Breast abscess due to *Escherichia coli* – A case report

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ABSTRACT

Breast abscess is common in lactating mothers. However, in non lactating women with underlying risk factor like diabetes mellitus is on the rise. Staphylococcus aureus is the most common causative agent but Breast abscess due to Escherichia coli is rarely reported. We present here a case of breast abscess in a woman with underlying diabetes mellitus treated with surgical drainage and antibiotics.

Key words: escherichia coli, breast abscess, non-lactating, diabetes mellitus

INTRODUCTION

Breast abscess is a common clinical condition among lactating women and less common among non- lactating women and often associated with some underlying condition. The incidence of breast abscess varies from 4.6% to 11%.[1] Lactational breast abscess often manifest with acute onset of breast pain in post puerperal period. The most common causative agent is staphylococcus aureus. The portal of entry for the bacteria is usually a fissure at the base of the nipple.[2] Breast abscess in non lactating women although uncommon most often occur in perimenopausal age group.[3] Pre-existing cytomorphological abnormalities such as nipple inversion, duct ectasia, duct metaplasia, congenital abnormalities, co-existing malignancy may be contributory factors.[4] The most important risk factor reported for non lactating breast abscess is diabetes mellitus.[5]

CASE REPORT

A 41 year old non lactating woman presented herself in surgical OPD with complaints of pain in the right breast and fever since seven days. No significant history of illness or of diabetes could be elicited.

On examination the patient was found to be hypertensive. Local examination showed swelling in the right breast which was tender measuring about 8×9 cm in size. The left breast was normal. Lab reports (random blood sugar: 343mg/dl, routine urine for sugar +++) were suggestive of her being diabetic. Breast abscess was concluded as clinical diagnosis. Incision and drainage was done under general anaesthesia. Aspirated pus was sent for culture and sensitivity which yielded a pure growth of Escherichia coli sensitive to Imipenem, Gentamycin, Levofloxacin, Ciprofloxacin, Cefotaxime, Ceftrioxone, Amikacin, Amoxyclav. Gram stained smear of the pus sample showed plenty of pus cells and gram negative bacilli. No AFB was seen. The patient was treated with Amoxicillin/clavulanic acid and Metronidazole and discharged after 7 days in a healthy state with advise to continue the oral hypoglycemic drugs and anti hypertensive drugs and for follow up visit after 15 days. The patient was asymptomatic at follow up visit and agreed to come for regular follow up visits for evaluating her diabetic and hypertensive status.

DISCUSSION

Breast abscess is a common problem among lactating mothers. However the incidence of breast abscess in non lactating women is also on rise. Breast infection in non lactating women accounted for 24% of all cases with breast

infection; a study has reported.[7] However, yet another studies states higher incidence of non-lactating breast abscess in comparison to lactating breast abscess.[8,9] It is very convincingly demonstrated that the most important risk factor for non lactating breast abscess is diabetes mellitus. The precipitating pathophysiology in these cases could be partial blockage of a lactiferous duct by keratotic debris.[10] Most of the breast abscess in non lactating women are unilateral and require surgical drainage followed by antibiotics. The most common cause of breast abscess during non lactating period is Staphylococcus aureus. Bilateral breast abscess due to salmonella typhi and Brucella mellitensis have been reported. Escherichia coli has rarely been reported as a cause of breast abscess.

In this instant case the patient had previously undetected diabetes mellitus which was probably the risk factor for development of breast abscess. The patient was 41 years old, non-lactating and presented with unilateral breast abscess due to Escherichia coli which responded well to surgical drainage and antibiotics and simultaneous treatment of underlying diabetes with oral hypoglycemic agents. Tuberculous mastitis remains a problem in developing countries occurring most often unilaterally.[11] Breast abscess may be the initial presenting symptom of a underlying carcinoma or lymphoma and hence histological and cytological analysis should be carried out to rule out these serious conditions.[12,13]

Non lactating breast abscess is infrequent with obscure underlying risk factors. The patterns of organisms are often different from those occurring in lactating women but the isolates are often sensitive to the commonly used antimicrobials as in our case.

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REFERENCES

1. Dener C, Inan A. Breast abscess in lactating women. *World J surg*.,2003;27(2):130-133.
2. Gibberd GF. Sporadic and epidemic puerperal breast infections. *Am J Obst and Gynae*.1953;65(5):1038-1041.
3. Cunningham RM. Abscess in non-lactating breast. *Am Surg*.1967;33(4):339-343.
4. Silverman JF, Lannin DR, Unverferth M, Norris HT. Fine needle aspiration cytology of subareolar abscess of the breast. *Acta cytol*.1986;30(4):413-419.
5. Rizzo M, Gabram S, Staley C, Peng L, Frisch A, Jurado M, Umpierrez G. Management of breast abscess in non lactating women. *Am surg*.2010;76:292-295.
6. Rizzo M, Peng L, Frisch A, Jurado M, Umpierrez G. Breast abscess in non lactating women. *Am J Med sci*. 2009;338:123-126.
7. Abdelhadi MS, Bukharie HA. Breast infections in non-lactating women. *J Family Community Med*. 2005 Sep;12(3):133-7.

8. Sandhu GS, Gill HS, Sandhu GK, Gill GP, Gill AK. Bacteriology in breast abscess. *Sch J App*. Med. Sci., 2014;2(4e):1469-1472.
9. Efem SE. Breast abscesses in Nigeria: lactational versus non-lactational. *J R Coll Surg Edinb*. 1995 Feb;40(1):25-7.
10. Erdem G, Isik B, Karakas MH, Firat KF. Subareolar breast absces: Magnetic resonance imaging findings. *J breast health.* 2008;4:174-177
11. Cohen C. Tuberculous mastitis. A review of 34 cases. *S Afr med J.*1977;52(1):12-4.
12. Wrightson WR, Edwards MJ, McMasters KM. primary squamous cell carcinoma of breast presenting with breast abscess. *Am surg.*1999;65(12):1153-5.
13. Stanton MP, Cutress R, Royale GT. Primary non Hodgkin's lymphoma of the female breast masquerading as a breast abscess. *Eur J surg oncol*.2000;26(4):42.