

Breast carcinoma during pregnancy

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ABSTRACT

تمت دراسة الملفات الطبية لسيدات حمل مصابات بسرطان الثدي لتحديد خصائص الورم، تفاصيل الحمل، نوع العلاج المعطى، ونتائج المرض. كان لدينا خمسة سيدات حمل من أصل 220 سيدة مصابات بسرطان الثدي، أي بمعدل 2.27%، وذلك خلال السنوات الخمس الماضية، متوسط العمر لهؤلاء المريضات عند مراجعتهم 33 عاماً. ثلاثة من خمسة مريضات تم التشخيص لديهن في الأسبوع السادس من الحمل، وثلاثة من خمسة مريضات كانت درجة الورم لديهن A111، وأربعة مريضات كانت درجة الورم لديهن 111، ولديهن ستة عقد إبطية مصابة أو أكثر. بالرغم من أن سرطان الثدي في مريضاتنا تم اكتشافه بشكل سريع خلال الأسابيع الأولى من الحمل، إلا أنه في هذا الجزء من الكرة الأرضية المريضات الحمل المصابات بسرطان الثدي غالباً ما يراجعن المستشفى في مراحل متقدمة جداً من المرض، وذلك في نفس المرحلة التي تراجع بها النساء الغير حمل المصابات بسرطان الثدي، وكأن هذا المرض يتم تجاهله بشكل كامل. لذا فإننا ننصح أطباء النساء والولادة بطلب استشارة جراحية فورية وسريعة إذا تم اكتشاف آفة مثيرة للجدل أثناء الفحص الدوري للثدي في فترة الحمل.

The medical records of patients with pregnancy associated breast carcinoma were critically reviewed to identify the tumor characteristics, maternal details, type of treatment delivered, and disease outcome. Over the last 5 years, there were 5 patients out of 220 giving a percentage prevalence of 2.27%. The median age at presentation was 33 years. Three patients were diagnosed by the sixth week of gestational age. Three out of 5 presented with stage IIIA. Four patients has ≥ 6 positive axillary lymph nodes and grade III disease. So in spite of the discovery of the tumor in the early weeks of pregnancy, our patients presented with advanced disease, which is consistent with the presentation of breast carcinoma in non-pregnant women in this part of the world. So it could be an ignored disease, which became evident with the pregnancy. We highly encourage the obstetricians to perform thorough breast examination during the prenatal period with prompt referral of any suspicious cases.

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Pregnancy associated breast carcinoma (PABC) is defined as a carcinoma diagnosed simultaneously or within one year after pregnancy.¹ It is believed that the incidence of PABC will increase as more women delay child-bearing² due perhaps to personal, educational, or professional reasons, as the prevalence of breast carcinoma increases with increasing age. Currently the incidence of PABC accounts for approximately 2-3% of all new cases of breast carcinoma.³ Still, it is considered as one of the most commonly diagnosed cancers during pregnancy. Traditionally, it has been thought that stage for stage PABC has either an equivalent or worse prognosis compared to non-pregnancy associated breast carcinoma. Others have concluded that patients with PABC have survival not significantly different from those patients with non-pregnancy associated breast cancer. In this study, we are analyzing the data of patients with PABC who presented to our centre, by looking into demographics, clinical presentation, modalities of treatment offered, and both the maternal and fetal outcome.

Case Report. This study comprised a consecutive series of 5 patients with PABC who received treatment at our institute. All patients had full clinical workup (history and examination), radiological, and laboratory investigations necessary to diagnose and stage the disease. Patients underwent surgical treatment extending from modified radical mastectomy (MRM) to wide local excision. Patients received adjuvant chemotherapy post-operatively, however, radiation was delayed to the post natal period. The details of the patients (maternal and fetal characteristics, clinical presentation, surgery offered, and pathological findings) are presented in Tables 1 & 2.

Discussion. Carcinoma of the breast remains the most common cancer in women both in the Western and Eastern populations. The occurrence of cancer during pregnancy is an uncommon event and the incidence of specific malignancies in pregnant women parallels that in non-gravid women of comparable age.⁴ In our patient population, the association of breast carcinoma with pregnancy was 2.27%, which was comparable with the previous reported data.³ Three of our patients presented clinically with Stage III-A tumor (Table 2). Previous reports have shown that the diagnosis of breast carcinoma in pregnancy is usually delayed 5-7 months due to physiological changes. The physiological changes of increase in weight (from 200-400 grams), density, size, and vascularity (180% increase in blood flow) make detection of breast lesions more difficult during pregnancy. It is important that a thorough baseline examination should be performed by the Obstetrician at the initial visit before the breasts become engorged.⁵ The delay of diagnosis often seen in PABC may be due to patient's or physician's oversight or reluctance to perform a biopsy during pregnancy. Although 3 of our patients were diagnosed at 6 weeks of gestation, most

of the patients in the series presented clinically with advanced disease. In addition, 4 of them had 6 or more positive axillary lymph nodes (Table 2). This is similar to the presentation of breast carcinoma in non-pregnant women in this part of the world, where they tend to present at an earlier age with advanced disease.⁶

In 4 of our patients, the tumor was grade III, which was comparable to other published results of PABC.⁷ The majority of breast tumors in pregnant women are high grade, and lymphovascular invasion is common⁷ (Figure 1). In 3 patients (60%) tumors were hormone-independent. It was demonstrated in many previous reports that most breast tumors during pregnancy were hormone-independent.⁷ Over expression of Her2/neu was found to be positive in 4 (80%) of our patients. While Elledge et al⁸ found 58% of their pregnant patients to be positive for Her2/neu, others did not find any difference in the Her2/neu expression rate. One of our patients was diagnosed at 8 weeks of pregnancy with aggressive tumor, which ended with termination of pregnancy. Some reports from the mid 1980's, did not show any advantage in survival rate with therapeutic abortion.⁹ Subsequent series demonstrated that therapeutic

Table 1 - Maternal and fetal characteristics for patients treated for pregnancy associated breast carcinoma (n=5).

Case number	Maternal age at diagnosis (years)	Gestational age at diagnosis	Gestational age at time of chemo	Gestational age at the time of definitive surgery	Gestational age at delivery	Last time seen	Disease status
1	42	6 weeks	12 weeks	28 weeks	33 weeks	13 March 2007	No active disease
2	38	9 months postpartum	10 months postpartum	---	---	13 March 2007	No active disease
3	38	6 weeks by U/S	12 week +	7 weeks	Full term	1 April 2006	Dead
4	27	2 weeks postpartum	3 weeks postpartum	5 months postpartum	---	13 March 2007	On treatment
5	24	7 weeks by U/S	NA (therapeutic abortion)	NA (therapeutic abortion)	7 weeks abortion	Followed for 9 months last seen 5 March 2007	Active disease

U/S - ultrasound, NA - not applicable

Table 2 - Clinical presentation, surgery, and pathological findings in patients treated for breast carcinoma during pregnancy.

Case number	Stage at presentation	Tumor grade	ER	PR	Her2neu	Number of lymph node	Type of surgery
1	T ₃ N ₁ M ₀	III	Positive	Positive	Negative	6/20	MRM
2	T _x N ₂ M ₀	II	Negative	Negative	+3 positive	6/12	MRM
3	T ₂ N ₁ M ₀	III	Positive	Positive	+3 positive	1/13	WLE and axillary clearance
4	T ₂ N ₁ M ₀	III	Negative	Negative	+3 positive	9/19	MRM
5	T ₂ N ₂ M ₀	III	Negative	Negative	+2 positive	9/17 positive	Dinner plate mastectomy

MRM - modified radical mastectomy, WLE - wide local excision, ER - estrogen receptor, PR - progesterone receptor, T - tumor, N - lymph nodes, M - metastasis

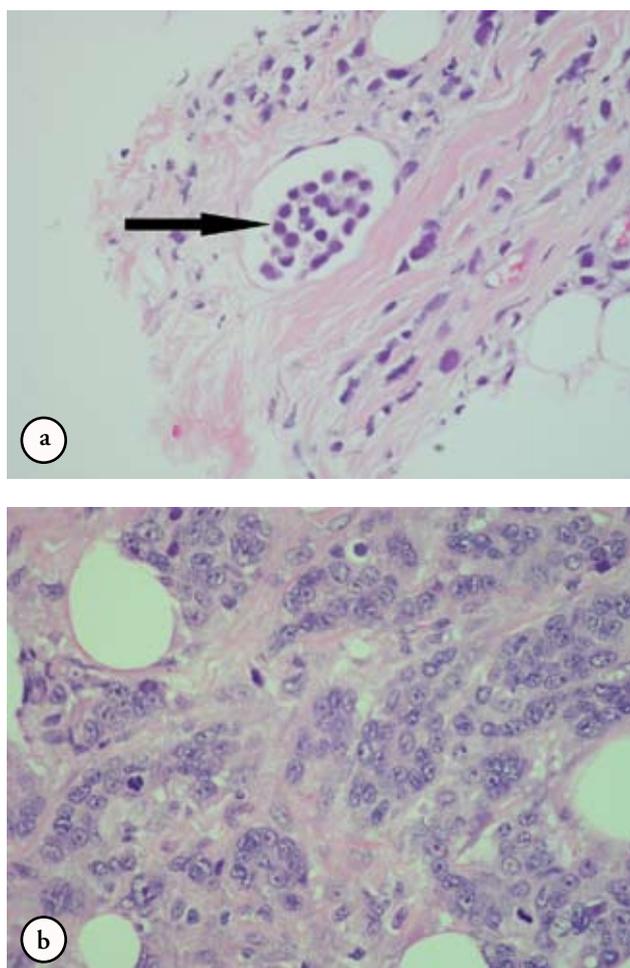


Figure 1 - The histopathology of breast carcinoma during pregnancy showing 2 common features: a) Lymphovascular invasion, b) High grade (poor differentiation).

abortion not only failed to improve survival but might be detrimental.⁴ Regarding treatment, 3 of our patients had modified radical mastectomy. The conventional surgical treatment for PABC is radical or modified radical mastectomy to avoid the risk of fetal radiation exposure. However, recent reviews have shown that breast-conserving therapy is increasing among pregnant patients.¹⁰ To avoid the risk of radiation the latter can often be delayed until after delivery. One of our patients had wide local excision with axillary clearance at 28 weeks of gestation, and the radiotherapy was delayed to the post natal period. All of our patients received chemotherapy. Two of them received Adriamycin and cyclophosphamide (AC) followed by paclitaxel and AC followed by docetaxel & cisplatin in the other patient. These 2 patients received chemotherapy at 12 weeks of gestation and both delivered normal babies, one at full term and the other at 33 weeks. Chemotherapy for treatment of breast cancer can be administered during

the second and third trimesters of pregnancy with minimal risk of maternal and fetal complications.¹¹ Treatment should start during pregnancy because any delay will affect the outcome. On the contrary, none of our patients received hormonal therapy during pregnancy. The use of tamoxifen during pregnancy has previously been discouraged owing to concerns on potential teratogenic effects and the risks of disease progression. However, a more recent report showed that no teratogenic effect of tamoxifen in humans and can be considered a therapeutic option in selected breast cancer cases.¹² Questions, which are frequently raised by the patient and family are the prognosis of the disease and the possibility and time of subsequent pregnancy. Pregnancy associated breast carcinoma was thought to be incurable or at least with very grim prognosis, a view, which persisted for many years. Multiple studies afterwards have shown that the poorer prognosis is more likely due to delay in diagnosis and that, stage for stage, the prognosis for women with gestational breast cancer is similar to that of non-pregnant women.¹³ The concern with subsequent pregnancy after breast carcinoma treatment is that of dormant micrometastasis stimulated by gestational systemic hormones. This concern was addressed by workers,¹⁴ who noted that survival was better with a longer interval between pregnancy and breast carcinoma diagnosis (up to 4 years). However, other published reports implies that subsequent pregnancy after breast carcinoma is safe when corrected for stage of tumor.¹⁵

In conclusion, since the frequency of PABC is increasing, more attention should be directed to improving the standards of treatment specially in this part of the world where patients present with advanced disease. Obstetricians should perform thorough breast examination at the first prenatal visit to avoid delay in diagnosis, and self examination of the breast should also be taught. The true answer for many questions in PABC remains to be elucidated through further prospective studies.

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Related topics

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