



**ORIGINAL RESEARCH PAPER**

**Histopathology**

**SYNCHRONOUS OCCURENCE OF COMPLEX FIBROADENOMA WITH TUBULAR ADENOMA IN AN EARLY MIDDLE AGE WOMEN A RARE CASE REPORT**

**KEY WORDS:** Complex fibroadenoma, Tubular adenoma.

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**ABSTRACT**

**Introduction:** Fibroadenoma is the proliferation of both epithelial and stromal components of breast. Fibroadenomas showing atleast one of the histological features of sclerosing adenosis/ cystic change/calcification/papillary apocrine change are termed as “complex fibroadenoma”. Tubular adenoma (Pure adenoma), a rare benign epithelial neoplasm accounting to 0.13-1.7% of benign breast lesions is considered as a variant of pericanalicular fibroadenoma. It is characterized by prominent or florid adenosis like epithelial proliferation. Synchronous occurrence of complex fibroadenoma with tubular adenoma in the same breast in adolescent female is rare. **Case Report:** A 30 year old female presented to Surgery OPD with complaints of left breast lump for 10 years. On physical examination a non-tender, mobile, firm mass measuring 7x5 cm was palpable in upper inner quadrant of left breast. Skin over swelling was normal. No axillary lymph nodes were palpable. Sonomammography was suggestive of BIRADS type 3- ?fibroadenoma. FNAC features were suggestive of fibroadenoma. Excision of lump was done. Gross examination showed a globular tissue measuring 6x4x3.5cm. Cut surface showed two well circumscribed nodules showing slit like spaces. Microscopic examination showed a complex fibroadenoma with features of adenosis, cyst formation, fibrosis, apocrine changes along with a tubular adenoma component. **Conclusion:** Synchronous occurrence of complex fibroadenoma with tubular adenoma is an exceptional phenomenon. Surgical excision followed by histopathological examination is required for definitive diagnosis as clinical and imaging features of both resemble similar.

**INTRODUCTION**

Fibroadenoma the most common breast tumor in adolescent and young women (1), characterised by biphasic component comprised of glandular epithelium and specialized interlobular stroma of the terminal ductal lobular unit. can show a spectrum of histologic appearances; generally uniform in stromal cellularity and distribution of glandular and stromal elements within a given lesion (an important distinction from phyllodes tumor) Fibroadenomas with hypercellular stroma and prominent intracanalicular pattern can show morphologic overlap with benign phyllodes tumors.

Complex FAs are defined as FAs with atleast one of the histologic characteristics, including cysts (≥3 mm), sclerosing adenosis, epithelial calcifications, or papillary apocrine metaplasia.(2) Some authors have reported increase in risk of carcinoma with complex FA as compared to simple FA while others opine that complex FA does not increase risk of carcinoma breast beyond that of other established histologic features such as proliferative disease without atypia and atypical hyperplasia(2),(3),(4).

Columnar cell change is characterised by terminal duct lobular units with irregular, variably dilated acini. lined by 1-2 cell layers and lining cells having uniform, ovoid to elongated nuclei oriented perpendicular to basement membrane. Apical snouts are frequently present. Luminal secretions and calcifications may be present.

Columnar cell hyperplasia characterised by terminal duct lobular units with irregular, variably dilated acini ,acini lined by stratified cells (more than 2 cell layers); may form tufts or mounds. Lining cells have uniform, ovoid to elongated nuclei that may appear crowded and overlap. Apical snouts often present, luminal secretions and calcifications may be present.

Columnar cell change / hyperplasia with cytologic atypia (high nuclear cytoplasmic ratio, irregular nuclear chromatin, variably prominent nucleoli) can be classified as flat

epithelial atypia.(5)

Tubular adenoma is a rare benign true epithelial neoplasm and is considered as a variant of pericanalicular fibroadenoma with florid adenosis (6). Tubular adenomas are found in young women of reproductive age. A case of tubular adenomas is rarely reported in juvenile females. Malignancy is not a feature of tubular adenoma (7),(8). Synchronous occurrence of complex fibroadenoma with tubular adenoma with columnar cell change and focal columnar cell hyperplasia in the same breast in a late adolescent female or early middle age is rare, hence we are reporting this case.

**Case Report**

A 30 year old female presented to Surgery OPD with complaints of left breast lump for 10 years. On physical examination a non-tender, mobile, firm mass measuring 7x5 cm was palpable in upper inner quadrant of left breast. Skin over swelling was normal. No axillary lymph nodes were palpable. Sonomammography was suggestive of BIRADS type 3- ?fibroadenoma.

FNAC features were suggestive of fibroadenoma with features of adenosis ( figure 1,2,) characterised by classic pattern of fibroadenoma along with 3D clusters, loosely cohesive clusters, tubules, rare acini surrounded by plump myoepithelial cells.

Excision of lump was done. Gross examination showed a globular tissue measuring 6x4x3.5cm. Cut surface showed two well circumscribed nodules, one larger and another vague illdefined nodule measuring 2 \*1.5 cms. Larger nodule was showing slit like spaces, other nodule was ill defined (Figure 3)

Microscopic examination showed a classical fibroadenoma with complex features of adenosis, cyst formation, fibrosis, apocrine changes, columnar cell change with apical snouts and secretions, focal columnar cell hyperplasia with a tubular adenoma component comprising of small, uniform, closely

packed round tubules which are lined by an inner layer of luminal epithelial cells and an outer layer of myoepithelial cells with sparse fibrovascular stroma intervening the tubules .Few tubules showed luminal eosinophilic secretion. At few areas myoepithelial cells could not be made out which was worrisome, hence IHC with p63 was done do check myoepithelial layer which was highlighted ( figures 4 to8 ).

**DISCUSSION**

Fibroadenoma is the most common benign breast lesion. It occurs in 25% of asymptomatic women. The peak incidence is between the ages of 15-35 years. Complex fibroadenomas have been reported in the mean age group of 34.5 years by Kuijper et al as compared to 28.5 years for patients with non complex fibroadenoma (1).

Our patient is in the early middle age with adenosis, apocrine, cystic changes in the fibroadenoma along with columnar cell change and focal columnar cell hyperplasia. Unlike women with single fibroadenoma, most of the patients with multiple fibroadenomas have strong family history. Our patient did not have family history of breast lump. Fibroadenoma is also thought to represent a group of hyperplastic breast lobules called aberration of normal development and involution(7),(8).

If the tumor assumes size more than 10cms in an adolescent female it is called a giant fibroadenoma(7).

Microscopically it consists of proliferation of epithelial and fibrous elements. Approximately 50% of fibroadenomas contain other epithelial proliferative changes of the breast such as sclerosing adenosis, adenosis, apocrine change, cyst formation, adenomatous transformation, lobular and ductal epithelial hyperplasia. Stromal changes like myxoid change with rare heterologous elements like smooth muscle, fat, cartilage and osteoid differentiation may be seen. (10)

Complex fibroadenoma term is applied if any of the following are present: cyst ≥3 mm diameter, sclerosing adenosis, epithelial calcifications, papillary apocrine change(1),(2),(4). Our case had cystic change and foci of sclerosing adenosis , hence was reported as complex fibroadenoma.

Breast adenomas are common, but tubular adenoma are uncommon benign breast lesions occurring in an adolescent female. According to Hertel et al14 classification, breast adenomas were classified into true adenoma, nipple adenoma and fibroadenoma ( table 1).

Table 1: Proposed Classification of Breast Adenomas (Hertel et al)

- 1) True Adenomas
  - a) Tubular adenoma
  - b) Combined tubular and fibroadenoma
  - c) Lactating adenoma
  - d) Sweat gland tumors: eccrine acrospiroma: eccrine spiradenoma. □ Nipple Adenoma □ Fibroadenoma

Tubular adenoma is a completely benign tumor and is not associated with risk of breast cancer development. Close differential diagnosis are Adenomyoepithelial adenosis, adenomyoepithelioma, sclerosing adenosis, microglandular adenosis.

Adenomyoepithelial adenosis is an uncommon variant of adenosis grossly forming a mass with circumscribed or illdefined borders , microscopically consisting of multiple haphazardly arranged ducts with eosinophilic secretions consisting of epithelial and myoepithelial cells (1 to 3 myoepithelial cell layers)(9).

Adenomyoepithelioma : Grossly usually solitary nodule with mean size of 2 cms, well circumscribed , firm, grey tan lesion can have focal cystic change.

Microscopically consisting of biphasic proliferation of epithelial , myoepithelial cells which can show sebaceous, squamous and apocrine metaplasia. Myoepithelial cells are dominant ( with spindle, polygonal and clear cells) usually > 3 layers

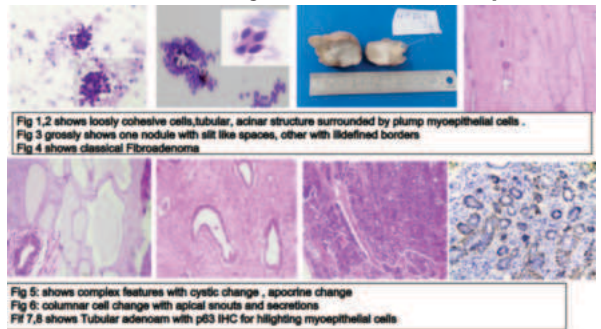
Sclerosing adenosis consisting of proliferation of glands with sclerosis which can cause architectural distortion of glands , consist of epithelial and myoepithelial cells

Microglandular adenosis : consists of haphazardly arranged glands , lacks lobulocentric pattern, lacks myoepithelial cells but has basement membrane.

In our case, focally tubules were not showing myoepithelial cells on H and E. Hence IHC was done. Fibroadenomas with focal adenomatous change can be mistaken for tubular adenoma but the later has scanty intervening stroma. Our case was a pure tubular adenoma synchronous with complex Fibroadenoma in the same breast.

**CONCLUSION**

- 1) Synchronous occurrence of complex FAs with tubular adenoma is an exceptionally rare phenomenon making this case a unique one.
- 2) Pre operative diagnosis is difficult because in most cases the clinical findings and imaging features resemble fibroadenoma .
- 3) Cytologically one can diagnose or suspect adenosis/ adenoma if there are loosely cohesive 3d cell clusters, tubules, acini surrounded by plump myoepithelial cells.
- 4) The histologic findings of this case confirmed to us that, Tubular adenoma and complex fibroadenoma are closely related to fibroadneoma and complete simple excision with rim of normal tissue surrounding the tumor should be the line of treatment which lowers the chance of local recurrence
- 5) Long term follow up is essential to check if there is any recurrence since rarely local recurrences , malignant transformation have been reported.
- 6) Further similar case reports with clinical details and follow up status is needed to throw light on rate of recurrences and malignant transformation if any.



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