pose risk to a developing fetus. In theory, if the mother has malignant disease there are several factors that might influence the fetus. It is believed that the cancer could affect the metabolism and distribution of hormones and vitamins, some of which are responsible for certain congenital anomalies [7]. Cancer patients also have an increased risk of high body temperature, and it has been reported that maternal fever in early pregnancy was associated with stillbirth and congenital abnormalities [8, 9]. Maternal under-nutrition during pregnancy due to cancer could result in reduced transfer of nutrients to the fetus and may cause intrauterine growth retardation [10]. Impaired fetal growth is further associated with neonatal morbidity and mortality, and may also be associated with diseases that could appear later in life [11, 12]. Some studies have reported associations of psychological stress in pregnancy caused by severe life

events, such as knowledge of diagnosis of cancer, with preterm delivery and congenital abnormalities [13-15].

Since there are very few reports considering the influence of melanoma on the development of fetus during the pregnancy and each case in the future will be of great importance.

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Address reprint requests to:
K. JEREMIĆ, M.D., PhD
Clinic for Gynecology and Obstetrics
Clinical Center of Serbia,
Visegradska 26, Belgrade (Serbia)
e-mail: jeremick@hotmail.com