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Review Article

# Axillary crystallizing galactocele masquerading malignancy: A rare case report and review of literature

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ABSTRACT

Galactocele are the most common benign lesion in lactating breast, whereas crystallizing galactocele are the rare variant. Axillary crystallizing galactocele are extremely rare to see , most commonly occur due to wrong breastfeeding technique. FNAC smear shows variety of crystals along with cysteine like crystals in a background of granular amorphous material or lipid micelles.



## 1. Background

Galactocele /lactocele are the most common benign breast lesion during lactation that can mimic carcinoma.[1] It is defined as an encysted collection of milk products that is lined by a flattened cuboidal epithelium.[1,2] Galactocele is not a metabolic disease, but have hormonal etiology. The etiopathogenesis of galactocele is the blockage of lactiferous ducts during lactation or in $3^{rd}$ trimester of pregnancy. Also, premenopausal women and infants can present with galactocele due to hormonal stimulation/OCP intake /breast surgery and prolactinomas/ transplacental prolactin passage respectively. Galactoceles usually resolve on their own in most cases, as the hormonal changes linked to lactation settle down. However, crystallizing or solid galatocele may require intervention. Antinatal and postnatal breast massage are preventional and therapeutic respectively ,whereas axillary galactoceles mostly form due to wrong breastfeeding technique. Some clinicians, have proposed that diagnostic aspiration from cyst may prove to be therapeutic at the same time.[3]

## 2. Case Report

A 25 years old thin, multiparous women, postpartum 1year & 10 months had breastfed her child intermittently to the day of presentation. She presented with left axillary swelling of size 4x3 cm, nontender and soft in larger part, but the apical part of swelling was tender, firm and fixed in consistency. Right axilla and both breast were examined thoroughly found to be free of any lump. Small amount of fresh milk was seen while examining nipple. A particular history of breast feeding in lying posture raising her arm was noted. FNAC was attempted twice revealing 1 ml of thick creamy colostrum like material from soft area and chalky white material from tender firm area giving gritty sensation. The smears were stained with MGG, PAP and ZN stain (to rule out tuberculosis).

The smears studied shows abundant granular amorphous proteinaceous material with variety of crystals and lipid micelles interspersed within. These crystals are numerous in number, vary in size, shape and appearance like colorless, eosinophilic, basophilic, yellowish, granular brownish in color. Mostly, crystals are refractile, irregular in shape, needle shaped, rhomboid, cysteine like crystals with clear cut sharp margins. Few acinar cells seen in cohesive flattened sheet along with sparse number of macrophages.

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**Table 1:**

| Study | Age/Sex | Site | Clinical presentation | History of lactation | Clinical diagnosis | FNAC findings |
|---|---|---|---|---|---|---|
| Raso et al[2] (1997) | 23yr/ F | Upper middle area of breast | 1cm , discrete, non-tender nodule | Present | | Crystals of varying size and shape, best viewed with Diff-Quik and demonstrating metachromasia, polarisation and birefringence. |
| Nikumbh et al[4] (2013) | 27yr/F | Upper outer quadrant of Right breast | 1.5x1.0 cm ,discrete, mobile non-tender nodule since 2 months | 1&1/2 yr postpartum, breastfeeding to the day of presentation. | Fibroadenoma | Thick, milky material aspirated with reduction in size of lesion. Smear showed numerous, distinct, compact, and semitransparent to dark blue/purple crystals. Background showed granular, amorphous and proteinaceous material. epitheilal cells not seen. |
| Jyoti et al[5] (2015) | 30yr/F | Upper outer quadrant of right breast | 3x3cm, mobile, nodular, discrete, nontender lump since 1 month | Present | Fibroadenoma | Chalky white powdery material aspirated. Smear showed numerous crystals of varying sizes with angulated orders. Background showed acellular, granular amorphous proteinaceous material. No ductal cells and macrophage seen. |
| Nuzhat S et al[6](2015) | 35yr/F | Lower outer quadrant of left breast | 3x3cm, discrete, non-tender nodule since 3 years. | 3years postpartum and had presented with swelling after 6 months | Fibroadenoma | 5ml milky fluid aspirated with reduction in swelling. Smear showed birefringent angulated crystals of varying size and shape and amorphous material in MGG. |
| Shetty et al[7] (2016) | 25yr/F | breast | | Present | | Smear showed crystals of varying size and shape .many tyrosine crystals also noted |
| Present study (2018) | 25yr/F | Left axilla | 4x3 cm, soft to firm in consistency. Painless in large area, painful focally | Intermittently and lactating at the time of presentation | ?Malignancy | Mentioned above in detail |

Foci of calcification seen along with lipid micelles. No atypical/ malignant cell seen in smears screened. ZN smear studied, found to be AFB negative. The diagnosis of crystallizing galactocele was made confidently on FNAC with the help of characterstic material and presence of milk in the nipple.

## 3. Review of Literature

This is effectively a meta-review of all reported cases of crystallizing galactocele. Being a rare entity, this is the $6^{th}$ case report of crystallizing galactocele with the aid of FNAC and $1^{st}$ on axilla, rest reported on breast from the best of our knowledge so worth to be reported.

## 4. Discussion

Although, galactocele most commonly located in breast , behind the areola but can occur anywhere along the milk line extending from axilla to groin.[8] The hypothetical etiology behind axillary galactocele are the wrong breastfeeding technique. Most of the patients gave history of breastfeeding intermittently and in lying position, milk get regressed in axillary breast tissue, retained and becomes stagnant forming an inspissated cyst which further form crystals. The panorama of crystals were seen in this case like cysteine type which is itself extremely rare, under circumstances when the milieu is acidic. Galactocele usually resolve spontaneously after cessation of breastfeeding as the milky material are sterile, but axillary galactocele are uncomfortable and may get infected forming abscess, or may become calcified mimicking malignancy. In that case, treatment is only complete excision.

## 5. Conclusion

Axillary galactocele can only be diagnosed by careful inspection of aspirated material along with full clinical examination and detailed history of pregnancy, lactation, or hormonal therapy . Galactocele are rare in axilla so here a very important querry that should be enquired from the patient regarding her breastfeeding technique. FNAC plays a pivotal role in diagnosis , it is well accepted, cost-effective technique for the initial evaluation of clinically suspicious malignancy during pregnancy and lactation. FNAC in galactocele is both diagnostic and therapeutical at the same time[9] without demanding any radiological correlation as it is not productive without cytomorphology.

Carry home message: In pregnant or lactating female, presented with mass in any area along the embryological milk line , not only axilla or breast which is associated with milky, cheesy, colostrum like, chalky white viscous pathognomic aspirate, it is of paramount importance to consider a diagnosis of crystallizing galactocele.

## 6. Abbreviations

FNAC- fine needle aspiration cytology, OCP- oral contraceptive pills, MGG- May-Grunwald Giemsa stain, Pap- Papanicolaou stain, ZN- Ziehl -Neelsen stain, AFB- Acid fast bacilli

## 7. Conflict of Interest

The authors declare that there are no conflicts of interest in this paper.

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