# Case Report

# Gestational Gigantomastia: A Case Report

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*Gestational gigantomastia is a rare disorder characterized by rapidly progressive hypertrophy of the breast tissue during pregnancy. Its prevalence is approximately 1:100,000, and although the etiology of this condition remains unclear, it may be related to hormonal change. This study reports the case of a 39-year-old pregnant woman at 22 weeks of gestation with massive enlargement of bilateral breasts (gigantomastia) and presents the sonographic findings of this rare condition which shows different parenchymal patterns from those of normal breasts and is uncommonly seen.*

***Keywords:*** *Gestational gigantomastia, Mammary duct hyperplasia, Reduction mammoplasty*

***J Med Assoc Thai 2017; 100 (Suppl. 1): S230-S233***
***Full text. e-Journal:*** *http://www.jmatonline.com*

Gigantomastia is a rare disorder, characterized by rapidly progressive enlargement and hypertrophy of the breast tissue with physical and psychological complications, which usually occurs in puberty or pregnancy. In the process of diagnosing gestational gigantomastia, quantitative evaluation was also performed. Excess breast tissue over 3.0% of total body weight[1] or 1.5-2.5 kilograms[2] was considered to indicate this disease, whose prevalence is approximately 1: 100,000[3-5] and which was first reported in 1,648[6-8]. Its etiology remains controversial; however, causes which have been reported to be associated with it include increased hormonal levels and/or receptor hypersensitivity of the estrogen, progesterone or prolactin[9], or immune-related diseases.

**Case Report**

On July 1, 2014 a 39-year-old woman presented at 22 weeks of gestation (G3P2A1, G1 abort, G2 NL in the last 10 years) with massive enlargement of bilateral breasts (Fig. 1) persisting for two months.

She had pain and redness around the periareolar area of the breasts and was experiencing difficulty in breathing. There was no history of breast mass, and no underlying endocrine or hematological abnormalities. Physical examination revealed that her body weight was 51.4 kg and her height was 150 cm. Evidence of mastalgia and dyspnea were noted with no accompanying fever or skin ulceration.

**Fig. 1** Patient's massive enlargement of bilateral breasts at 22 weeks gestation.

The right breast circumference was 63 cm and the left was 65 cm (approximately 10 times larger than before pregnancy).

Laboratory findings (01/07/2014):

Haemoglobin 11.6 g/dL, Haematocrit 34.0%, Leucocytes 8.90x 103/mm$^3$

Differential WBC count: PMN = 64.0%, L = 21.0% Mo = 5.6% Eo = 9.9%

Red cell count 4.13x10$^6$/mm, Platelet 370 x 10$^3$/uL

Blood urea 4 mg/dL, Serum creatinine 0.42 mg/dL, Blood sugar 77 mg

Liver function test: total bilirubin 0.54 mg/dL, SGOT 13 U/L, SGPT 8U/L, total proteins 6.4 g/dL, Alb 3.3 g/dL, eGFR = 129 mL/min/1.73m$^2$.

Urine analysis and other laboratory results were within normal limits. TAS revealed single viable fetus with transverse presentation, with estimated GA

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of 22 weeks, and Grade 1 placenta located at the posterior upper middle wall. There was no demonstrable adnexal abnormality. Breast ultrasonography on July 3, 2014 (Fig. 2-9) revealed diffuse glandular hypertrophy and heterogeneous parenchymal echoes, some small anechoic cystic lesions (6-17 mm), and mild dilated ducts at the central zone of both breasts. A well-defined, slightly hypoechoic solid mass (4x6.6 cm.) at 9 o'clock of right breast was suspected without significant abnormal signal flow, and bilateral axillae were unremarkable.

The patient was treated with reduction mammoplasty of the right breast, followed by left reduction mammoplasty after the delivery. The excised tissue from the right and left breasts weighed 3,300 g and 3,046g respectively. There was a successful outcome and no surgical complications ensued. Pathological diagnosis (15/7/2014) revealed mammary duct hyperplasia, focal cystic dilatation of mammary duct, focal chronic non-specific inflammation and several focal areas of hemorrhage. Pre-existing fibroadenoma could not be excluded. No evidence of malignancy was seen.

**Discussion**

Gestational gigantomastia is characterized by rapidly progressive enlargement of the breast tissue, which may affect unilateral or bilateral breasts. This condition can develop in any type of gestation, but more often occurs in multiparous conditions[10] and recurrent gigantomastia can sometimes re-emerge in subsequent pregnancies. The common laboratory workup for pregnant women with gigantomastia includes hematocrit level, differential WBC count, platelet count, serum electrolyte levels, liver function test, urinalysis, hormone levels (estrogen, progesterone, and prolactin), breast U/S and tissue biopsy.

Ultrasound is an effective imaging modality for evaluating breast lesions, especially in pregnant women in which mass detection by mammogram is limited due to hyperdense breast and the need to avoid exposure to radiation. The most common breast lesion in pregnancy is benign (simple) cyst. Other benign breast lesions are fibroadenoma, galactocele, breast infection, hemorrhage, abscess and gigantomastia (macromastia). Breast carcinoma or pregnancy-associated breast carcinoma (PABC) is uncommon, accounting for approximately 3.0% of all breast cancers. U/S investigation also helps to differentiate between benign simple cyst and other complications such as abscess, solid nodule or suspicious malignancy. When a suspected malignant lesion is detected, further investigation such as mammogram, MRI and/or tissue

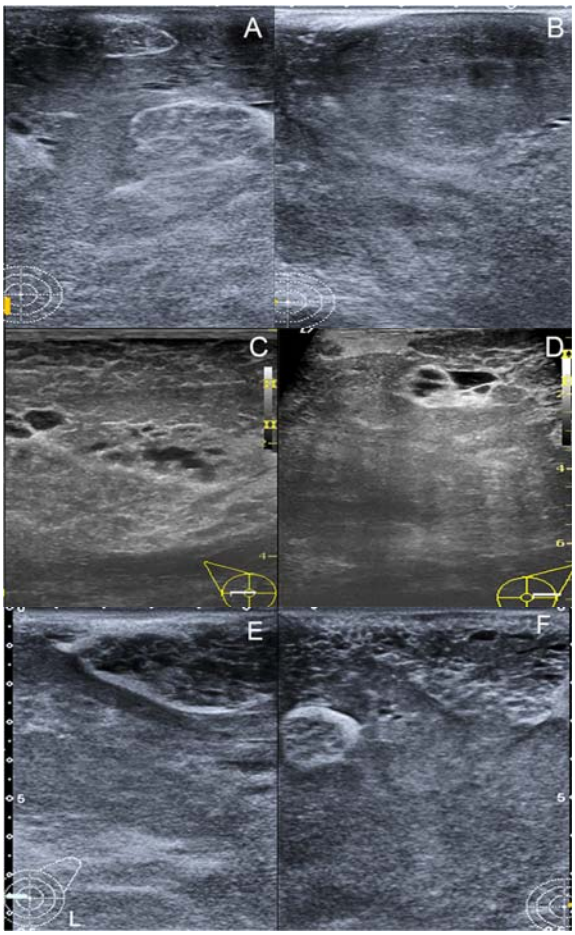


**Fig. 2** Findings of breast ultrasound in gestational gigantomastia, (A-C) from right breast and (D-F) fro the left: show diffuse heterogeneous parenchymal echoes and glandular hypertrophy.

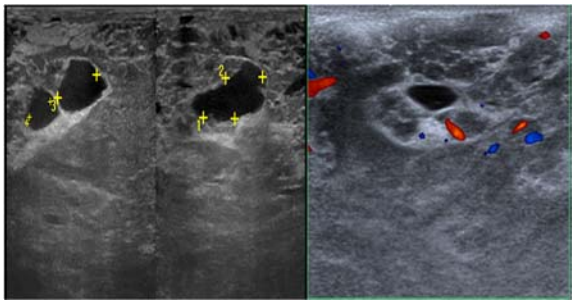

**Fig. 3** Breast ultrasound of gestational gigantomastia, showing mild dilated ducts and cystic changes.

diagnosis should be considered.

Breast U/S of this patient showed various patterns, including heterogeneous parenchymal echoes, glandular hypertrophy, mild dilated ducts and some cystic changes. Differential diagnosis may include mastitis or (Non-Hodgkin) lymphoma which is usually associated with axillary lymphadenopathy. Pathological diagnosis also showed mammary duct hyperplasia, focal cystic dilatation of mammary duct, focal chronic non-specific inflammation, and several focal areas of hemorrhage. There was no evidence of malignancy.

The treatment of gestational gigantomastia varies according to the patient's condition and disease severity. Conservative therapy, either appropriate breast support or symptomatic treatment, is indicated for uncomplicated cases, which can be spontaneously resolved after the delivery. Medical therapy may include bromocriptine, but fetal growth should be monitored, as some reports have found that it can be affected by bromocriptine. Surgical therapy with either mastectomy or reduction mammoplasty is usually reserved for severe cases with complications such as severe ulceration, necrosis or sepsis. However, there can be some recurrence in subsequent pregnancies when the patient is treated with reduction mammoplasty. Total mastectomy may be indicated to prevent recurrence[11].

**What this study adds**?

This study reports a rare disorder (gestational gigantomastia) and presents the common sonographic findings of this rare condition, which shows different parenchymal patterns from the normal breast and may mimic malignancy. The sonographic findings of this report may be useful as a guideline for diagnosing this rare disorder.

**Potential conflicts of interest?**

None.

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*โรคเต้านมใหญ่มากผิดปกติขณะตั้งครรภ์ เป็นโรคที่หายากโดยมีการขยายใหญ่ของเนื้อเยื่อเต้านมของหน้าอกอย่างรวดเร็วในระหว่างตั้งครรภ์ ความชุกของโรคประมาณ 1: 100,000 สาเหตุของภาวะนี้ยังไม่ชัดเจน ซึ่งอาจเกี่ยวข้องกับการเปลี่ยนแปลงของฮอร์โมน การศึกษานี้เป็นการรายงานกรณีของหญิงอายุ 39 ปีที่ตั้งครรภ์ 22 สัปดาห์ และมีการขยายใหญ่ของหน้าอกอย่างมาก และนำเสนอภาพอัลตร้าซาวด์เต้านมของโรคที่หายากนี้ ซึ่งพบเห็นได้น้อย ซึ่งแสดงให้เห็นรูปแบบเนื้อเยื่อที่แตกต่างจากเต้านมปกติ*