

BILATERAL SUB AEROLAR BREAST ABSCESS

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ABSTRACT

A Sub-areolar abscess is a rare clinical entity, usually affecting young, non-lactating women. Along with the clinical assessment, an ultrasound some time is helpful in its diagnosis and differentiation from malignancy, however, a mammogram is not sensitive for this purpose. We present 18-year old female with a normal immune system and history of sub-areolar breast abscess on each side over two years of interval.

Key words: bilateral breast abscess; mammography; breast ultrasound; bilateral mastitis.

Introduction

Breast abscess is a localized pocket of infection containing pus tissue; it commonly affects women of reproductive years with age ranging from 18-50 years. It can be divided into lactation and non-lactation infection. It can affect the overlying skin as a primary event or secondary to a lesion such as sebaceous cyst. The organisms commonly responsible for non-lactating infection include staphylococcus aureus, enterococci, anaerobic, streptococci, bacteroids and occasionally fungi.¹ The pathogenesis of subareolar breast abscess receives little mention in the literature⁵ Montgomery or areolar glands lie just below the surface of the areola, their function is lubrication during lactation, and these glands can be blocked resulting in abscess formation in non lactating women of usually the young age group² as suggested etiology in our presenting case.

Equipment Used

Examination of breast was performed by using 12.0 MHZ linear transducer with virtual convex and color flow imaging. GE logic 9 is used for diagnosis, which has a high performance system, capable of multi-dimensional imaging for a full range of clinical application. It is the state of art machine from abdomen to breast to vascular imaging.

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Case Report

18-year old unmarried woman was referred to the ultrasound department of the Dr. Suleiman Habib medical center, with the chief complaint of a painful swelling in her right breast, peri-areolar region, for about 10 days. The patient denied nipple discharge or constitutional symptoms. Her menarche was at the age of 12 years; has irregular period, no cyclical breast pain or tenderness. She denied any systemic disease; or medical treatment. She reported no family history of breast or ovarian cancer. On taking further history, the patient had experienced a similar medical problem in the contra lateral breast that was confirmed as an abscess post-aspiration and had completely resolved post-antibiotic treatment. This time the patient had been referred by a gynecologist to address her concern of skin lesion.

On local physical examination, both breasts were symmetrical with uniform contour. On palpation, a small, firm, mobile, tender lump had been felt in the right breast subareolar region. No skin or nipple change. Ultrasound demonstrated at 6'o clock position zone1, right breast, a 1.22 x 0.6 cm, ill-defined, gently lobulated, thick-walled fluid collection with posterior enhancement, edge shadowing an increased echoes in its wall and the surrounding tissues on power Doppler study. (Fig.1) The surrounding breast tissues showed increased echogenicity due to edema along with hypo echoic, focal overlying skin thickening (0.5 cm). But it showed no fistular connection with the skin nor there was

tracking into the underlying breast tissue. No dilated duct or any other lesion was seen. There were a few tender lymph nodes in the right axilla with thick but uniform cortices and compressed fatty hilum, showing no suspicious index, reported as probably reactive. The images was classified the lesion under the BIRADs 3 suggestive of a subareolar abscess, and recommended aspiration biopsy. Aspiration was not done, however the patient was treated conservatively with 2 courses of antibiotics in 3 weeks interval and after one month, the follow-up sonogram revealed complete resolution with no residual abnormality.

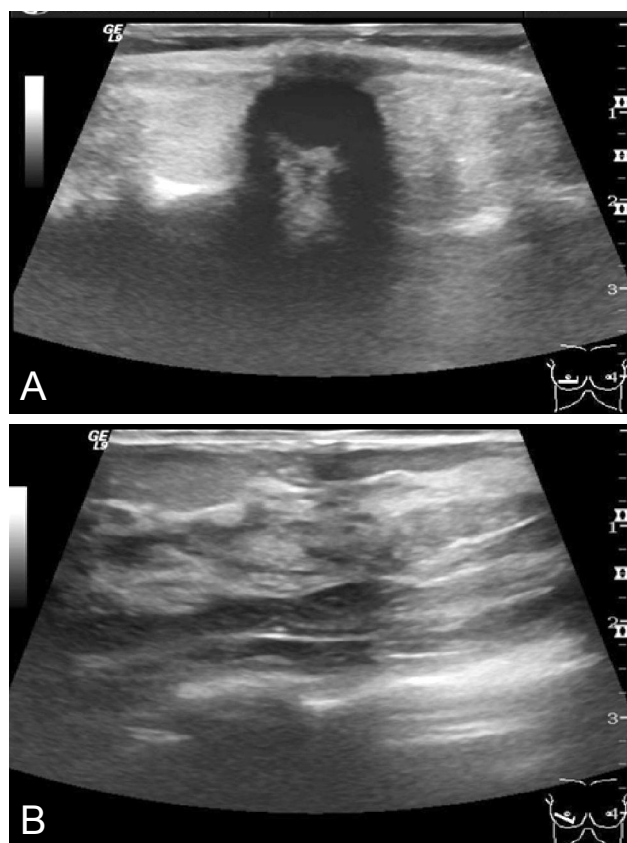


Figure 1A: Transverse US scan of right breast , showed an oval parallel, cystic lesion with posterior enhancement , edge shadowing ,per lesion edema and skin thickening.**1B:** US follow up post treatment showed complete resolution.

Discussion

The main concern of most of the women presenting with breast symptoms, including lumps, is likelihood of cancer, however, most breast masses are benign including fibroadenomas, fibrocystic condition, intra-ductal papilloma and breast abscesses.^{1,2} Non-lactating infection can be separated into those occurring centrally

in the periareolar region and those affecting the peripheral breast tissues. The latter one is less common and usually associated with other underlying conditions, like diabetes mellitus, rheumatoid arthritis, steroid therapy, granulomatous lobular mastitis and trauma.² Subareolar abscess, having no association with an underlying risk factor⁴ as the presented patient.

Periareolar infection is most commonly seen in young women with a mean age of 32 years. Histologically there is active inflammation around a non-dilated duct (non lactation) in the subareolar area, a condition termed as periductal mastitis.² Nipple / subareolar abscess is a particular manifestation of central breast infection, It is a localized collection of pus in the retro areola area or 1 cm from the areola, thus it can be said that the reported patient presented with the classical history and location of a subareolar abscess. It is also known as ZUSKA's disease, lactiferous fistula or subareolar gland disease.^{3,4}

Central abscess frequently causes nipple discharge,³ but not seen in the presented case, The patient presented with pain and a tender swelling in the right breast, peri-areolar region. These are typical clinical presenting features of a subareolar abscess; others include pus or discharge emerging from the swollen tissue, fever, a general feeling of illness similar to flu like symptoms,² which was not seen in this case.

Even though imaging studies are frequently undertaken to rule out malignancy, mammography and ultrasound of breast abscesses are not always conclusive. A breast abscess is likely to appear on a mammogram, as an ill-defined mass, typically with some areas of increased density and distortion. These types of features cannot be confidently differentiated from breast cancer lesions. Mammogram is also less sensitive for its diagnosis in young women and those with dense breast tissue.⁴ For that reason only ultrasound was requested for case of the 18 years old female.

The goal of imaging studies is to rule out carcinoma and to avoid unnecessary major surgery. Ultrasound can help to distinguish between an abscess and breast cancer. Breast cancer usually will show on ultrasound as an irregular hypoechoic mass that may or may not have posterior acoustic shadowing. A breast abscess will usually show on ultrasound as an ill-defined, echogenic mass with central, irregular hypoechoic or septations. It may or may not cause posterior acoustic enhancement, though depending upon the location of the abscess, the sonogram may not always

give a clear picture, e.g. When the abscess is located right under the nipple, the abscess might not show up at all on ultrasound and this might be a situation where MRI is used to provide a more comprehensive view of the lesion. However, generally, conventional imaging is usually sufficient and MRI not indicated.^{4,5} Although the ultrasound of the presented case demonstrated the lesion with difficulty owing to its location, we used a different technique to avoid the excessive nipple shadowing, like transducer angulations at nipple periphery, two handed compression and excessive gel bed, that helped to achieve better lesion visibility; also being palpable, the lesion helped in its localization. The lesion was oval, parallel to the skin and cystic, giving a benign impression, however, being ill-defined with mural thickening and hyperemia, a simple cyst was excluded and picture was concluded to be more in favor of a complicated cyst. the case was classified as probably benign, Taking in consideration the clinical picture, raising the possibility of a subareolar abscess with reactive lymph nodes, in the axilla. Aspiration biopsy was recommended for confirmation.

Differential diagnoses included fibrocystic changes, but no other cysts or ductal dilatation were found in the same or the contra lateral breast. The lesion did not give a typical picture of a breast cancer on ultrasound and the history was not suggestive too however, a sonographic follow-up was suggested after treatment to exclude the remote possibility of infection on top of Ca.

The lesion was not aspirated; however, the patient was treated conservatively with 2 courses of antibiotics in 3 weeks interval after the first showed some clinical response. After one month from the earlier, the follow-up ultrasound showed complete resolution with normal breast tissue showing no residual change.

Conclusion

Subareolar breast abscess although rare is a troublesome condition cause prolonged morbidity and tend to have a chronic, recurring nature. Because the affected patients are usually young women, with tendency to form fistula & cosmetically deformation of the nipple and areola complex that often accompanies the disease is also distressing.^{3,4,5} It is also difficult to fully assess the lesion by conventional radiologic examinations such as mammography and sometime sonography⁴ therefore deserves increased attention;

a refractory abscess should be treated by surgical drainage.^{3,5,6} In recurrent cases, surgical removal of the affected glands is effective.^{6,7}

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