

Case Report

Case report on a less frequently encountered tumor in breast – Nipple adenoma

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Abstract Nipple adenoma is an uncommon benign epithelial tumor which can occur in breast. Many a time, it mimics Paget's disease of nipple clinically and may be mistaken as invasive ductal carcinoma. Having a sound knowledge of this entity will go a long way in the management protocol of such cases. We define one such case here.

Keywords: Adenoma, benign, breast, nipple

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INTRODUCTION

A rare type of tumor with a benign proliferation of lactiferous ducts in the mammary gland gives rise to nipple adenoma (NA). It is reported that these tumors are encountered in <1% of breast specimens.^[1] It can be seen in a wide age group from adolescents to elderly people but is more commonly seen in perimenopausal age group. This tumor commonly affects females than males. In males, there are <5% of reported cases.^[2,3] We hereby report a case of NA in a 53-year-old woman.

CASE REPORT

A 53-year-old postmenopausal woman presented with a nodule on her right nipple since 10 months. There was no history of pain/tenderness/redness/itching any discharge. There was neither any palpable mass detectable in her breast on clinical examination nor any surface ulceration. The other

breast was normal and did not have any similar complaints. The lesion was excised and sent for histopathology. On gross examination, the skin covered soft tissue bit measured 1.5 cm × 1 cm × 1 cm. Cut surface through the nodule showed a pale white homogenous area. On microscopy, the unencapsulated lesion comprised of proliferating ducts in adenomatous and papillary pattern [Figure 1]. The ducts had a bilayered lining with inner epithelial and outer myoepithelial cell layers [Figure 2]. There was evident epithelial hyperplasia in most of the ducts. Few dilated ducts with lumen containing eosinophilic secretions [Figure 3] were noted along with scattered keratotic cysts. The surrounding stroma showed variable fibrosis and chronic inflammatory infiltrate. Based on these histological findings, a diagnosis of NA was made. The patient is now symptom free and happy post excision of the nodule but is kept under yearly follow-up and advised to report in case of the development of any new symptom.

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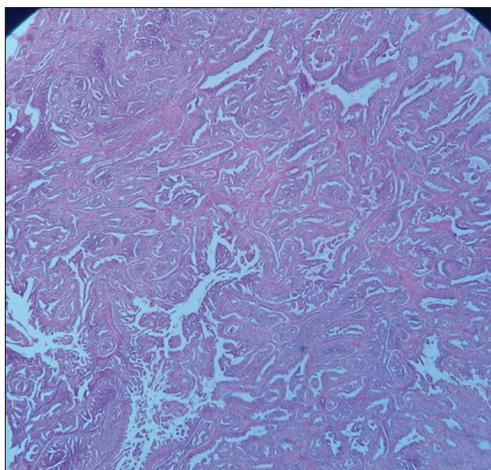


Figure 1: The tumour tissue arranged in papillary and adenomatous pattern (H&E, 4x)

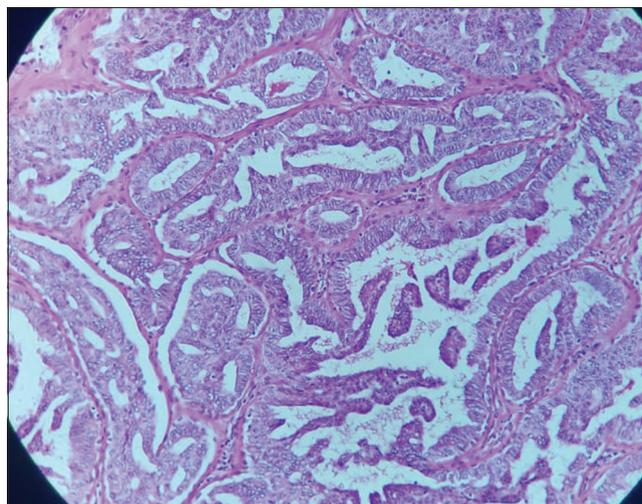


Figure 2: The ducts lined by inner epithelial and outer myoepithelial layer (H&E, 40x)

DISCUSSION

Adenomas are unusually encountered benign epithelial tumor of the ducts in nipple. Jones in 1955 first described this entity as “florid papillomatosis of the nipple ducts.”^[4] From then on, this tumors is known by various synonyms such as erosive adenomatosis of the nipple, subareolar duct papillomatosis of the nipple, florid adenomatosis of the nipple, superficial papillary adenomatosis of the nipple, papillary adenoma nipple, and nipple duct adenoma. These tumors can affect people in the age range of 20–87 years with an average age of 43 years.^[5] The lesion is almost always unilateral in presentation with two-thirds of patients presenting with nipple discharge and one third presenting either with nipple erosion or a nodule.^[1] This entity often leads to clinical diagnosis of Paget’s disease.

From a histopathologist’s point of view, NA can present with a wide plethora of morphology. The major histologic pattern of NA encountered is a ductal proliferation of gland-like structures within the stroma of the nipple. These proliferating units have a fairly circumscribed borders but are unencapsulated. Like in any benign lesion, in this tumor too the ducts are lined by double layers of outer myoepithelial and inner epithelial cells. There may be sclerosis and fibrosis which may distort glands thus simulating invasive pattern. Also when a pseudoinfiltrative pattern is prominent, the proliferating epithelium streams into the stroma featuring “infiltrating epitheliosis.”^[6] Apart from these, the tumor may also exhibit apocrine metaplasia, keratin cysts, ductal hyperplasia, cystic dilation, papillary hyperplasia, adenosis, squamous metaplasia in varying degrees. It is of interest to note that the *WHO Classification of Tumours of the Breast* describes four most

commonly recognized histological subtypes of NA as (i) adenosis type, (ii) epithelial hyperplasia or papillomatosis type, (iii) sclerosing papillomatosis or pseudo-infiltrating type, and (iv) mixed type;^[7] although these entities have no significance prognostically. The presence of bilayered lining epithelium is the most important characteristic histological feature that helps distinguish NA from invasive or *in situ* disease. In cases of ambiguity in the presence of basal myoepithelial cell layer, Immunohistochemical markers aid in reaching at the final diagnosis. Myoepithelial markers like p63, calponin 1, p40, h-caldesmon, alpha-smooth muscle actin can be used to highlight and confirm the presence of outer myoepithelial cells. Newer studies have suggested an epigenetic modifier (5-hydroxymethylcytosine) as a putative marker for NA.^[8] However, in this case, since the histology clearly delineated myoepithelial cells, there did not arise a need for immunohistochemistry markers.

Owing to the occurrence of sclerosis, necrosis and a pseudo-invasive appearance on histology due to fibrosis, NA can be misinterpreted as invasive ductal carcinoma. In such scenarios, immunohistochemical markers that highlight myoepithelial cells help to solve this diagnostic dilemma.

Complete surgical excision of the lesion is the standard management protocol of NA. Although these are benign tumors, local recurrence is known to occur in cases of incomplete excision. Literature survey quotes about 14% of NA to be associated with cancer.^[9] In most cases, carcinoma was present at the time of excision of NA. There are also instances reported wherein carcinoma has developed after many years at the site of excised NA.^[10]

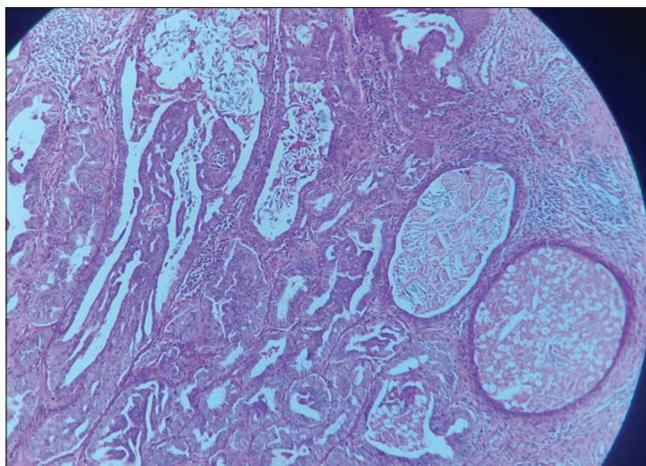


Figure 3: The dilated ducts filled with eosinophilic secretions (H&E, 40x)

CONCLUSION

The accurate diagnosis of breast diseases is of great importance to both patients and clinicians. Having a precise diagnosis not only influences the treatment protocol and prognosis but also on financial and psychosocial aspects. In this regard, a clear vision by a pathologist is of utmost significance.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will

not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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