

## Neonatal Breast Hypertrophy: Revisited

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### Introduction

Neonatal breast enlargement is a benign condition that may be seen during the first days of life in the neonatal period and it has been reported to occur in 65-90% of infants. Within few months after birth it usually involutes, and later regrows during puberty due to hormonal stimulation. Breast enlargement is uncommon, when it occurs is a benign physical finding [1]. Neonatal galactorrhea, commonly referred to as witch's milk, is a cloudy discharge from the breasts that occurs when estrogen and progesterone levels decrease after delivery, enabling the secretion of prolactin and oxytocin from the neonate's pituitary [2]. The "witch's milk" resembles the maternal milk composition, the milk comes only when the breast are expressed.

### Clinical Case Report

We present a case of a baby girl, born full term adequate for gestational age at 39 weeks by C-section, due to cord prolapse. The mother was a late registrant for prenatal control with only 4 prenatal visits. She had a previous history of tetrahydrocannabinol (THC) use (as per the mother not used during the pregnancy) and chronic depression, treated in the past with risperidone, but not taken during the pregnancy.

At birth the physical examination was within normal limits, with no palpable breast tissue, with initial birth weight of 3005 grams (30%), head circumference of 34 cm (36%), and length of 54 cm (99%). Due to the prenatal history, the infant stayed in the nursery for 10 days until she was cleared by the administration of children's services for discharge with the mother. On day 9 of life it was noticed that the infant had bilateral symmetric breast enlargement (Figure 1), with a palpable breast tissue of 5.5 cm in diameter, and with minimal expression of the breast tissue, a cloudy discharge (Figure 2) was noticed on both breasts. No evidence of redness or inflammation, otherwise the infant was clinically well (Figure 1 which is quite disturbing to look at it in a newborn even for medical professionals).

### Discussion

The development of breast tissue starts around 5 weeks of gestation [3]. Mammary glands begin to develop as ingrowths of ectoderm into the underlying mesodermal tissue. The ingrowing mass of ectodermal cells become a pouch and then grows out into the surrounding mesoderm as a number of solid processes that represent the gland's future ducts. At 28 weeks of gestation, estrogen stimulates lactiferous ducts, progesterone stimulates the development of lobular tissue and alveolar budding stimulates the development of the breast tissue, inducing canalization, forming the lactiferous ducts [2,4].



Figure 1: Infant having bilateral symmetric breast enlargement.



Figure 2: Cloudy discharge of infant on both breasts.

It is unclear why the response to the hormones differs from neonate to neonate, but it has been suggested that individual factors such as hypersensitivity of the breast tissue to estrogen and/or prolactin are the main pathophysiologic factor for this condition. The terminology for neonatal breast masses is also unclear, with no clear cut-off measurements or true definition of breast enlargement. Athena's suggestion of terminologies for neonatal breast swelling, state that this condition should be called Mastauxe (that derives from the greek "mastos"-breast and "auxein"-increase in size), and should be divided into neonatal mastauxe (breast bud diameter  $\leq$  3cm) and giant mastauxe (breast bud diameter  $>$  3 cm) [5].

As it has been described it has no clinical significance since it resolves spontaneously within weeks to months. Since it is considered a benign physiological condition in a healthy newborn there was no need to do further laboratory workup, such as hormonal studies or ultrasound imaging, in our case, however the infant has to followed closely by pediatric care provider.

Occasionally the breast enlargement may persist for longer time, in such cases one has to look for any signs of inflammation, infection, abscess, resulting in generalized sepsis which may require hospitalization for systemic treatment with antibiotics. The most common organism implicated in abscess being *Staphylococcus aureus*.

## Conclusions

An increase in breast tissue size in female and male neonates may be a common finding in neonatal physical examination. Even though this

finding in other age ranges may warrant further workup, why some breast tissue in newborn responds to abnormal stimulation is unknown. In our case, mother had used marijuana and risperidone, both of them have been implicated in breast hypertrophy but it is not very clear if they had any effect. In neonates breast hypertrophy is a benign condition that requires only simple observation and parental reassurance, without imaging or any further workup, given that this tissue involutes and resolves by its own.

It is important to acknowledge to the parents that breast tissue expression is highly discouraged given that it may stimulate further growth as well as complications such as mastitis and galactoceles.

## References

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