

# From painful breast erythematic lesions to incidental mammary findings

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## ABSTRACT

**Introduction.** High prolactin may cause central hypogonadism including osteoporosis and breast secretion but also rare manifestations like increased androgens in females or galactocele. A part from high prolactin – related large cystic incidental mammary findings, the breast cysts may be associated with infections, local trauma and hemorrhage of priory benign cystic disease or solid tumors.

**Method.** We introduce different clinical aspects of breast nodules with benign appearance, either symptomatic like painful large cyst with local inflammation elements or asymptomatic as an incidental finding. This is a cases series from a multidisciplinary perspective.

**Cases data.** The patients' age is between 43 and 62 years. The youngest female presented a large left cyst after a potential local trauma with local inflammation signs which were released after liquid evacuation. The oldest patient had bilateral mammary micro-cysts with a good prognostic as incidental finding.

**Conclusion.** Benign breast lesions of adult females may associate local skin changes as redness and increased temperature or they may be completely asymptomatic, being detected as incidental findings. Regardless the scenario, the index of malignancy suspicion is always necessary because of heterogeneous presentation and increased incidence of mammary cancer.

**Keywords:** mammary cyst, breast nodule, incidentaloma, incidental finding, erythema

## INTRODUCTION

Incidental imaging findings, a “fashionable” multidisciplinary topic, include affects endocrine organs like hypophyseal and adrenals glands but generally any organ with parenchyma (1,2,3). A recent large meta-analysis including 240 studies of different types showed that incidental findings are found more than one third at investigations like computed tomography or magnetic resonance imagery (2). The rate of malignancy varies with the inclusion criteria of studied population (2). It is low for pituitary incidentalomas but it increases to 5 % for adrenal incidentalomas based on some analyses (2,4,5). Usually there is no hormonal activity at the level of an incidentaloma but controversies around

the definition are still running (4,6,7). Positive endocrine activity is an indication of tumor removal (8,9). The exception is a prolactinoma confirmation in which case medical therapy with dopamine agonists is the first line therapy unless severe compression symptoms are confirmed thus requiring neurosurgery (8,9). High prolactin may cause central hypogonadism including osteoporosis and breast secretion but also rare manifestations like increased androgens in females or galactocele (10,11). A part from high prolactin – related large cystic incidental mammary findings, the breast cysts may be associated with infections, local trauma and hemorrhage of priory benign cystic disease or solid tumors (12). Other large cysts have been described at the level of pineal and pituitary and adrenals as well as

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thyroid gland of different underlying pathogenesis pathways (13,14,15).

### AIM

We introduce different clinical aspects of breast nodules with benign appearance, either symptomatic like painful large cyst with local inflammation elements or asymptomatic as an incidental finding.

### METHOD

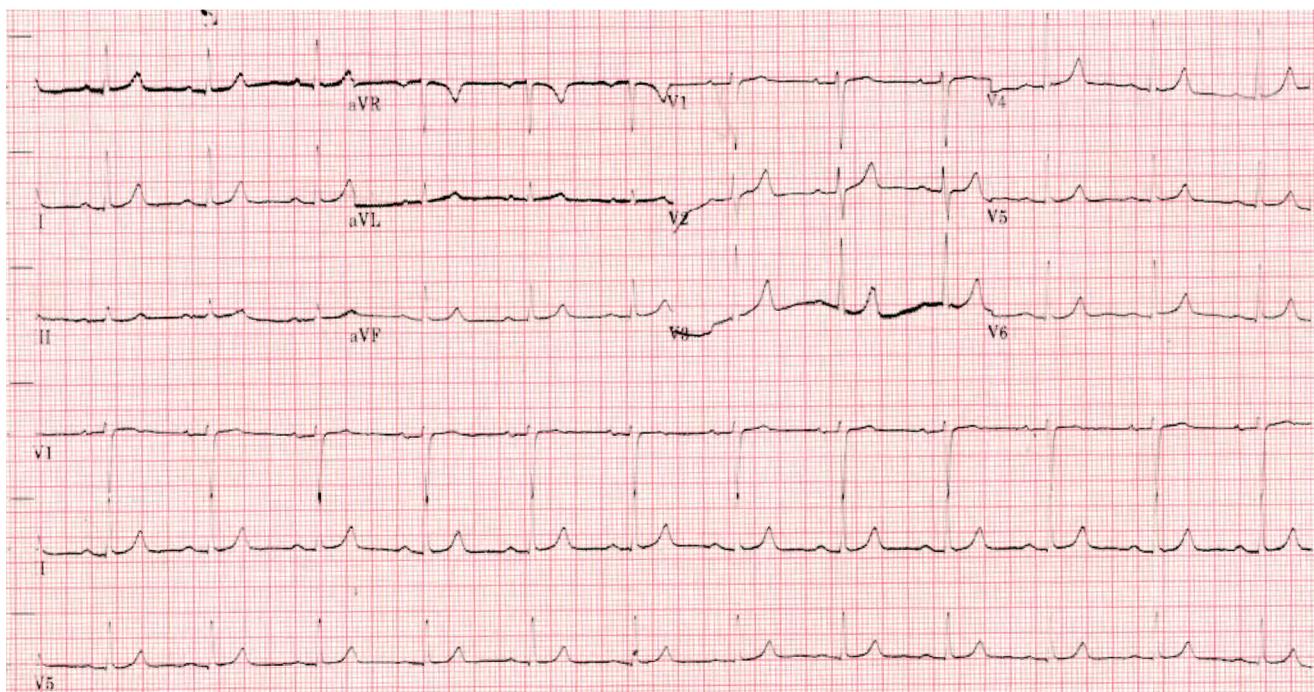
This is a cases series from a multidisciplinary perspective. The patients agreed for anonymously presentation of their medical data.

### CASES DATA

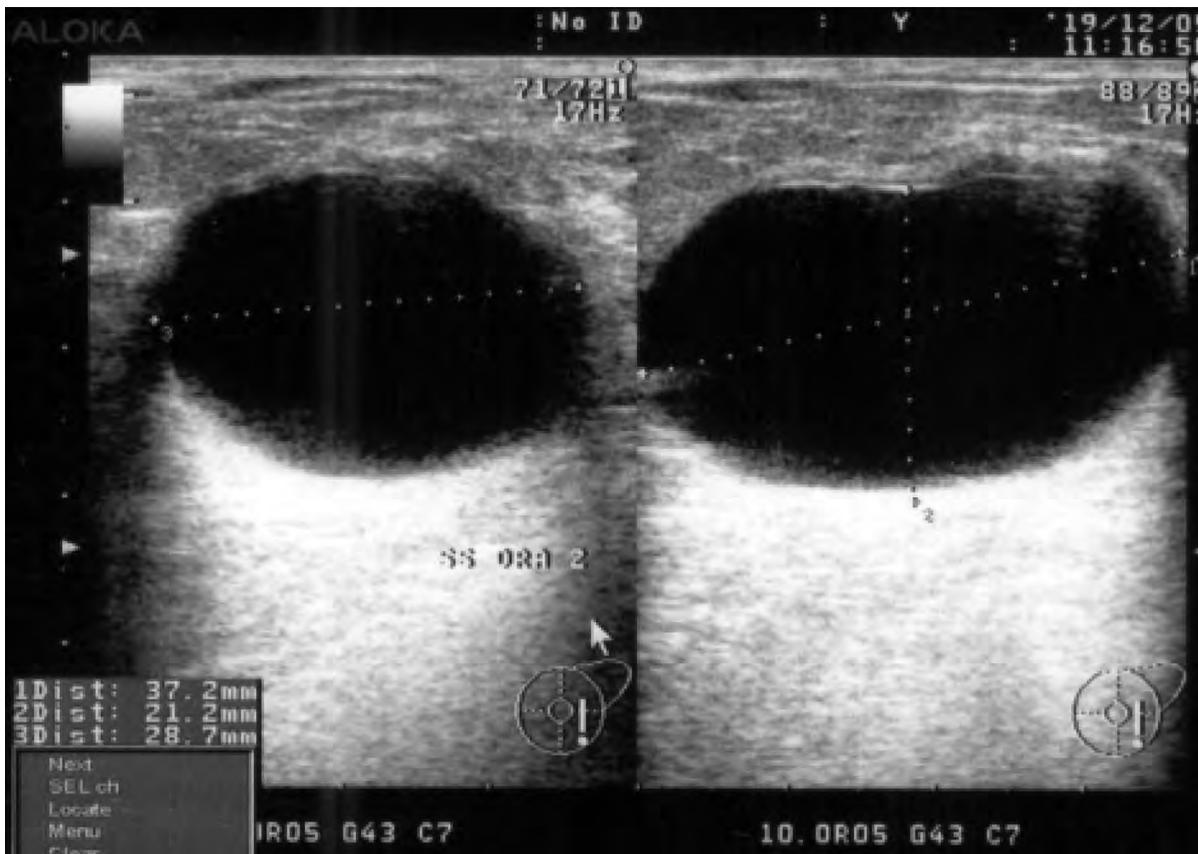
#### Case 1

This is a 43 year old non smoking female admitted for painful left breast with local *rubor* and *calor* since last week. The family medical history is negative. She had a recent surgery done for cervical hernia and she is under physical rehabilitation program. She had a history of benign cystic dysplasia of the breast a few years ago; since then she has intermittent mastalgia during menstruation without medication (regular menses). She had two normal births more than 15 years ago and she does not use

oral contraceptives. She also currently accuses intermittent chest pain and paresthesia. She was seen in several medical departments until admission to endocrinology. At presentation, signs of inflammation are positive for the area of left breast. Normal total calcium levels of 9.8 mg/dl (normal between 8.5 and 10.3 mg/dl) excluded a potential anomaly of calcium metabolism. Electrocardiogram showed sinus rhythm of 72/minute; in addition she had normal blood pressure (Figure 1). The assays pointed normal TSH (thyroid stimulating hormone), testosterone, and prolactin (of 8 ng/ml, normal between 3.3 and 26 ng/ml), while blood inflammation markers showed normal fibrinogen of 411 mg/dl (normal between 200 and 500 mg/dl), C reactive protein of 0.158 mg/dl (normal between 0 and 0.5 mg/dl) and a small increase of erythrocytes sedimentation rate of 26.7 mm/at 1 hour (normal between 1 and 25 mm/1-h). Breast ultrasound showed left mammary gland with mix structure and multiple cysts or micro-cysts of 9.8/4.3 mm (millimeter), 37.2/21.2/28.7 mm (well shaped with regular margins), of 12.7/7.4 mm, and multiple other cysts of less than 5 mm and also a solid nodule of 9.8/4.3 mm with hypo-echoic pattern and a cluster of micro-cysts (Figure 2 A,B,C). A Similar structure was confirmed at the level of right breast with multiple cysts, the largest of 13.5/7.1 mm, respective 8.8/8.3 mm (Figure 3). Despite the fact that the patient was offered oral anti-inflammatory drugs, the rapid and



**FIGURE 1.** Normal electrocardiogram on a 43-year old female admitted for non-specific chest pain in addition to non-breastfeeding inflammation at the level of left breast



**FIGURE 2A.** The largest cyst of 37.2/21.2/28.7 mm (well shaped with regular margins)



**FIGURE 2B.** A solid nodule of 9.8/4.3 mm with hypo-echoic pattern and a cluster of micro-cysts



**FIGURE 2C.** A cyst of 12.7/7.4 mm

**FIGURE 2.** Multiple cysts on a cystic dysplasia background. 43-year old female presenting with acute pain and redness at the level of left breast

complete remission of the symptoms was seen only at cyst evacuation through fine needle aspiration. No atypia was registered at cytological report.



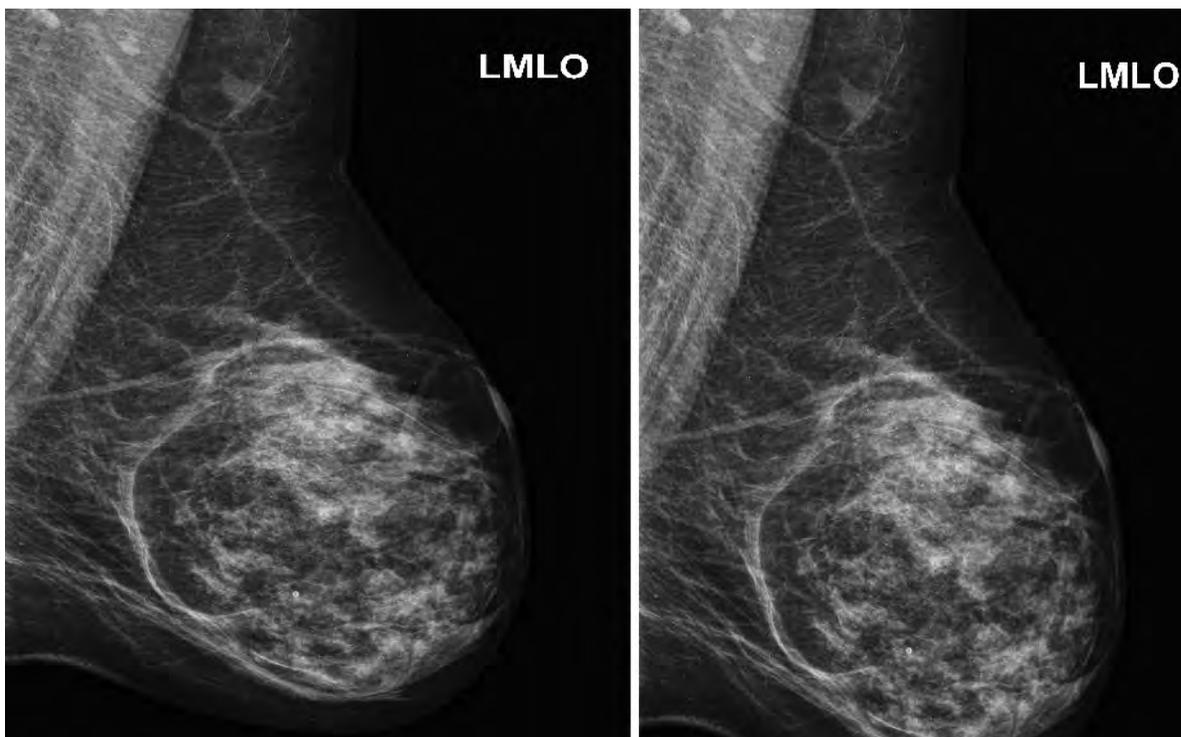
**FIGURE 3.** Right mammary gland with a cyst of 13.5/7.1 mm

## Case 2

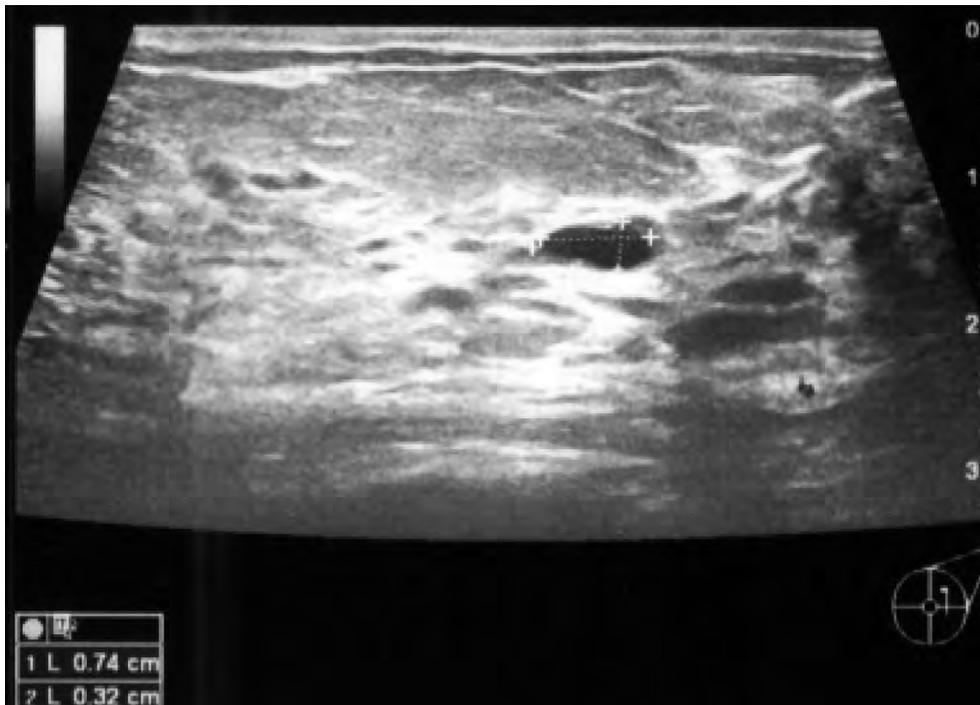
This is a 55-year old female who was admitted for mineral metabolism evaluation because of recurrent kidney stones. She recently entered menopause without specific vasomotor symptoms. The family medical history is not significant. The clinical examination is within normal parameters inclusive body mass index. The blood parameters were within normal parameters including parathormone. Screening mammogram was done and revealed an incidental opacity of heterogeneous structure with partially irregular shape, the largest diameters of 80/90 mm, probably a myelolipoma (Figure 4). Prolactin and TSH were normal. The patient refused further biopsy and investigations.

## Case 3

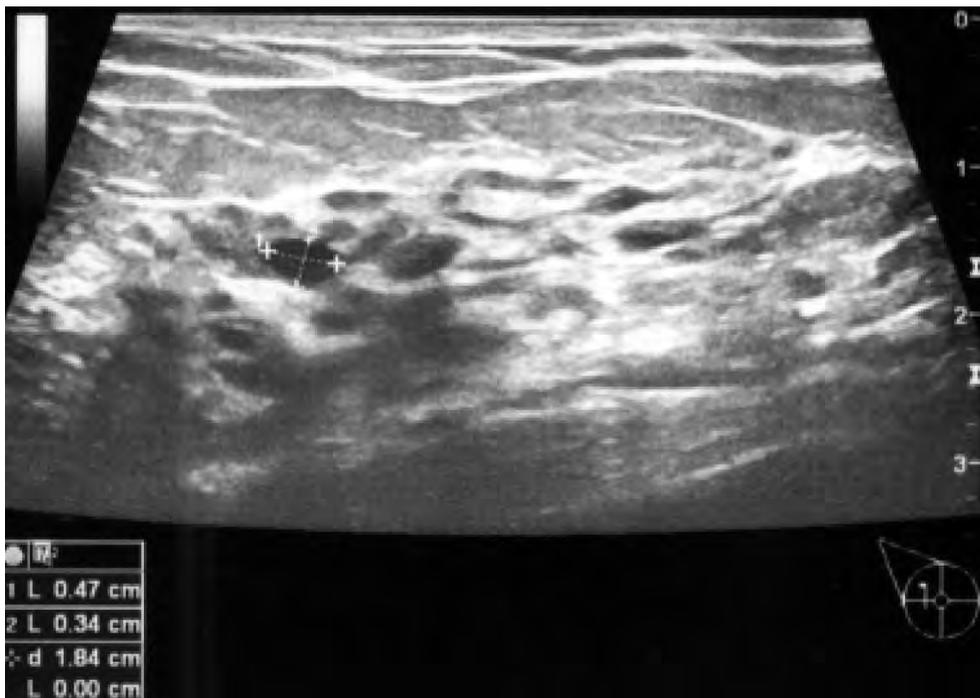
This is a 62-year old non-smoking female known with pituitary incidentaloma since the last 5 years. She had menopause at age of 50 years without hormone replacement therapy. Endocrine pituitary profile is normal, magnetic resonance imagery showed a stationary micronodule of 5 mm. A screening breast ultrasound was done and it revealed a small cyst at the level of right breast of 4.7/3.4 mm, and a left microcyst of 7.4/3.2 mm, without other anomalies (BIRADS 2 bilateral) (Figure 5). Mammogram confirmed the score. The patient was further follow-up.



**FIGURE 4.** Left breast mammogram. Incidental opacity of heterogeneous structure with partially irregular shape, the largest diameters of 80/90 mm, probably a myelolipoma on a 55-year old female



**FIGURE 5A.** A small left microcyst of 7.4/3.2 mm, without other anomalies (BIRADS 2 bilateral)



**FIGURE 5B.** A cyst at the level of right breast of 4.7/3.4 mm

**FIGURE 5.** This is the breast ultrasound assessment of a 62-year old non-smoking female

## DISCUSSION

We introduce some practical points related to the cases we introduced. The first case had more probably a post-traumatic hemorrhage at the level of a previously small cyst with local inflammation. The liquid evacuation was salutary for the symptoms. The lack of connection with menstruation,

pregnancy or breastfeeding is suggestive as etiologic context (16,17,18). The second case was not confirmed with calcium metabolism anomalies thus screening for osteoporosis was unnecessary at this age knowing the short time since menopause and lack of clinical risk factors (19,20). No profile lumbar spine X-Ray screening was either consider useful (21). The myloliopoma is a rare finding of in-

cidentaloma type in this case (1). A limited number of reports showed the association with breast cancer or ovarian lesions while this type of tumour is more frequent found at adrenal level (22,23,24). The risk of malignancy for a breast incidentaloma is high of 42% while for thyroid or ovarian incidentaloma is up to 25% for unselected series (2). The third patient had a pituitary incidentaloma. One of ten adults may have this harmless diagnosis and it does not increase the risk of mammary lesions which were incidental (1). The menopause – detected cysts were not suspicion for a breast malignancy in this particular case due to their imaging features. However, rapidly growing breast cysts

may be found in in menopause and they may underline a breast cancer (25). Moreover, in menopause screening of breast cancer is preferable to be done with mammogram as first step (26).

## CONCLUSIONS

Benign breast lesions of adult females may associate local skin changes as redness and increased temperature or they may be completely asymptomatic, being detected as incidental findings. Regardless the scenario, the index of malignancy suspicion is always necessary because of heterogeneous presentation and increased incidence of mammary cancer.

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