Clinical Case Reports International

Case Presentation
Published: 29 Jul, 2019

Hyperprolactinemia Leading to Mammary Duct Ectasia in a Pre-Menopausal Female

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Abstract

Mammary duct ectasia is described by persistent inflammation and changes of fibrosis which directs to blockage of debris within the mammary duct. Its characteristics imitate to that of invasive carcinoma. It mostly occurs in females at menopause or after menopause, but rare in children and men. Here we present a case report 37 years old lady having hyperprolactinemia, who came with complain of the stiffness of breast and nipple discharge of milk since 12 to 13 years. Bilateral mammography showed increased density under the left nipple without calcification and dominant mass. Ultrasound of breast evidenced few abnormally dilated ducts in the retro areolar region of left then right nipple. Therefore, the patient was diagnosed with duct ectasia. It is concluded that hyperprolactinemia can also lead to mammary duct ectasia even in women even at a pre-menopausal age.

Keywords: Mammary duct ectasia; Hyperprolactinemia; Nipple discharge

Introduction

Mammary duct ectasia is an inflammatory disorder in breast [1]. The pathology behind this includes expansion of the main ducts related to intraluminal blocks of histocytes and periductal inflammation [2]. The rate of occurrence of mammary duct ectasia can vary from 1.1% to 75.0%, according to the investigative methods utilized, which can be clinical, histopathological, or based on necropsy [3]. Mammary duct ectasia mainly influences those females who are undertaking menopause or about to start menopause but can also take place in younger females, males, and infants [1].

Smoking is a dangerous feature for duct ectasia. It was discovered that smokers were three times more likely to develop the state of duct ectasia than non-smokers [4]. This ailment is leading cause among other common reasons of bloody nipple discharge and sub-areolar masses, radiologically and medically imitating persistent carcinoma, while Nipple discharge, in turn, is the third significant frequent sign nearing to breast health centers, chasing lumps and pain [5-7].

Here, we present a case report of a female who developed duct ectasia before menopausal age with hyperprolactinemia.

Case Presentation

A 37-year-old woman known case of hypertension came at Doctors Hospital and Medical Centre Lahore Punjab, Pakistan with a history of hypertension and stiffness of breast along with the discharge of milk since last 12 to 13 years. On compression of her breast, nipple discharge of milk more on the left side was also observed. The nipple discharge was often drenching through shirts within a few minutes of throwing on them. The menarche of the patient took place at an average age, but with irregular menstrual periods. The patient married at the age of 21-year. The patient had two children. Among those children, the elder child had correctly breastfed, but the younger child had not been appropriately breastfed. The younger child breastfeeding was stopped due to increased prolactin level and bloody nipple discharge. The patient had never been smoked and did not have a family history of cancer.

On examination endocrinology report for prolactin levels was first done. Report showed prolactin level was 79.5 ng/ml (reference range: 5.18-26.53 ng/ml for female). Mammography was performed and evidenced by increased density under the left nipple. However, no dominant mass or suspicious calcification was seen. There was no architectural distortion of the parenchyma, while, lymph nodes were noted in both axillae (Figure 1). Ultrasound of breast exhibited few dilated ducts

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Received Date: 07 *Jun 2019*
Accepted Date: *23 Jul 2019*
Published Date: *29 Jul 2019*

Citation:
Samad N, Hafeez K. Hyperprolactinemia Leading to Mammary Duct Ectasia in a Pre-Menopausal Female. Clin Case Rep Int. 2019; 3: 1111.

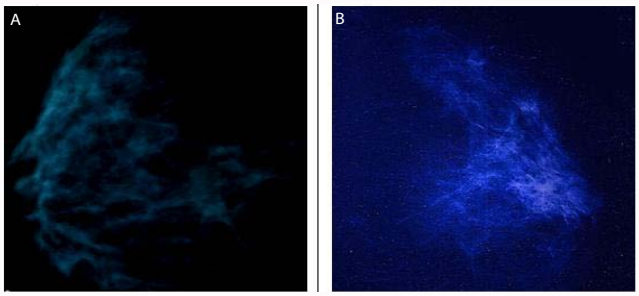

Figure 1A: Mammography of right breast.
Figure 1B: Mammogram of left breast illustrating increased density under the left nipple without suspicious calcification and architectural distortion of the parenchyma.

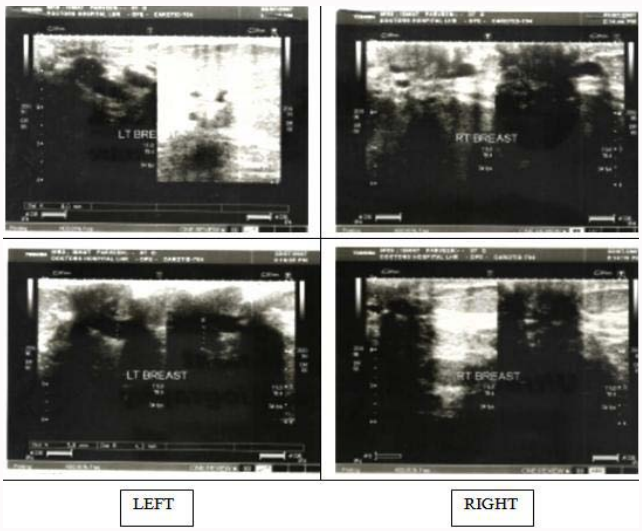

Figure 2: Ultrasound showing dilated ducts in the retroareolar region of both breasts, however abnormally dilated under the left nipple, largest measuring about 8 mm.

in the retromolar region of both breasts, however abnormally dilated under the left nipple, largest measuring about 8 mm (Figure 2). Based on clinical signs and symptoms and clinical tests findings, the patient was diagnosed to have duct ectasia.

Discussion

Mammary duct ectasia is a seditious (causing inflammation) syndrome in the breast which is linked with inflammation and periductal fibrosis of differing extent [8]. This illness is also recognized as comedomastitis, plasma cell mastitis, and cholesterol granuloma. Duct dilatation is generally not indicated in the early stages [9].

When it is indicative, mainly general medical appearance is mammary discharge [10]. In most of the incidences, no clear abnormalities are present, but in afterward phases, tender sub-areolar masses along with skin renunciation happen, which can be detected as infiltrative carcinoma, which is wrong. The identification of Mammary Duct Ectasia is generally medical. The irregular thickening of the sub-areolar breast tissue and micro-calcifications is mostly identified via mammography. These thickenings can be imitated as carcinoma [11]. The diameter of ducts greater than 5 mm can be identified and assessed with the help of ultrasonography [12]. Ductography is frequently performed for recognizing ductal dilatation with the multifocal luminal barrier in a dropped way, but it is bound as an investigative way for Mammary Duct Ectasia [13]. Histopathologically, the peri-ductal inflammation is analyzed. The lymphocytes, plasma cells, or foamy histiocytes are present more often. The early stage of Mammary Duct Ectasia is illustrated through the existence of expansion of terminals of duct [14].

Afterward, the inflammation is substituted with fibrosis. Duct ectasia rarely gets better devoid of cure or by means of the utilization of temperate antibiotics and compresses. If the warnings of ectasia do not go biopsy is frequently needed, and the anomalous duct would be eliminated via surgery [9]. Constant or repeated disorders are handled with centered surgical removal of the abnormal ducts below the nipple [15,16]. A right way of surgery for duct ectasia is image-guided surgery by ductal endoscopy [17]. There are two theories with respect to the pathology of Mammary Duct Ectasia [18].

First, the main pathological route is believed to be unclear with degeneration of the ducts and glands, pursued via ducts expansion, directing to the apathy of secretion, duct burst, and inflammation. The second contributing incident is offered to exist as an inflammatory progression; periductal inflammation being the primary anomaly, pursued by duct sclerosis, obliteration, and duct ectasia. Alternatively, the etiology of duct ectasia is still unidentified. Other influencing factors consist of squamous metaplasia of the terminal duct epithelium, phenothiazine treatment, cigarette smoking, bacterial growth, and hyperprolactinemia. Tobacco smoking is also a hazardous cause for ductal ectasia. While another study revealed that bacterial infection also leads to duct ectasia [19-21]. However, this evidence is not enough as a cause of this disorder. An earlier study illustrated a relationship involving unusual prolactin discharge and Mammary Duct Ectasia [22]. Shousha et al. [23] also analyzed that there is a linkage between specific hypothalamic/pituitary ailments, likely correlated with prolactin secretion and progress of mammary duct ectasia in postmenopausal patients. It is suggested that hyperprolactinemia may also lead to mammary duct ectasia. However, further studies are needed to elucidate the process, so that such kind of disorders can be prevented.

Conclusion

It is concluded that there is a strong relationship between hyperprolactinemia and mammary duct ectasia in a pre-menopausal age also. Increased prolactin level induces the various stages of mammary duct ectasia. Hyperprolactinemia increases the inflammation in mammary ducts. As a result, different signs and symptoms of mammary duct ectasia develop.

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