BREAST CANCER AND PREGNANCY

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Case

- 37 yo G7P6, 32 wks gestation seen Jan 20, 2003
- R breast lump noticed 2 months prior
- 2 cm hard mass R breast, 1 palp ax node
- U/S = multilobulated sinister mass

Case

- FNA = cytologic features suspicious for cancer
- Feb 19, 2003 OR : pre anaesthetic fetal monitoring, GA Right partial mastectomy, frozen section and axillary node dissection

Case

- 2.2 cm invasive poorly differentiated ductal carcinoma grade 3
- Closest margin 9 mm from tumour
- 3/8 lymph nodes pos, 2 nodes totally replaced with tumour, one extranodal spread
- ER pos
- No HER-2-NEU overexpression

Case

- Mar 20th 2003 delivered seventh child
- Received chemotherapy followed by radiotherapy
- Last follow up June 2004 – no evidence of recurrence

Pregnancy Associated Breast Cancer

- Defined as cancer diagnosed during pregnancy, up to one year after delivery or at any time while the pt is lactating
- Most common malignancy in pregnancy
- Occurs in 1 in 3,000 pregnancies

Age specific prevalence of malignancies in pregnancy

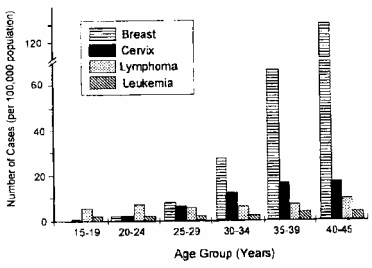

Fig 1. Age-specific prevalence of malignancies in women of childbearing age, 1984 to 1988. Adapted.[3]

Anatomic & Physiologic Changes

- Increase in lobuloalvoelar growth
- Ductal and lobular proliferation
- Increase in mammary blood flow – 180% at term

Biologic Features

- < 25% of breast tumours are estrogen receptor positive
  - ? saturated
  - ? downregulated
  - immunohistochemical assay most accurate

Diagnosis

- Should mammograms be used in pregnancy?

Radiation Concerns

- Greatest effect during period of rapid cell proliferation (1st wk after conception to wk 25)
- Recommended dose is less than 5 to 10 rads
- CNS develops wks 8 to 25

Radiation Concerns

- Radiation may increase incidence of childhood hematologic ca by 0.06%/rad delivered to fetus
- Background incidence of 0.2-0.3%

American College of Radiology

- " No single diagnostic procedure results in a radiation dose that threatens the well being of the developing embryo and fetus"

National Council on Radiation Protection

- "Fetal risk is considered to be negligible at 5 rads or less when compared with the other risks of pregnancy, and the risk of malformations is significantly increased above controls only at doses above 15 rad"

American College of Obstetrics and Gynecology

- "Exposure to less than 5 rad has not been associated with an increase in fetal anomalies or pregnancy loss"

Approximate fetal radiation doses from common diagnostic studies

- Complete spine series 0.37 rad
- CXR <0.001 rad
- Acute abdominal series 0.245 rad
- Mammogram 0.01 rad
- Background dose over 9 mo 0.1 rad

Diagnosis

- 70 – 80% breast masses in pregnancy are benign
- FNA same accuracy as in non pregnant pt

Treatment

- Pregnant women should be treated according to the guidelines for non pregnant pts with some modification to protect the fetus
- Radiation therapy during pregnancy should be avoided

Treatment

- The role of sentinel node biopsy has not been evaluated in PABC
- Chemotherapy is not generally given during the first trimester

Prognosis

- Women with PABC have the same survival stage for stage as nonpregnant women
- 2.5 times more likely to present with mets and significantly lower chance of presenting with Stage I disease

Pregnancy after Breast Cancer

- Effect of chemotherapy on ovarian function
- Emotional impact
- Impact of pregnancy on survival

Pregnancy after Breast Cancer

- Subsequent pregnancy does not affect survival after breast cancer
- Advised to wait at least 2 years between end of treatment and pregnancy

References

- Kelcher et al, Multidisciplinary Management of Breast Cancer Concurrent with Pregnancy, J Am Coll Surg, 2001;194:54-64
- Melnick et al, Management of General Surgical Problems in the Pregnant Patient, Am J Surg, 2004;187:170-180