Case Report

Clinical Presentation and Management of Severe Bilateral Duct Ectasia: A Case Report

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Abstract

Mammary duct ectasia is frequently asymptomatic and found incidentally during routine screening but its presentation is varied. In this case report, we highlighted a case of bilateral duct ectasia with extensive inflammatory changes in a parous, obese and diabetic middle aged woman. Her condition had been recurrent over several years, despite multiple courses of antibiotics and was increasing in severity. It was successfully treated with bilateral total ductal excision.

Keywords: Duct; ectasia; excision; mammary; total

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Introduction

Mammary duct ectasia is a benign condition typically seen in women with a history of lactation. It is characterised by dilatation of the subareolar ducts, larger than 1 mm, with a varying degree of inflammation and fibrosis due to the stasis of lipid rich secretions (1,2). It is often asymptomatic and found during breast screening. However, the presentation may vary considerably from mild tenderness with non bloody nipple discharge to a retroareolar mass complicated with infection resulting in abscess and fistula formation. Risk factors such as obesity, type II diabetes mellitus, hypertension, dyslipidaemia and smoking may contribute to a more severe presentation (3). Duct ectasia is more commonly seen in peri-menopausal or post-menopausal women due to loss of elasticity of the terminal ducts from reduced systemic oestrogen (4). It poses a diagnostic challenge when it is in a severe form as it may mimic a breast carcinoma (5).

Case report

A 39 year-old Para 3 presented with recurrent and worsening bilateral nipple discharge over the last 4 years. It developed soon after she stopped lactating her youngest child. Initially, it affected only the right breast but became bilateral after a few weeks. She did not have any history of bloody nipple discharge. She had been treated with several courses of antibiotics but her problem remained unresolved. She was an obese non-smoker, with diabetes mellitus, hypertension and

dyslipidaemia. Her maternal aunt was diagnosed with breast cancer at the age of 63 years old.

On examination, there was a right nipple abscess, bilateral retroareolar thickening, with no palpable breast lumps or palpable axillary lymph nodes. On self-manipulation, there was a variety of thick whitish to yellowish discharge from multiple ducts bilaterally (Fig. 1).

She underwent a mammogram and breast ultrasound. Mammogram revealed heterogeneously dense breasts but no dominant masses. Breast ultrasound detected a right breast abscess with bilateral prominent ducts, the largest measuring 4.3 mm at the 9 o'clock region of the right breast and 3.3mm at the 12 o'clock region of the left breast (Fig. 2).

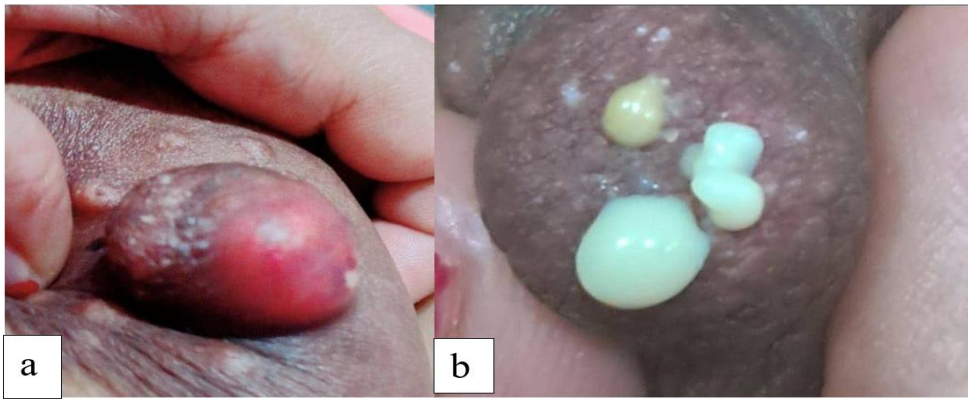

FIGURE 1: (a) Right nipple abscess and (b) thick discharge from the left nipple

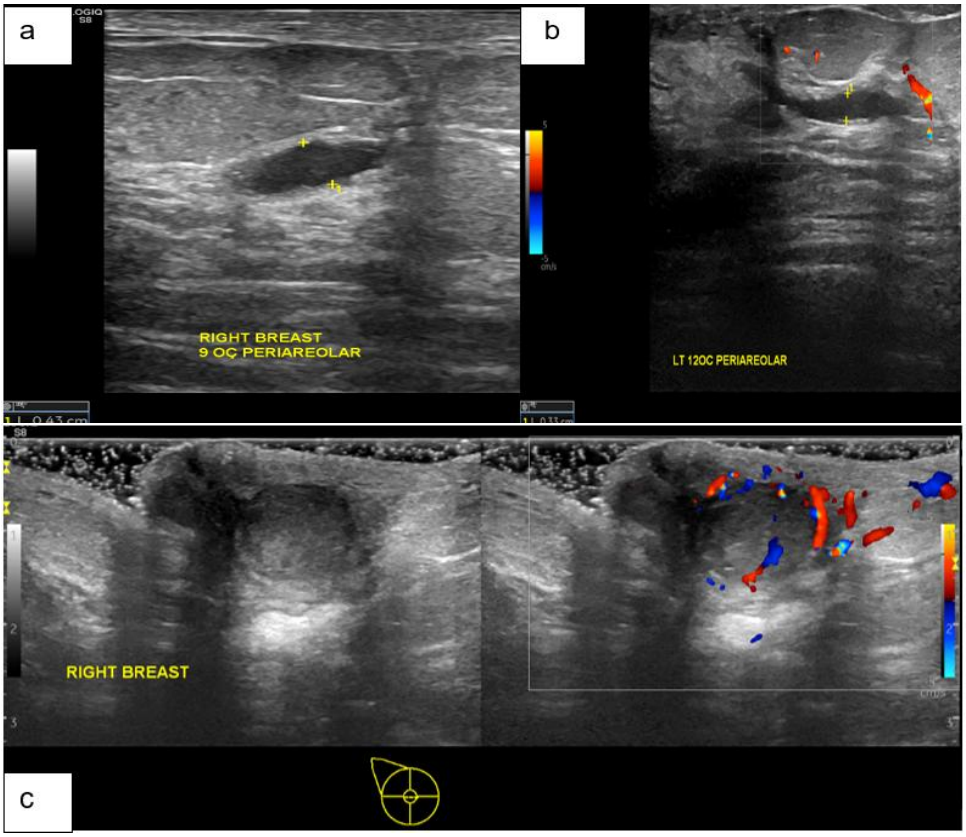

FIGURE 2: Breast Ultrasound Images; (a) Right breast: 9 o'clock distended duct; (b) Left breast: 12 o'clock distended duct; (c) Right breast abscess

Her serum prolactin levels were normal. The nipple discharge cultures were reported as mixed growth and negative for acid fast bacilli. She underwent bilateral total ductal excision due to severe persistent discharge. Histopathological examination confirmed the presence of bilateral duct ectasia (Fig. 3).

Post-operatively, she had preservation of bilateral nipple areolar complex (NAC) with no complications of ischaemic necrosis, retraction or inversion (Fig. 4) but had a mild degree of paraesthesia with total resolution of symptoms three months post-operatively.

Discussion

This case outlines the presentation of severe recurrent bilateral duct ectasia in a parous 39 year old obese woman with several co-morbidities. Although the aetiology of this disease in unclear, she had risk factors such as obesity, diabetes mellitus, hypertension and dyslipidaemia which were the likely contributors to her severe and recurrent presentation (6,7). Adiposity in general is associated with chronic low grade inflammation, altered immune response and hormonal dysregulation which further exacerbate

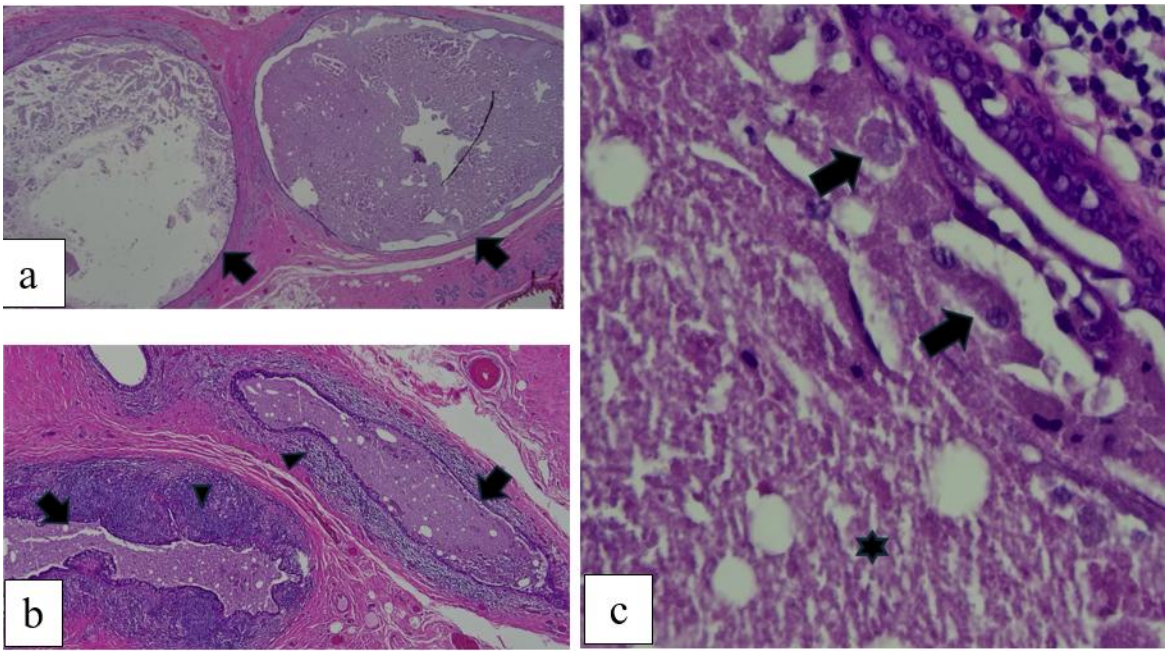

FIGURE 3: Histological assessment of the excised ducts. (a & b) Distended ducts (arrowed) & periductal inflammation (arrow head) with lymphocytes, plasma cells and histiocytes seen under H & E stain, magnified 10x; (c) Dilated ducts filled with luminal eosinophilic secretions (*) containing foamy macrophages (arrowed) seen under H & E stain, magnified 40x (H & E: Haematoxylin & Eosin)

FIGURE 4: One month post-operative appearance with good symmetrical cosmesis

ductal inflammation leading to a more severe fibrosis and nipple discharge (8). Sclerosing adenosis is a proliferative change of the terminal duct lobular unit where the lobular unit is distorted by fibrosis without atypia. While both sclerosing adenosis and duct ectasia may present together such as in this case, this occurrence generally is incidental and does not demonstrate a causal relationship (9). This is further supported by a study where pathological entities associated with fibroadenoma showed that 23% had sclerosing adenosis and 17.7% had duct ectasia, where no link between the two were observed (10).

As a severe presentation of duct ectasia may mimic a breast carcinoma (5), a systematic approach adopting the triple assessment and incorporating a detailed history, clinical examination including ultrasonography and mammography are necessary. Mammary duct ectasia is a benign disease which is characterised as an inflammatory process rather than a neoplasia where cellular atypia or dysplasia is typically seen. The diagnosis of duct ectasia is made when the intraluminal width of a lactiferous duct measures wider than 1 mm (1,2) and in her case, she fulfilled this criteria in both her breasts. She also had significant periductal inflammation as demonstrated in Fig. 3.

Although the symptoms of breast cancer and duct ectasia may have some similarities, duct ectasia is not a precursor to the development of cancer though these conditions may co-exist. This is further evidenced by a low rate of detection of malignancy; only 8.1% (11), following surgical excision of pathological nipple discharge.

Management of duct ectasia mainly depends on the clinical presentation and progress of the disease. Mild or early symptoms with dilated ducts and minimal inflammation can be treated conservatively with warm compression and supportive bras to reduce mastalgia (4). In this severe case, as she had completed her family, she agreed to undergo a more aggressive surgical approach, which was bilateral total duct excision (TDE), which is also known as Halsted's procedure or macrodochectomy (12,13). A woman in the childbearing age will need to be counselled that lactation will not be possible after this type of surgery. The NAC may be paraesthetic post-operatively; with the most severe complication resulting in ischaemic necrosis which will require NAC excision. In severe duct ectasia, such as this, surgery would be necessary. This is because, in addition to alleviating symptoms, histopathological examination of the excised ducts would be possible, to rule out a malignancy (14). Post-operatively, this patient remained well at one year follow-up.

Conclusion

Mild or moderate duct ectasia are often self-limiting. However, when severe, debilitating symptoms will occur and are often prolonged and recurring. It is imperative for us to identify the risk factors associated that may contribute to the severity of the disease and advise modifying them accordingly. The surgical choice for total ductal excision in this case not only resolved her symptoms but also facilitated the exclusion of an underlying malignancy. The management needs to be individualised while taking into consideration the severity of the disease, the risk of malignancy and whether there are plans for future pregnancies and lactation.

Conflict of interest: The authors declare no conflicts of interest.

Patient consent: The patient had provided consent for the use of her images for academic purposes.

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