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Concurrent presentation of tubular adenoma and fibrocystic disease in the same breast: a rare case report

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Abstract
Tubular adenoma is a rare benign epithelial neoplasm occurring mainly in premenopausal women. Tubular adenoma constitutes about 0.13% to 1.7% among benign breast tumors. Tumor size typically ranges between 1 to 10 cm and very rarely exceeds 5 cm. With the rarity of the pathology comes diagnostic dilemmas, especially due to the identical clinical features when compared with a fibroadenoma or phyllodes tumor. Tubular adenoma doesn't have a true capsule but it is sharply defined. In contrast to fibroadenomas there is a scant periductal stroma. The differential diagnosis are lactating adenoma, sclerosing adenosis and microglandular adenosis. Malignancy in association with tubular adenoma is rare and have been described in only few cases in literature. Here we present a case of 14 year old adolescent girl with rare occurrence of combination of tubular adenoma with fibrocystic changes in the same breast.

Keywords: Tubular adenoma, fibrocystic, adolescent

Introduction

Tubular adenoma constitutes about 0.13% to 1.7% among benign breast tumors. Tumor size typically ranges between 1 to 10 cm and very rarely exceeds 5 cm. With the rarity of the pathology comes diagnostic dilemmas, especially due to almost identical clinical features when compared with a fibroadenoma or phyllodes tumor [1].

Tubular adenoma is a rare benign epithelial neoplasm occurring mainly in premenopausal women. It is considered to be a variant of fibroadenoma with similar histogenesis [2].

Clinically tubular adenoma presents with a palpable well circumscribed mass but on imaging these neoplasms appear as noncalcified fibroadenoma [3].

In the literature associations of tubular adenomas are seen usually with fibroadenomas or Phyllodes tumor. Here we present a case of a 14 year old adolescent girl with rare occurrence of combination of tubular adenoma with fibrocystic changes in the same breast.

Case Report

A 14 year old adolescent female came with complaints of lump in left breast since four months initially small in size then increased to the present size. On clinical examination multiple lumps were noted largest measuring 5x4cm in upper outer quadrant, firm in consistency with no lymph node enlargement. Nipple areola complex appears normal. Ultrasound done revealed three well defined oval heterogeneously hypoechoic lesions in the left breast at 2-4 o'clock position, 2cm from nipple with BIRADS category 3. A clinical diagnosis of fibroadenomas were considered. Surgical excision of the lumps were done and sent for histopathological evaluation.

Grossly three lumps were received largest measuring 5.5x4x2.2cm (Fig 1).

Cut surface showed a well circumscribed nodule which is lobulated with slit like spaces. Smaller lump was measuring 4.5x2.2x1.4cm. Cut surface appears grey white homogenous. Smallest lump was measuring 3.5x1.8x0.7cm.Cut surface was grey white myxoid. (Fig 2).

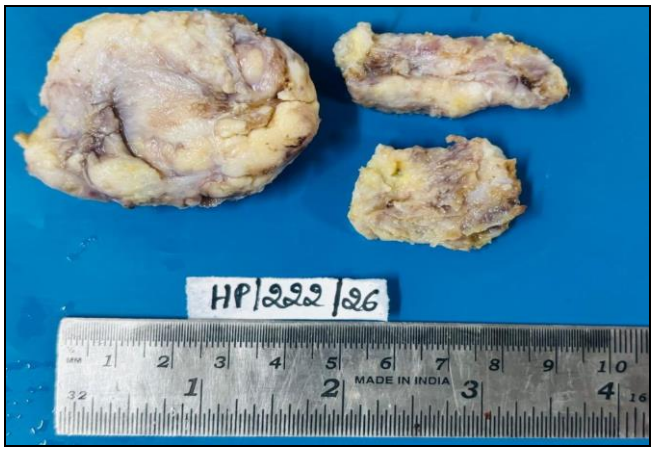

Fig 1: Outer surface of three breast lumps

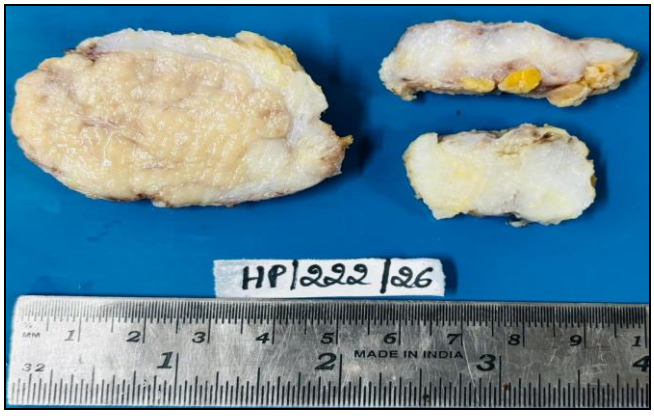

Fig 2: Cut Surface of three breast lumps

Microscopically largest breast lump showed well demarcated tumor composed of densely packed tubules with minimal intervening stroma lined by inner ductal and outer myoepithelial layer. No evidence of atypia/malignancy in the sections studied. (Fig 3).
Sections from smaller two breast lumps showed features of adenosis, fibrosis and cystic changes. (Fig 4).

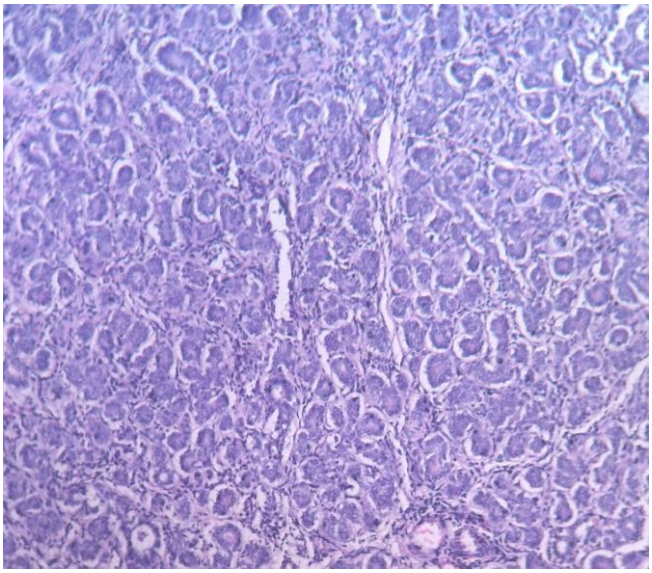

Fig 3: Microscopy of tubular adenoma (H & E, 100X).

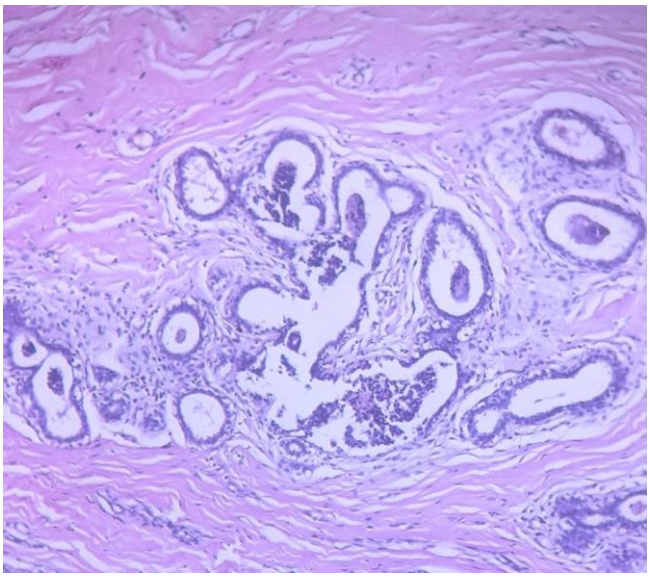

Fig 4: Microscopy showing fibrosis and cystic changes (H & E, 100X).

Discussion

Tubular adenoma was first described in 1968 by Persaud *et al*. The first case was studied by aspiration cytology, light and electron microscopy was used and reported by Moross *et al* in 1983 [4].
Tubular adenoma doesn't have a true capsule but it is sharply defined, In contrast to fibroadenomas there is a scant periductal stroma. The differential diagnosis are lactating adenoma, sclerosing adenosis and microglandular adenosis [5].
Due to their benign nature and increasing size they are managed by surgical excision. No follow up has been reported in the literature except for one case with a 18 month follow up with no recurrence [3].
In the study reported by Chang *et al* 33 cases of tubular adenomas were studied only six cases had size more than 5cm largest being 8.5cm [1].
Fibroadenomas are the most common benign breast lumps which maybe single or multiple in the same or bilateral breasts which arises as a result of hyperplasia of normal lobules [6].
The pathogenesis of fibroadenoma is MED12 mutations associated with dysregulated oestrogen signalling and extracellular matrix organisation except myxoid type which shows PRKAR1A gene mutation. Phyllodes tumour originates from intralobular and periductal stroma with epithelial stromal interactions. Recurrent MED 12 mutations in stromal cells in phyllodes tumor supports shared pathogenesis with fibroadenoma [7].
Immunohistochemistry is not routinely required for diagnosing tubular adenomas. In case of confusion with tubular carcinoma or co existing carcinoma myoepithelial markers such as Smooth Muscle Actin(SMA).,p63,CK 5/6 and calponin can be used [2].
Verma *et al* reported a case of tubular adenoma co existing with fibroadenoma in a 21 year old female in upper quadrant of right breast [4].
According to Ibisevic *et al* they reported combination tumor of tubular adenoma with borderline phyllodes tumor in a 65 year old female in the left breast at the central location [8].
Kalipatnapu *et al* reported giant tubular adenoma with a concurrent fibroadenoma of the breast. Only two cases of giant tubular adenoma have been reported in literature. Tubular adenoma is a pure adenoma similar to pericanalicular fibroadenoma predominantly seen in young women or those in reproductive age group [9].
Malignancy in association with tubular adenoma have been described in few cases in literature. Saimura *et al* revealed ductal carcinoma insitu within tubular adenoma tissue [10]. Domoto *et al* showed co-localization of tubular adenoma with invasive ductal carcinoma [11].

Conclusion

Tubular adenomas of the breast are a rare benign neoplasm commonly confused with fibroadenoma due to its similarity in clinical presentation and pre operative evaluation. Histopathological examination is necessary for definitive diagnosis. The development of tubular adenoma along with a fibrocystic change as seen in our case is a very rare occurrence. Although tubular adenomas are rare it should be considered in the differential diagnosis of benign breast lumps.

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