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Galactocele: A rare case of breast enlargement among children.

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Abstract

A galactocele is a retention cyst containing milk or a milky substance that is usually located in the mammary glands caused by a protein plug that block off the outlet. It is seen in lactating women on cessation of lactation and rarely in infants and children. It presents as a large, soft, fluctuating lump in the lower part of breast. A case of galactocele in a 2year old child is reported with review of literature for its rarity.

Keywords: Galactocele, Breast enlargement, Breast tumor, Male child

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Introduction

The breast is responsive to a complex interplay of hormones that cause the tissue to develop, enlarge and produce milk. The three major hormones affecting the breast are estrogen, progesterone and prolactin. Each breast contains 15 to 20 lobes arranged in a circular fashion. The fat (subcutaneous adipose tissue) that covers the lobes gives the breast its size and shape. Each lobe is comprised of many lobules, at the end of which are tiny bulb like glands, or sacs, where milk is produced in response to hormonal signals [1].

The basic morphological structure of the human breast - female and male – is determined during the prenatal development stage but breast development sometimes is abnormal, manifested either as overdevelopment (e.g. virginal breast hypertrophy) or as underdevelopment (e.g. tuberous breast deformity) in girls and women; and manifested in boys and men as gynecomastia (woman's breasts), the consequence of a biochemical imbalance between the normal levels of the estrogen and testosterone hormones of the male body [2].

A galactocele is a milk-filled cyst composed of cuboidal or flat epithelium which frequently occur in women who are lactating or pregnant. Galactoceles can mimick fibroadenomas as well as breast carcinomas, but they are always non-cancerous and do not increase risk of breast cancer. It can be caused by anything that blocks a breast duct during lactation. It is possible that breast carcinoma has caused a change and blockage of some kind, but far more likely that it is the result of routine, benign causes. Galactoceles are the most common benign breast lesions in lactating women. They do seem to occur more frequently, however, after breast-feeding has stopped; as milk is retained and becomes 'stagnant' within the breast ducts [3].

Galactoceles, which present as cysts or pseudotumors, generally occur in young women after lactation and contain milk or viscous material produced from transformed milk. They have been reported in children as a rare cause of increased breast size and, surprisingly, in males [4, 5]. The etiology of galactoceles remains unknown.

Case Report

This is a case of a 2-year-old male diagnosed with Downs Syndrome and Patent ductus arteriosus (PDA) who presented with progressive enlargement of bilateral breast for the past 6 months. There was no discoloration, nipple discharges, and appearance of hair on the pubic or axillary area or darkening of scrotal skin.

On physical examination patient appeared well, active with features of Downs Syndrome with stable vital signs. Breast examination was done and the left breast was 6x4cm and the right is 4x3cm in size. The nipples and areolas were normal with no inflammation noted. Both breasts were cystic and non-tender upon palpation. No nipple discharge was evident. (fig.1). Abdominal and genital examinations were also done showing a lax abdomen with no organomegaly or palpable mass. The external genitalia were normal. Both testes were normal in size and present in the scrotum. There were no signs of hirsutism, pigmentation of the skin or other endcrinologic abnormalities. (fig.2). Fundoscopy was also done with normal results

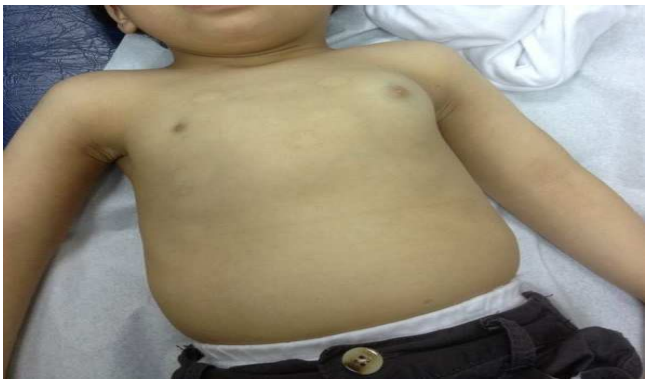

Figure 1.1 *Bilateral Breast Mass of a 2-year-old male occurred when he was still 1year and 6 months old*

Figure 1.2 *The external genitalia*

Figure 2. *Milk extracted through Aspiration*

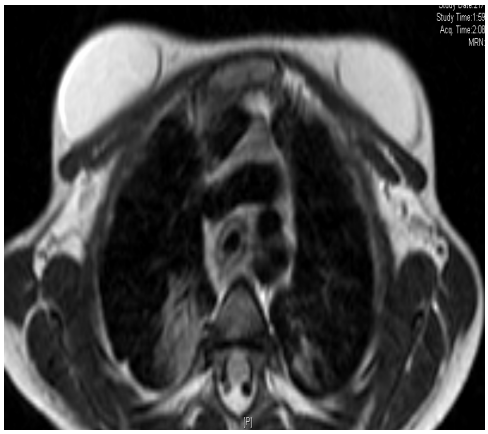

Figure 3. *The ultrasound imaging*

Ultrasound imaging showed an echo-lucency of the upper fluid and the high echogenicity of the lower component, together with a radiographic density lower than that of water, which represents the fat content of the milk products (fig.4). The persistence of the line separating both components suggests two non-miscible fluids, with the upper fluid having a lower specific gravity (fat) than the lower (milk). These findings were compatible in the diagnosis of galactocele. Aspiration was done and extracted 5cc of milk. (fig.3). Microscopic examination of the mass confirmed the diagnosis by revealing a presence of true cysts of the mass lined by cuboidal epithelium containing milk-like fluid.

Discussion

Galactocele is a rare cause of breast enlargement in males. All previously reported cases were diagnosed in infants and children. *Pettinato et al.* & *Bower et al.* reviewed that 3 out of 320 infants and children with breast lesions determined to have unilateral galactocele. These cases were noted in males aged 12 months, 21 months and 6 years. Galactocele is commonly described as unilateral but in some cases it can also be bilateral. Etiology is unclear, however it has been reported that galactocele may be associated with three factors: 1. previous or present stimulation by prolactin, 2. presence of secretory breast epithelium and, 3. some form of ductal obstruction.

Galactocele generally has a unique clinical feature however it may be associated with some endocrinologic abnormalities. Recently, *Rahman et al.* reported a case with galactocele associated with congenital hypopituitarism. Classical clinic presentations of the cases are progressive painless enlargement of the breast. Nipple discharge was reported in one case. On physical examination a fluctuant, soft, mobile and non tender mass in the breast is usually determined, as found in our case. *Gomez et al.* described the mammographic features of galactocele in adults. Nev-

ertheless, there is no specific mammographic finding in children with galactocele.
Ultrasound shows the echo-lucency with a radiographic density lower than that of water, due to the fat content of the milk products. In addition, aspiration of milk-like fluid may be the primary clue for the diagnosis however diagnosis of galactocele requires presence of a true cyst of the breast lined by cuboidal epithelium containing milk-like fluid with or without curd-like material that was also evident in our histologic findings. Simple excision is curative in all patients with galactocele. Aspiration can also be done and is also a form of treatment.

More common differential considerations in patients presenting with breast mass especially in children were as follows: 1. Administration of estrogens or estrogenic compounds, 2. Administration of non estrogenic drugs (digoxine, cimitidin), 3. CAH, 4. Hyper or hypothyroidism, 5. Testicular or adrenal tumors, 6. HCG secreting tumors, 7. Aromatase excess syndrome (familiar hyperestrogenism). Based from the mentioned differential diagnosis, and based from the laboratories done, there were no evidence of prior hormone stimulation, hormone alterations, or trauma were observed to rule out or exclude any of the previously described etiologic hypotheses. Although galactoceles have been known to develop in children and adolescents, the few publications that exist on the subject do not explain why this occurs in male infants. It only suggests this rare disorder will continue and physicians should consider the possibility of this lesion in presence of a soft, mobile and non tender mass in the breast of infants and children.

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