

**Case Report**

# Tubular Adenoma Part and Parcel of Fibroadenoma? - A Case Report

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## Article Info

Received: Aug 02, 2023

Accepted: Aug 30, 2023

Published: Sep 06, 2023

Archived: www.jclinmedsurgery.com

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## Abstract

Tubular adenomas are rare benign epithelial neoplasms and is thought to be histologically distinct from fibroadenomas however with a common histogenesis. Often in clinical examinations, radiology, cytological analysis and core biopsy evaluation it is misdiagnosed as fibroadenomas. Histopathology of excision specimen reveals the correct diagnosis, however there are great mimickers of this entity adding to further confusions and diagnostic dilemmas. Hence, we present a case of Tubular adenoma and fibroadenoma- tubular adenoma mix in a 32-year-old female as a proof of the common histogenesis. We also discuss the differential diagnosis and associations, in order to be aware of this entity which is totally benign.

**Keywords:** Tubular adenoma; Fibroadenoma; Well circumscribed.

## Introduction

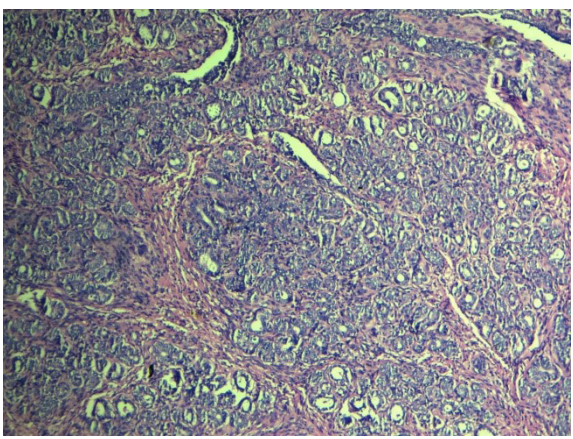
Tubular adenoma is a rare benign epithelial neoplasm occurring mainly in premenopausal women. The occurrence rate 0.3-1.7% among the benign breast lesions [1]. It is considered as a variant of fibroadenoma and proposed to have common histogenesis. However, it has a distinctive histomorphology of glandular predominance with very sparse intervening stroma unlike the dense stromal proliferation in fibroadenoma. Previous studies on tubular adenoma have reported its occurrence along with phyllodes tumor, ductal carcinoma in situ and very rarely in association with Invasive ductal carcinoma. To the best of our knowledge this is the first study showing the spectrum of transformation of fibroadenoma to Pure tubular adenoma in a same patient. So, we are presenting this case where a 32-year-old female came with complaints of multiple lumps on left side of breast and found to have Tubular adenoma and fibroadenoma- tubular adenoma mix in different lumps, thereby proving the common histogenesis.

## Case presentation

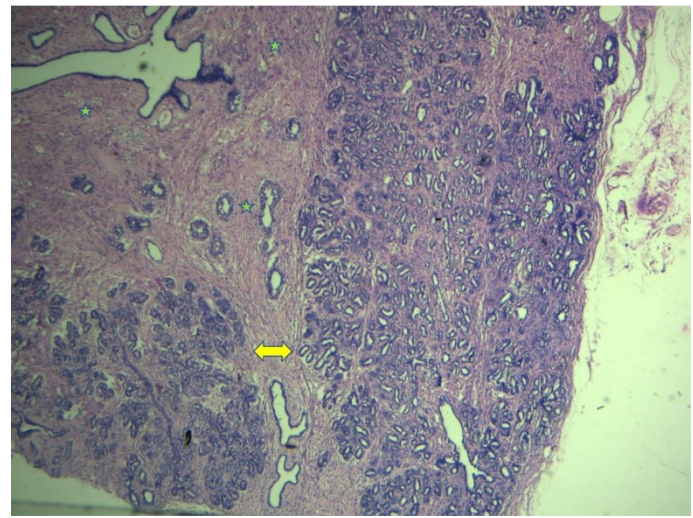
A 32-year-old lady came with complaints of multiple lumps in her left breast present for past 1 year. On physical examination 3 lumps were palpable in the upper inner quadrant of left breast ranging in size from 1 to 3 cm. Ultrasound done revealed three well circumscribed oval hypoechoic lesions in upper inner quadrant of left breast measuring 1 cm, 1.4 cm and 2.8 cm. Fine Needle Aspiration Cytology (FNAC) was requested for the larger lump and the aspiration smears show low to moderately cellular smears comprising of ductal epithelial cells along with myoepithelial cells arranged in monolayered sheets and clusters with individual cells are showing round to oval nucleus with bland chromatin, moderate cytoplasm and few fibrostromal fragments and scattered bare nuclei seen in a background. So, with these findings a diagnosis of Fibroadenoma (Category II) (The Yokohama System for reporting breast cytopathology-2020) was given. Later on, the two of the lumps with significant size was excised and sent for histopathological examination.

**Citation:** Rajagopal P, Shankaralingappa A, Anthony ML. Tubular Adenoma Part and Parcel of Fibroadenoma? - A Case Report. *J Clin Med Surgery.* 2023; 3(2): 1119.

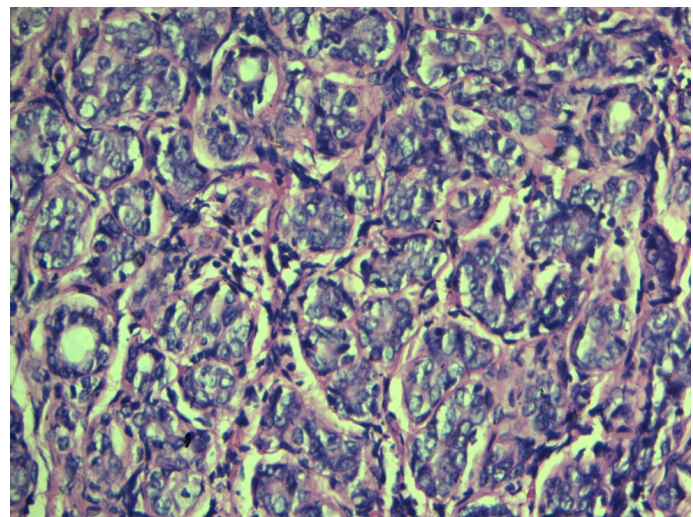
Histopathological examination from the relatively larger lump show well circumscribed neoplasm consisting of glandular and stromal proliferation pattern with areas of tubular adenoma (Figure 1). The glands are lined by two layered epithelium. Section examined from smaller lump shows an encapsulated neoplasm composed of multiple lobules of very closely packed small sized acini with very minimal intervening stroma (Figures 2,3). These acini are lined by luminal epithelial and abluminal myoepithelial cells (Figure 4). No associated DCIS or invasive malignancy seen in sections studied. Henceforth, a diagnosis of Fibroadenoma with areas of tubular adenoma was given to the larger lump and tubular adenoma was rendered to the smaller lump.



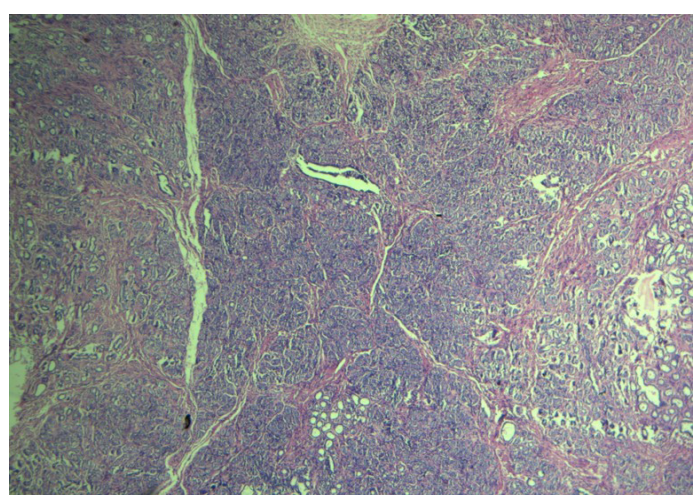
**Figure 3:** Microphotograph of tubular adenoma showing lobules composed of small, uniform, closely packed round tubules with sparse fibrovascular stroma intervening the tubules (H&E X100).



**Figure 1:** Microphotograph showing typical fibroadenoma areas (stars) and tubular adenoma areas (double arrow) (H&E, 100X).



**Figure 4:** Closely packed tubules lined by an inner layer of luminal epithelial cells and an outer layer of myoepithelial cells (H&E X400).



**Figure 2:** Microphotograph of tubular adenoma showing multiple lobules (H&E X40).

**Discussion**

Tubular adenoma is a rare benign epithelial neoplasm accounting for 0.3-1.7% among the benign breast lesions. It is usually a tumor of young females of premenopausal age group [1,2] albeit, have also been reported in postmenopausal individuals. Tubular adenomas mostly remain asymptomatic and rarely associated with breast pain. No alterations seen in overlying skin or nipple [3].

Clinical findings of tubular adenomas are similar to fibroadenoma [4]. They are slow growing and takes 6-12 months before presentation. Tubular adenomas have occurred in varying sizes ranging from 1 cm to 7.5 cm, however giant tubular adenomas of 14 cm size have also been documented in literature [5].

Tubular adenomas are well circumscribed neoplasms with a homogenous tan yellow cut surface with unremarkable nodularity. Tubular adenomas are difficult to differentiate from fibroadenoma grossly, however the former appears to be softer than fibroadenomas. Tavassoli et al stated that a nodule to be called as tubular adenoma it should be at least 1cm or encapsulated if it is small [4].

Radiologically tubular adenomas and fibroadenomas look alike. In a study done by Soo et al, where they have analyzed the imaging findings of 17 patient's and found that both were well circumscribed non calcified masses. Similarly, in our case both the lumps with different histological diagnosis had the same ultrasound findings. Infrequently, imaging findings are worrisome with microcalcifications, irregular shape, obscure boundary and uneven echotexture. Even though such features were very rare-

**Table 1:** Differential diagnoses.

S.No	Entity name	Microscopic findings	Remarks
1	Tubular adenoma	<ul style="list-style-type: none"> <li>Well circumscribed</li> <li>small round monomorphic tubules</li> <li>separated by a barely visible stroma</li> </ul>	Myoepithelial layer intact
2	Fibroadenoma	<ul style="list-style-type: none"> <li>Well circumscribed</li> <li>Both glandular and stromal proliferation</li> </ul>	Myoepithelial layer intact
3	Tubular adenosis	<ul style="list-style-type: none"> <li>Diffuse infiltrative</li> <li>Haphazardly scattered tubules</li> <li>Abundant fatty or fibrous stroma</li> </ul>	Myoepithelial layer intact
4	Microglandular adenosis	<ul style="list-style-type: none"> <li>Poorly circumscribed</li> <li>Small uniform glands</li> <li>Open lumina</li> <li>Embedded in a adipocytic /fibrous stroma</li> <li>Glands lined by cuboidal cells with uniform height and pale cytoplasm</li> </ul>	Myoepithelial layer absent, however basement membrane intact
5	Sclerosing adenosis	<ul style="list-style-type: none"> <li>Not sharply circumscribed, but localized lobulocentric pattern</li> <li>Compressed glands</li> </ul>	Myoepithelial layer intact- usually spindled
6	Radial scar	<ul style="list-style-type: none"> <li>Lobulocentric pattern</li> <li>Central fibrosis</li> <li>Tubules are not monomorphic</li> <li>Abundant fibrous stroma</li> </ul>	Myoepithelial layer intact
7	Phyllodes tumor benign	<ul style="list-style-type: none"> <li>Well circumscribed</li> <li>Glandular and stromal proliferation</li> <li>Leaf like architecture</li> </ul>	Myoepithelial layer intact
8	Tubular carcinoma	<ul style="list-style-type: none"> <li>Stellate infiltrative</li> <li>Angulated glands</li> <li>Wide open lumina</li> <li>Embedded in a desmoplastic stroma</li> </ul>	Myoepithelial layer and basement membrane absent

ly reported in tubular adenomas. Radiologists must be aware that carcinoma can arise from tubular adenoma or present as a collision in elderly individuals [6].

Cytological findings of tubular adenoma are very sparse. Three-dimensional ball like clusters and small tubular structures are reported as the predominant findings in Cytology. Tubular adenosis and tubular carcinoma are the other differentials to be considered when tubular structures are seen in cytology [7]. Our case no FNAC was attempted from the tubular adenoma lump and the FNA done from fibroadenoma with tubular adenosis didn't reveal any tubular structures as one can expect.

Histopathological examination of tubular adenomas will show well circumscribed or well encapsulated neoplasm comprising of small round uniform tubules lined by luminal epithelial and abluminal basal cells. The acini are usually separated by a sparse, barely visible stroma [2]. Our case had similar type of histological features.

Both benign and malignant neoplasms can often create diagnostic dilemmas with tubular adenomas and a number of lesions enter into the differential's like fibroadenoma, microgranular adenosis, sclerosing adenosis, radial scar, tubular carcinoma etc., [8]. So, this has to be correlated with clinical and radiological findings and can be supported by Immunohistochemistry (IHC) if needed. The main diagnostic features of each entity are given in table 1.

IHC is not routinely required for diagnosing tubular adenomas. At times when there is a confusion with tubular carcinoma or co-existing carcinoma, a battery of myoepithelial markers like Smooth Muscle Actin (SMA), p63, CK5/6, calponin can be thrown to find the intactness of myoepithelial cells and ruling out carcinomas [9]. In our case the morphological features were

very obvious for tubular adenoma and hence we didn't require Immunohistochemical support.

With regard to the histogenesis of tubular adenoma. Few authors consider it is an extreme variant of fibroadenomas and backing a common histogenesis for both [10]. Study by Maiorano et al., have revealed that the histomorphology and immunohistochemical features of both these entities are similar in few areas [9]. In our study we found one lump with fibroadenoma admixed with tubular adenoma like areas and another lump in same patient with pure tubular adenoma. This makes us to think in line with the above theory and this is viable evidence supporting the notion of common histogenesis.

The main stay of management is surgical excision. Complete excision is often curative. Core biopsy can be done before complete excision for correct diagnosis [11].

### Conclusion

Tubular adenomas are rare benign epithelial neoplasms sharing a common histogenesis with fibroadenomas and mimic fibroadenomas multidimensionally and our case is one other evidence for that. Tubular adenomas can occur alone or as an intimate admixture with fibroadenoma or phyllodes tumor. Since there are a number of great mimickers for this entity adding to further confusions and diagnostic dilemmas, awareness of this entity is essential because it is totally benign and curative by surgical excision.

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