

## A LUMP IN A MILLION- TUBULAR ADENOMA OF BREAST

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### ABSTRACT

Tubular adenomas are rare epithelial tumors of the breast. They are sometimes called “pure adenomas” because they tend not to show excessive epithelial hyperplasia and connective tissue growth. Only a few cases have been reported in the literature, mainly in young women of reproductive age. We hereby describe a case of tubular breast adenoma in a female who presented to us with a gradually enlarging breast lump. Clinically, a fibroadenoma was suspected and surgical excision was done. However, on histopathological examination a diagnosis of tubular adenoma was made. Pre-operative diagnosis is difficult because tubular adenoma is indistinguishable from a fibroadenoma on physical examination and breast imaging. Both radiologic as well as cytologic diagnosis performed prior to an excision biopsy may not be diagnostic. Surgical excision is necessary in order to reach a precise diagnosis and a definitive treatment. Although tubular adenoma is rare, it should always be considered in the differential diagnosis.

**KEYWORDS:** Tubular adenoma, Breast mass, Breast tumor.

### INTRODUCTION

Tubular adenoma is a rare benign epithelial neoplasm of female breast. Clinically, this is almost indistinguishable from fibroadenoma. Tubular adenomas account for 0.13-1.7% of benign breast lesions.<sup>[1]</sup> It was first described as a distinctive entity in 1968 by Persaud et al.<sup>[2]</sup> Reports on electron microscopical and cytological studies were published by Moross *et al.*<sup>[3]</sup>

Tubular adenomas of breast are circumscribed, but unencapsulated, lesions. They are histologically characterized by a circumscribed mass consisting of prominent lobular proliferation and closely packed ducts with sparse supporting stroma.

Few cases have been reported in literature especially in young women of reproductive age.<sup>[4]</sup> Most of these patients are under the age of 40. Mean age of occurrence of tubular adenoma is about 10 to 20 years. Tubular adenoma is extremely rare in post-menopausal women, and if they do occur it is more likely they will have developed microcalcifications.

Similar breast lesions are reported in association with pregnancy or the use of oral contraceptives (OCs). The lactating adenomas can be differentiated from tubular adenomas only by historical data (absence of pregnancy, lactation or OC pill use); otherwise, both neoplasms have

similar clinical, radiological, and microscopical appearances.<sup>[5]</sup>

They are benign and do not evolve into malignant carcinoma, and they do not metastasize. These rare breast neoplasms need to be differentiated from other benign and malignant lesions of the breast.

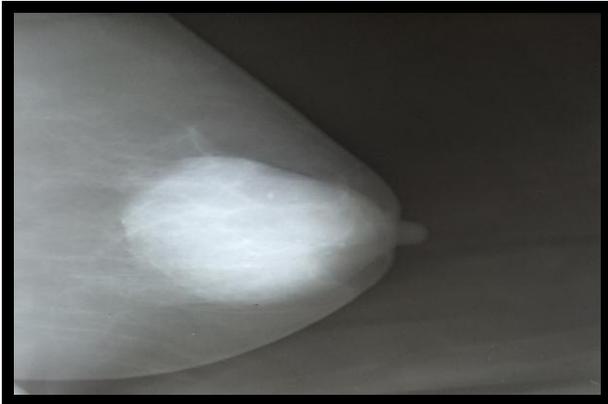
### CASE REPORT

A woman aged 34 years presented to our surgical outpatient department with complaints of a gradually enlarging palpable lump in the central region of the left breast since 8 months. She first noticed the lump during a shower. She gave no significant history of pain in the lump, no history of fever, any menstrual irregularities, or any history of nipple discharge. There was no history of any complaints of any lump or discomfort in the right breast. Her past medical history was insignificant except for a tubectomy which was done about 14 years ago. She gave no family history of breast or ovarian cancer and had attained menarche at the age of 12. She gave no history of usage of oral contraceptive pills.

On physical examination, a mobile non tender well circumscribed mass measuring approximately 6cm x4cm was palpated in the central region of the left breast.

There were no skin changes or nipple discharge. There were no axillary or supraclavicular lymph nodes palpable.

Mammogram showed a well-defined soft tissue opacity in the retro areolar region with minimal internal vascularity and no calcific foci within, with a few sub centric lymph nodes in the left axilla.



**Figure 1: Left medio lateral mammogram showing a well circumscribed mass in the retro-areolar region. No calcific foci are visible.**

An FNAC was done which showed benign ductal epithelial cells in sheets and clusters along with benign bare nuclei in the background. The aforementioned imaging and cytologic features were suggestive of a fibroadenoma. A sonomammogram also revealed a fibroadenoma. Routine investigations revealed normal study. Since the mass had increased in size, patient was subjected to excision biopsy and a sample was sent for histopathological examination.

Patient had an uncomplicated post-operative course and is on regular follow up.

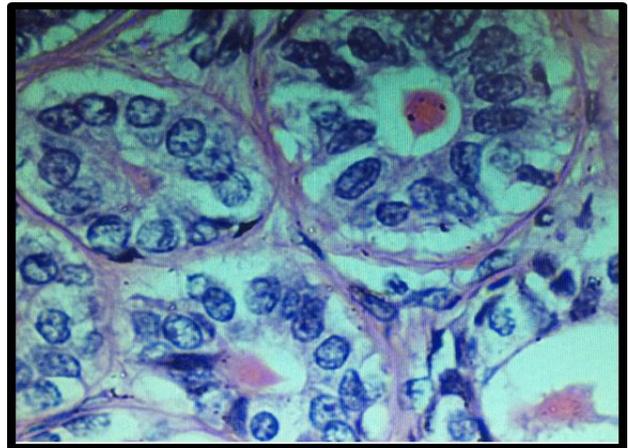
#### Gross

An irregular grey white soft tissue mass measuring 5.2cm x2.1cmx1cm was seen. Cut section showed an unencapsulated solid homogenous grey white mass.

#### Microscopy

Multiple sections showed densely packed irregular structures lined by inner cuboidal epithelium and outer myoepithelial layer surrounded by scanty intervening stroma.

**Based on these findings, a diagnosis of TUBULAR ADENOMA was made.**



**Figure 2: Microscopic picture showing densely packed structures with surrounding stroma.**

#### DISCUSSION

Breast adenomas are pure epithelial neoplasms. According to the classification proposed by Hertel et al.<sup>[6]</sup> breast adenomas are subdivided into true adenomas, nipple adenomas and fibroadenomas. Tubular breast adenomas or pure adenomas are rare epithelial tumors that belong to the class of adenomas.<sup>[6,7]</sup> They are considered variants of pericanalicular fibroadenomas with an exceptionally prominent or florid adenosis-like epithelial proliferation.<sup>[8]</sup>

Tubular breast adenomas most often affect young women or reproductive age.<sup>[1]</sup> In 90% of the cases these tumors are found in patients younger than 40 years old,<sup>[7]</sup> whereas the elderly women are very rarely affected.<sup>[4,10]</sup> Nagata et al.<sup>[10]</sup> reported that out of 32 cases of tubular breast adenoma reported in the Japanese literature only 2 occurred in women older than 65 years. Extremely rare cases have been reported in juvenile women<sup>[11]</sup> and in pregnant women with rapid tumor enlargement.<sup>[10]</sup>

Tubular adenomas of the breast are circumscribed, unencapsulated lesions. Clinically, they are almost indistinguishable from fibroadenomas. Tubular adenoma differs microscopically from fibroadenoma in its histologic and ultrastructural features. Tubular adenomas are characterized by a homogeneously tightly packed tubular or acinar epithelial component and sparse connective tissue, while fibroadenomas present abundant stroma and the epithelial components are characterized by large ducts. The presence of combined tubular adenoma and fibroadenoma accounts for 4% of all benign lesions<sup>[12]</sup> and about 11% of breast adenomas.<sup>[12,13]</sup>

Mammography and ultrasound commonly show non calcified nodules that vary in size; microcalcifications are occasionally described in postmenopausal women.<sup>[13,14]</sup>

There are only a few reports on fine needle aspiration cytology (FNA) of tubular adenomas. The main findings on FNA cytology include cells arranged in small, three-dimensional balls or clusters and tubular structures with or without closely approximated acini.<sup>[15]</sup> Kumar *et al.*<sup>[16]</sup> compared FNA smears from 6 histologically documented cases of tubular adenoma with 10 histologically confirmed cases of fibroadenoma and reported that an initial cytological diagnosis of tubular adenoma was made only in one case.

Similar breast lesions are reported in association with pregnancy or the use of oral contraceptives (OCs). The lactating adenomas can be differentiated from tubular adenomas only by historical data (absence of pregnancy, lactation or OC pill use); otherwise, both neoplasms have similar clinical, radiological, and microscopical appearances.<sup>[5]</sup>

Very rare cases of in situ or invasive cancers have been reported to develop in tubular breast adenomas.<sup>[1]</sup> Domoto *et al.*<sup>[17]</sup> reported a case of synchronous occurrence of a tubular adenoma with a ductal invasive breast carcinoma. Komaki *et al.*<sup>[18]</sup> reported a case where histology revealed the presence of 2 separate patterns that of tubular adenoma and fibroadenoma in an excised breast mass. These 2 patterns were distinct and there was no transitional zone suggesting that the 2 tumors are closely related to each other.

Histologically, the differential diagnosis of tubular adenomas includes fibroadenoma, nipple adenoma, sclerosing adenosis, eccrine spiradenoma and tubular carcinoma.<sup>[6]</sup>

A precise diagnosis is even more difficult in the presence of associated features such as mucinous secretion.<sup>[19]</sup> In addition, the presence of degeneration or infarction may be associated with atypia that can mimic malignancy in FNA smears.<sup>[20,21]</sup> Therefore, awareness of the tubular adenoma and its characteristics is therefore needed in order to prevent unnecessary aggressive treatment.<sup>[21,22]</sup>

Final diagnosis of tubular adenoma of breast depends on histopathology. Clinico radio cytologic studies can identify the benign nature of the lesion but a definitive pre-operative diagnosis is still an exception, rather than a rule. Tubular adenoma is a completely benign tumor and has not been associated with an increased risk of breast cancer development.<sup>[23]</sup> In many cases however, surgical excision is necessary to obtain a definitive diagnosis.<sup>[4]</sup>

## CONCLUSION

Tubular adenomas of the breast are uncommon benign epithelial lesions that are most common among young women of reproductive age group. A clinic radio cytological evaluation can help identify the benign nature of the lesion. Pre-operative diagnosis is still beyond our reach because in most cases the clinical findings and imaging features resemble fibroadenomas. Final

diagnosis of tubular adenoma of breast depends on histopathology. Recurrence and malignant conversion is extremely rare. In terms of management, tubular adenomas are typically just left alone. But if the adenoma grows to a size that causes pain or impairs breast function, it may be surgically excised. Thus, surgical excision is considered to be the best line of treatment.

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