



Gigantomastia: A Rare Complication In Pregnancy

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Abstract

Gigantomastia is a very rare condition that complicates about one of every 28,000-100,000 pregnancies⁽¹⁾. Only 100 cases have been reported in the literature. Gigantomastia occurs at puberty (virginal hyperplasia) or during pregnancy (gravidic gigantomastia)⁽²⁾. It is characterized by massive enlargement of breasts, resulting in per breast weights of 4-6 kilograms. The diagnosis of gigantomastia is based on clinical findings. Pathologic and radiologic studies are not required if no associated disorder is present. Treatment is based on bromocriptine administration, but surgical intervention (reduction mammoplasty or simple mastectomy with posterior reconstruction) is required if the disorder progresses⁽¹⁾.

Key words: Gravidic gigantomastia, Massive hypertrophy of breast, gestational gigantomastia, virginal hyperplasia, Gestational macromastia,

Case report

Patient aged 33 years was admitted having 4 months amenorrhoea with pain (mastalgia) & swelling in both breasts since one month. She has taken treatment from nearby hospital without any relief.

Obstetric history: G4 P2 L2 A2; Last child birth was 9 years male child

LMP 14/12/14, EDD 21/09/15, Uterine height was 18 weeks.

USG on 24/04/15 revealed single live in cephalic position, average sonographic gestational age was

17 weeks, liquor normal, No obvious developmental anomaly, Placenta was located in the fundus and anterior wall of uterus and maturity was grade 0.

No history of Diabetes mellitus, tuberculosis or Hypertension

Personal history – Nothing significant

Family history- Nothing significant

No fever, Pulse 76/minute, regular, BP 130/80 mm of Hg.

Laboratory findings

Haemoglobin 9.3 gm/100 ml, Leucocytes $5.700 \times 10^3/\text{mm}^3$; Differential white cell count- P 73% L 22% M-03% E-02%; Red cell count $2.8 \times 10^6/\text{mm}^3$, Platelet $161000/\text{mm}^3$, Blood urea 24mg/dl, Serum creatinine 0.93mg/dl, Random blood sugar 73mg Liver function test - Total bilirubin 1.52mg/dl: conj/100ml, Conjugated 0.93mg/dl, unconjugated 0.59mg/dl, SGOT 31u/l, SGPT 20u/l.

Total proteins 6.3 Alb 34 gm/dl, Globulin 2.87 gm/dl, AG ratio 1:1.19

Sickling for RBC was negative

Urinalysis and hormone studies were normal.



Fig 1 Massive enlargement of both breasts at 20 weeks gestation



Fig 2 Gravidic Gigantomastia in early second trimester

Discussion

Hypertrophy of the breast (macromastia and gigantomastia) is a rare medical condition of the breast connective tissues. The indication is a breast weight that exceeds approximately 3% of the total body weight. There are varying definitions of what is considered to be excessive breast tissue, that is the expected breast tissue plus extraordinary breast tissue, ranging from as little as 0.6 kg (1.3 Lb) up to 2.5 kg (5.5 Lb) with most physicians defining macromastia as excessive tissue over 1.5 kg (3.3Lb). Some resources distinguish between macromastia where excessive tissue is less than 2.5 kg and gigantomastia where excessive tissue is more than 2.5 kg⁽³⁾.

To date there is no universally accepted definition⁽²⁾. Some authors have suggested the amount of breast tissue removed at Surgery should determine the definition. However, this has the disadvantage of being a retrospective diagnosis. Moreover, there is disagreement among authors on the amount of tissue removed to substantiate the diagnosis, with figures ranging from 0.8 to 2 kilograms⁽⁴⁾.

Gestational gigantomastia is a complication whose etiology and pathogenesis have yet to be fully clarified; however, it has been speculated that placental hormone may trigger the condition ^(1,5). This exaggerated increase in breast volume occurs most commonly at the end of the first trimester of pregnancy, coinciding with the period of peak gonadotrophin production, thus giving strength to the hypothesis of a hormonal association. There is no association between this excessive breast growth and the number of pregnancies the patient has had, although the condition is more common in multiparas ⁽⁶⁾.

The enlargement can cause muscular discomfort and over-stretching of the skin envelope which can lead in some cases to ulceration ⁽⁷⁾. Gigantomastia is characterized by massive enlargement of the breasts resulting in tissue necrosis, ulceration, infection and haemorrhage, complications that can be life threatening in certain cases. Although its cause remains unknown, gigantomastia is believed to represent an abnormal response to hormonal stimulation during pregnancy. Both glands grow dramatically, and weights of 4-6 kilograms per breast have been reported resulting in dyspnoea ⁽³⁾.

The severity of problem is emphasized by the patient's breathing problem and even big difficulty in standing and walking. According to the literature the most reliable conservative treatment is simple mastectomy ⁽¹⁾. Bromocryptine is the drug of choice as it has been reported to stop progression and cause regression ⁽¹⁾.

Inflammatory and infectious diseases puerperal mastitis is uncommon during pregnancy but occurs relatively often during breast-feeding. The organism that most commonly causes infection is *Staphylococcus aureus*, followed by *Streptococcus*. The source is the nursing infant's nose & throat. The infection is due to disruption of the epithelial interface of the nipple-areola complex with retrograde dissemination of the organisms. Usually, the patient has a history of a cracked nipple and nipple discharge.

Massive breast hypertrophy (gigantomastia) is a rare condition in which there is an exaggeration of the normal physiological hypertrophy of pregnancy. It may be due to heightened sensitivity to oestrogen, progesterone and prolactin, growth hormone & adrenal steroids. Typically, resolution to near pre-pregnancy size occurs postpartum, yet 39% of patients request surgical intervention ⁽¹³⁾. Surgery involves mastectomy with or without reconstruction or reduction mastopexy. In the latter, there is 100% recurrence rate during subsequent pregnancies. Surgery is usually reserved until after weaning, but in severe cases it is performed during pregnancy ⁽²⁾. Gigantomastia is usually bilateral. The presence of a tumour should be suspected in unilateral breast enlargement.

Swelstad et al examined mastectomy specimens from gestational gigantomastia histologically and found significant lobular hypertrophy, ductal proliferation and periductal fibrosis consistent with the changes found in the pregnant breast ⁽⁶⁾. There is an increase of stromal tissue and features of glandular hyperplasia.

Unfortunately, the assessment of breast disorders related to pregnancy and lactation has received scant attention in the radiology literature. Although most disorders related to pregnancy and lactation are benign, so-called pregnancy associated breast carcinoma (PABC) represents up to 3% of all breast malignancies ⁽⁹⁾. Knowledge of the unique entities that are specifically related to pregnancy and lactation and of their radiologic-pathologic appearances can help the radiologist make the correct diagnosis ⁽⁹⁾.

It is a rare psychologically & physically disabling condition characterized by excessive breast growth. It typically occurs in the setting of marked hormonal changes such as puberty and pregnancy; however, there have also been a number of reports of gigantomastia in the setting of autoimmune diseases. Gigantomastia associated with cortisone in the setting of ovary cancer treated with chemotherapy cycles after hysterectomy and bilateral adnexectomy has been reported ⁽⁶⁾.

Ultrasonography is the most appropriate radiologic method for evaluating breast masses in this setting and is particularly useful in the diagnosis and treatment of abscesses. We emphasize the value of USG as the most appropriate and effective method of evaluating breast disorders during pregnancy and lactation⁽⁹⁾. Apart from the physical problems of pain and ulceration, this condition may be associated with severe social problems. Other authors have recorded depression and low self-esteem⁽²⁾. This fortunately rare condition is particularly important in developing countries as it prevents breast feeding, which is crucial for the development of the infant and prevents effective contact between mother and baby, thus making bonding difficult. Gestational gigantomastia does not preclude a normal delivery⁽⁸⁾.

Learning points

- Gigantomastia in pregnancy progresses fairly rapid and may have complete resolution postpartum and breast surgery may not be required.
- Conservative management of gigantomastia can lead to good foetal and maternal outcome.
- Gigantomastia makes breast feeding impossible, a serious problem in developing countries where poverty limits the provisions of alternative to breast milk.

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