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Breast cancer during pregnancy and lactation

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Pregnancy associated cancer is a cancer that is diagnosed during pregnancy or within a year after.[1-3] Although its incidence is relatively rare,[1] it is the most common malignancy encountered in pregnant women. It is seen in approximately 0.03% of pregnancies and only 1-2% of overall breast cancers is diagnosed during pregnancy or lactation.[2] In recent years, gestational breast cancer seems to be occurring with increasing incidence,[3] but clinicians often tend to attribute breast symptoms and signs to the physiological breast changes of pregnancy or lactation. The matter is further complicated by breast engorgement as pregnancy advances hiding any breast solid lumps. It is not surprising therefore that the breast cancer during pregnancy or lactation has the reputation of 'bad prognosis' mainly due to late presentation and delayed diagnosis which is very common.[1]

We report 3 cases of gestational breast cancer that were encountered by the authors over a year period (1998) and discuss the diagnostic dilemma and modern management options.

The first case was a 38-year-old Saudi female who was 8 month pregnant presented with 3 month history of left breast lump and intermittent bloody nipple discharge. She started menarche at the age of 13 years and denied any past history of benign breast diseases or oral contraceptive pill. There was no family history of malignant breast disease. Clinical examination revealed an irregular hard lump (3x3 cm) in the subareolar area of the left breast with no palpable axillary or supraclavicular lymph nodes. Fine needle aspiration cytology (FNAC) showed infiltrating ductal carcinoma. She underwent left simple mastectomy and axillary clearance together with cesarian section (CS) and tubal ligation at the same time. Histology revealed grade II infiltrating ductal carcinoma with 2 of the 11 level I nodes were positive for malignancy. She later underwent adjuvant chemoradiation and remained well with no evidence of locoregional recurrence 34 months later (**Table 1**).

The second case was a 40-year-old Saudi female who has been lactating for 10 months presented with a left breast lump of one week duration. There was no history of breast pain or nipple discharge and denied any past history of benign breast disease. There was no family history of breast cancer. Clinically, there was a 2x3 cm irregular left breast mass, in the upper outer quadrant with no palpable axillary lymphadenopathy. Mammography revealed suspicious opacity in the left breast but bone scan and ultrasonography showed no bone or liver metastases. Fine needle aspiration cytology showed suspicious of malignancy. She underwent a wide excision and left axillary clearance. Histopathology showed grade II medullary carcinoma and 2 out of 20 axillary lymph nodes were malignant. She later underwent systemic chemotherapy and radiation to left breast and declared disease free 30 months later (**Table 1**).

The third case was a 32-year-old Saudi female who has been lactating for 5 months presented with a month history of a right breast lump. There was no history of nipple discharge or past history of any benign breast diseases. There was no family history of breast carcinoma. Clinically, there was an irregular right breast mass (5x3 cm) in the upper inner quadrant with palpable right axillary lymph nodes. She underwent right simple mastectomy and axillary clearance. Histology showed grade II infiltrating ductal carcinoma with 15/18 lymph nodes were positive. Postoperative adjuvant therapy was given but was lost to follow up 6 months after surgery (**Table 1**).

Contrary to the general belief, pregnancy does not appear to have an adverse effect on the disease process nor there is a solid evidence to implicate pregnancy or lactation as etiological factors. The reputation of 'bad prognosis' associated with pregnancy associated breast cancer is greatly attributed to late presentation and delayed diagnosis which is very common.[1] Therefore, it is not surprising to encounter axillary lymph node involvement in 70-80% of operable breast lesions diagnosed during pregnancy, mainly due to delayed

Table 1 - Details of presentation, operation, axillary nodal status and outcome of the 3 cases.

Case	Age (year)	Status	Presentation	Operation	Node status	Outcome
1	38	Pregnant	Breast lump, bloody nipple discharge	Mastectomy and axillary dissection	Positive (2/11)	Alive 35 months
2	40	Lactating	Breast lump	Lumpectomy and axillary dissection	Positive (2/20)	Alive 30 months
3	31	Lactating	Breast lump	Mastectomy and axillary dissection	Positive (15/18)	Lost to follow-up

diagnosis.[1] All our 3 patients had metastatic axillary lymph nodes. The status of axillary lymph nodes is considered one of the best prognostic factors in breast cancer. It is clear that case 3 has worse prognosis than case one or 2. Unfortunately, case 3 was lost to follow up and was presumed dead. Generally speaking, treatment should follow the same line and principles applied for non-pregnant females, with the modifications required by pregnancy.[4,5] Modified radical mastectomy is the best offered surgical therapy for stage I, II and selected cases of stage III.[5] This is certainly the case for breast cancers diagnosed during the first and second trimesters, as adjuvant therapies need to be withheld until after delivery. However, recent evidence suggests that breast conservation surgery in the form of lumpectomy and axillary node dissection can be offered if feasible in the third trimester and radiotherapy is delayed until after delivery. Case 2 was offered breast conservation surgery without adverse consequences. However, in pregnancy risks and benefits of breast conservation should be thoroughly discussed with patient as it has its own problems and drawbacks. Chest wall radiation for cancers detected in the second or third trimester is delayed until after delivery to avoid fetal growth retardation and still births.[3,4] The risk of abortion and fetal malformations is highest during embryogenesis in the first trimester and varies with the choice of chemotherapeutic agents. Recent evidence suggests that the risk of fetal malformations associated with administration of chemotherapeutic agents after the first trimester is not greater than the background control.[6] The decision on postoperative adjuvant chemoradiation therapy in all the cases was made easy by the fact that CS was performed at the time of mastectomy in case one who gave birth to a healthy baby and that cases 2 and 3 were postpartum and were only lactating. Termination of pregnancy is considered in females presenting early in pregnancy with advanced or metastatic cancer necessitating chemotherapy and radiation. However, there is no conclusive evidence that termination improves the prognosis or alters the natural history of the disease process.[6] Nevertheless, termination does permit standard aggressive therapy in advanced disease.

If all the therapeutic options are explored with caution, the prognosis and survival for women with pregnancy associated breast cancer are similar to that of women of the same age and same stage of the disease treated similarly.[2]

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