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Case Report

Surgery Section

Intraductal Papilloma of the Breast: A Case Report

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ABSTRACT

Intraductal papilloma of the breast is a rare benign tumour. The polypoid lesions arising from the nipple surface include papillomas and fibroepithelial stromal polyps. These lesions must be distinguished from malignant nipple lesions, such as Paget's disease of the nipple or malignant breast conditions involving the nipple. Solitary papillomas (solitary intraductal papillomas) are single tumours that often grow in the large milk ducts near the nipple. They are a common cause of clear or bloody nipple discharge, especially when it comes from only one breast, and can be felt as a small lump behind or next to the nipple. Papillomas may also be found in small ducts in areas of the breast farther from the nipple. Multiple papillomas, which are growths that are less prone to generate nipple discharge, were present in this case. In papillomatosis, there are very small areas of cell growth within the ducts, but they aren't as distinct as papillomas are. In order to distinguish between these disorders, a thorough clinical examination and imaging are essential. This case report describes a 36-year-old female who presented with swelling from the left nipple. Sonography of the left breast revealed a dilated duct in the left retro-areolar region with a focal isoechoic component within the duct {American College of Radiology Breast Imaging Reporting and Data System (ACR BI-RADS 4B)}. The patient underwent core excision of the duct, and histopathological analysis confirmed the diagnosis of papilloma with changes of adenosis without atypia.

Keywords: Breast duct, Ductography, Papillomatosis, Polypoid lesion, Retro-areolar

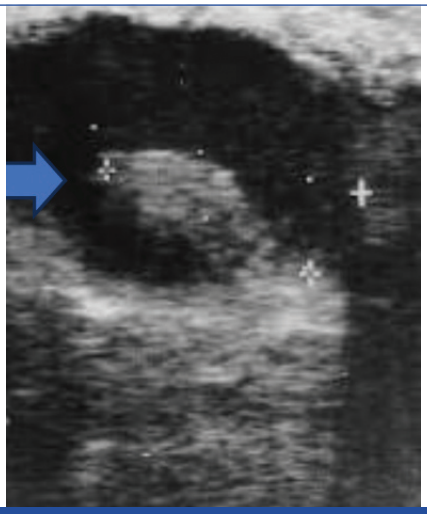
CASE REPORT

A 36-year-old female presented to the outpatient department with complaints of pain in the left nipple and areola, which was followed by the development of a swelling over the left nipple. The swelling was first noticed three months ago, initially small, and gradually increased in size. The pain started as a pricking sensation confined to the nipple and eventually progressed to the circumareolar region. The patient had no associated breast lump, nipple discharge, or weight loss. There was no family history of breast or ovarian cancers, and her first childbirth was at the age of 28 years, during which she breastfed for one year. There was no prior history of using oral contraceptives. On examination, the patient's vitals showed a heart rate of 76 beats per minute, and a blood pressure of 120/80 mmHg. Clinically, a 2×2 cm swelling was observed over the left nipple. No crusting was observed on the swelling, and the surrounding skin appeared normal. She stated that her menstrual cycles are regular. The findings of inspection were confirmed upon palpation. There was no rise in temperature. The swelling was firm in consistency with well-defined margins. No evidence of nipple discharge was observed. There was no tenderness, and no other palpable lump was found in the bilateral breast or axilla. [Table/Fig-1] displays the routine lab investigations.

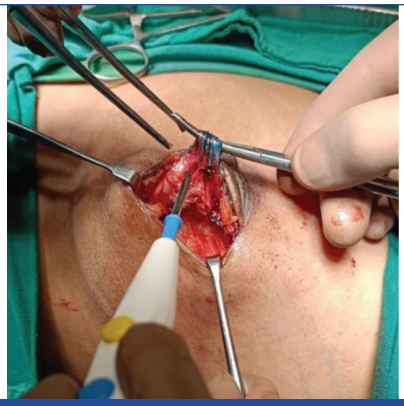
Tests	Value	Normal range
Haemoglobin (g/dL)	11.9	For males: 14 -18 For females: 12 -16
TLC (/µL)	7600	4000-11000
Platelet count (/µL)	274000	150000-400000
Total bilirubin (mg/dL)	0.62	0.1-1.2
Total protein (gm/dL)	8	6.0 - 8.3
Serum albumin (gm/dL)	4.5	3.4 - 5.4
Urea (mg/dL)	20	5 - 20
Creatinine (mg/dL)	0.58	0.7 - 1.3
Sodium (mmol/lit)	138	135 - 145
Potassium (mmol/lit)	4.45	3.5 - 5.2
PT (secs)	11.9	11 - 13.5
INR (ISI)	0.05	1.1 or below

[Table/Fig-1]: Routine lab investigations.
TLC: Total leukocyte count, PT: Prothrombin time, INR: International normalised ratio

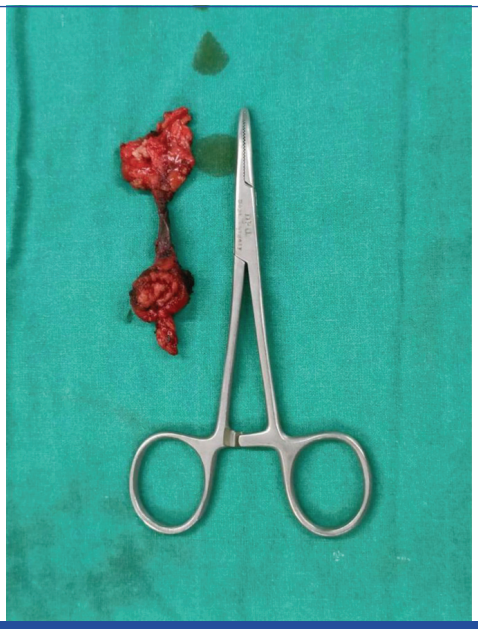
The Ultra-sonography report revealed a dilated left lactiferous duct measuring 4.5 mm in diameter in the left retro-areolar region [Table/Fig-2]. A focal isoechoic component within the duct suggested an intraductal papilloma, classified as ACR BIRADS 4B with moderate suspicion of malignancy. Due to financial limitations, no magnetic resonance imaging (MRI) or mammography was done. Based upon findings of clinical examination and radiological investigations, and considering the small size of the lesion, it was decided to remove it in toto. The patient underwent core excision of the lesion. An incision was made over the swelling, and the duct was isolated and cannulated with an 18G intracath. Methylene blue was injected, and the stained swelling and lactiferous duct were excised in toto [Table/Fig-3,4].



[Table/Fig-2]: Ultrasound image of intraductal papilloma showing dilated duct in the left retro-areolar region with a focal isoechoic component within the duct.



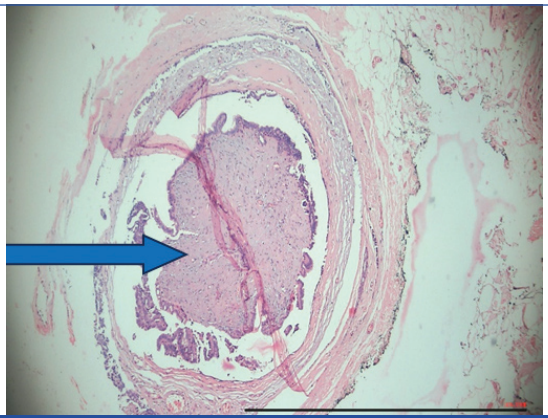
[Table/Fig-3]: Intraoperative picture of a dilated duct connecting to the papilloma.



[Table/Fig-4]: Excised specimen of intraductal papilloma.

The biopsied specimen was sent for histopathological examination, which revealed the presence of papilloma with changes of adenosis but without atypia [Table/Fig-5]. Cannulation of the lactiferous duct was challenging. The surgery was tricky due to the need to take care of other lactiferous ducts. Restoration of the nipple morphology was justified because of the patient's childbearing age group.

The patient had a three-month follow-up. There was no redness or nipple discharge, and the scar was healing well.



[Table/Fig-5]: Histopathological examination of intraductal papilloma (H&E stain, 40x). (Arrow marked in blue is suggestive of the Cuboidal epithelium lined lesion comprising of fibrous tissue and blood vessels).

DISCUSSION

Intraductal papilloma is a rare benign breast lesion of the ducts, with an incidence of 1-3% of breast biopsy specimens. It is a benign tumour arising from the ductal system of the breast due to abnormal proliferation of the epithelial cells lining the ducts. It may occur as a solitary lesion, or multiple papillomata may occur. It is commonly diagnosed in perimenopausal women and commonly manifests as a palpable mass, nipple discharge, or breast pain. A papilloma is either a broad-based or pedunculated polypoidal growth. They are divided into two types based on their location: central or peripheral. Central intraductal papilloma typically involves the large ducts present in the subareolar region. Solitary intraductal papilloma usually involves the area on the posterior aspect of the nipple, affecting the central duct, whereas multiple papilloma commonly involves the periphery of any quadrant of the breast, affecting the peripheral ducts [1]. Intraductal papilloma can develop in women of all ages who are exposed to risk factors such as the use of oral contraceptives, women undergoing hormonal replacement therapy, or those exposed to oestrogen for life, with a positive family history for intraductal papilloma [2].

Symptomatic patients often present with spontaneous discharge from the nipple, either bloody or clear in nature, while some present with palpable masses. However, most cases of intraductal papilloma are asymptomatic [1]. Timely evaluation of intraductal papilloma is essential to rule out the possibility of accompanying cancer [3]. Intraductal papilloma is known as a high-risk preneoplastic condition because it may lead to Atypia and Ductal Carcinoma In Situ (DCIS) and even cancer [1]. The recommended treatment is the surgical excision of the tumour, i.e., complete tumour removal [4], in the form of lumpectomy [5]. An intraductal papilloma can be seen in mammograms, ultrasonography, galactography, and MRI, but not all imaging techniques are required. Mammography, ultrasound, and MRI are employed for imaging assessment. The first imaging modality done for spontaneous single duct nipple discharge is mammography. Galactography or ductography is done to detect an intraductal papilloma, where an abrupt filling defect with smooth or lobulated contours can be seen [1].

Tissue sampling is necessary for a definitive diagnosis, as radiologic findings and pathologic analysis should be concordant [1]. Various biopsy methods are available for tissue sampling, such as vacuum-assisted, core needle, and open tissue biopsy. Of these methods, vacuum-assisted and core needle biopsy are more preferable, as they allow for large tissue samples to be excised for pathological examination. Sampling by fine-needle aspiration technique is not preferable, as it uses a thinner needle leading to very little tissue sampling [6]. Open tissue biopsy is also not suggested due to its invasive nature, leading to potential complications [7]. Surgical excision is crucial due to the risk of progression of intraductal papilloma into DCIS or Atypical ductal hyperplasia upon excision [1]. The overall prognosis of intraductal papilloma is excellent, as seen in a study by Kiran S et al., where "88.9% of the intraductal papillomas were found to be without atypia, while 9.2% showed atypia" [8]. Local recurrence after surgical excision is low, as another study found the rate of local recurrence to be as low as 2.4%. According to a consensus committee of the College of American Pathologists, women with this lesion have a relative risk of 1.5-2 times for developing invasive breast carcinoma in their lifetime. The recurrence rate after surgical excision of intraductal papilloma is very low [9]. Complications associated with intraductal papilloma are rare. Postoperative complications like bleeding, infection, and fat necrosis can possibly be seen [10].

CONCLUSION(S)

Intraductal papilloma of the breast is a rare benign tumour that requires careful evaluation. In the present case, sonography of the left breast revealed a dilated duct in the left retro-areolar region

with a focal isoechoic component within the duct. The patient underwent core excision of the duct, and histopathological analysis confirmed the diagnosis of papilloma with changes of adenosis without atypia. Close follow-up is essential to detect any potential complications or recurrences.

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