

# Tubular Adenoma of the Right Breast- A Case Report

KABILAN THAVAMURUGAN<sup>1</sup>, BS SANGEETHA<sup>2</sup>, NATARAJAN RAMALINGAM<sup>3</sup>

CC BY-NC-ND

## ABSTRACT

Tubular adenomas of the breast belong to the category of fibroepithelial tumours of the breast, and it is composed of compact bilayer tubules with a sparse intervening stroma. It is usually circumscribed (may be nodular) benign tumour of the breast. Tubular adenomas are very rare benign tumours of the breast which mimic the clinical and radiological presentation of fibroadenomas. It usually presents as, a well-circumscribed, palpable painless mass. Surgical excision of this tumour is the main stay treatment. This report documents, a rare presentation of tubular adenoma in a 17-year-old girl who presented with a swelling in the right breast with pain, nipple discharge and nipple inversion. Breast ultrasound revealed, a large well-circumscribed heteroechoic lesion (8.5×3.8 cm) within the right breast, giving breast within breast appearance and reported as Breast Imaging Reporting and Diagnostic Scoring system BIRADS III. Patient was provisionally diagnosed as giant fibroadenoma and was planned for excisional biopsy. Histopathological examination confirmed it to be tubular adenoma. The patient had an excellent postoperative recovery.

**Keywords:** Breast lump, Benign, Fibroadenoma

## CASE REPORT

A 17-year-old girl presented to the breast clinic of General Surgery Department with the complaint of lump in the right breast in the upper outer quadrant for the past three months. She noticed the lump while she was bathing, three months back started as a small lump which gradually increased in size to attain the present size. Patient also had a history of pus discharge from the nipple associated with the pain since one week, the discharge was whitish in colour thick in consistency and she also had nipple inversion, which started after the lump was noticed. She had no other associated complaints. She did not undergo any treatment for the lump in any other hospital and there was no history of similar complaints in her family.

On examination, patient had a well-defined, mobile, mass of size (8×6 cm) in the right upper outer quadrant. It was tender to touch with inverted nipple [Table/Fig-1]. Dilated veins were present over the swelling. No axillary lymph nodes were palpable. Breast ultrasound revealed, a large well-circumscribed heteroechoic lesion (8.5×3.8 cm) within the right breast giving breast within breast appearance and reported as Breast Imaging Reporting and Diagnostic Scoring system BIRADS III [1] [Table/Fig-2,3].

Fine Needle Aspiration Cytology (FNAC) showed features, suggestive of benign proliferative breast disease. Magnetic Resonance Mammogram was done which showed a large mass in the right breast measuring 6.5×8 cm, demonstrating intermediate signal solid areas, non enhancing fat signal septations at the central area. The margins appeared smooth. There was homogenous enhancement of

the solid components following contrast. There was no evidence of skin or pectoralis invasion.

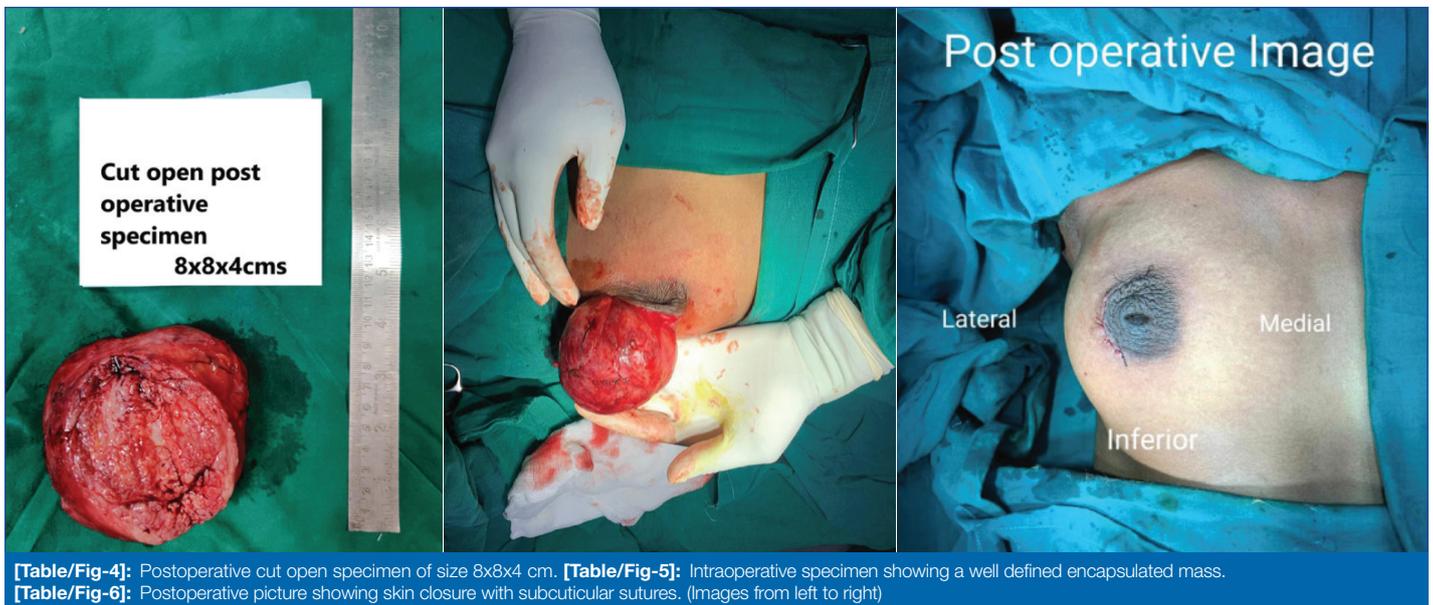
Patient was provisionally diagnosed as giant fibroadenoma clinically considering the consistency, age, plane and mobility and FNAC reports of the swelling and was planned for excisional biopsy. Under general anaesthesia, a circumareolar incision was made from 11-2 o'clock, and the tumour was released from the breast tissue [Table/Fig-4,5] and a well capsulated, circumscribed mass of size 8×6 cm was obtained, the tumour was milked out and the incision was closed with sub cuticular sutures [Table/Fig-6].

Histological examination reported as, tumour of size 8×8×4 cm, which on microscopy showed varying sized lobules, separated by fibrous stroma. Each lobule showed numerous uniform sized tubules lined by inner columnar ductal epithelial cells with vesicular nuclei and distinct nucleoli. No evidence of mitotic activity were present and features were consistent with tubular adenoma [Table/Fig-7,8]. S100 is a myoepithelial cell marker, highlights the presence of myoepithelial cells around the ducts [Table/Fig-9]. Given the size of the tumour >5 cm, this could be technically classified as giant tubular adenoma as described by Kalipatnapu S et al., [2].

The patient had an excellent postoperative recovery, the breast reduced back to its normal size without any seroma collection in the second postoperative day, and patient was discharged in a couple of days, and was advised about wound care. Suture removal was done after two weeks and there was no residual mass, follow-up ultrasound showed no fluid or seroma collection.

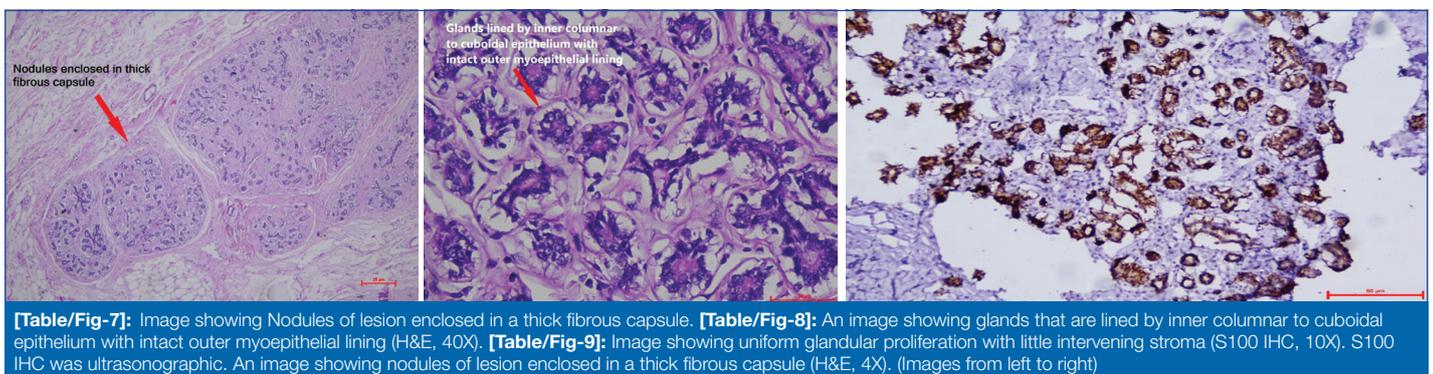


**[Table/Fig-1]:** Enlarged breast with nipple inversion. **[Table/Fig-2]:** Ultrasound image showing heteroechoic lesion in the right breast. **[Table/Fig-3]:** Ultrasound image showing well circumscribed heteroechoic lesion in right breast. (Images from left to right)



**[Table/Fig-4]:** Postoperative cut open specimen of size 8x8x4 cm. **[Table/Fig-5]:** Intraoperative specimen showing a well defined encapsulated mass.

**[Table/Fig-6]:** Postoperative picture showing skin closure with subcuticular sutures. (Images from left to right)



**[Table/Fig-7]:** Image showing Nodules of lesion enclosed in a thick fibrous capsule. **[Table/Fig-8]:** An image showing glands that are lined by inner columnar to cuboidal epithelium with intact outer myoepithelial lining (H&E, 40X). **[Table/Fig-9]:** Image showing uniform glandular proliferation with little intervening stroma (S100 IHC, 10X). S100 IHC was ultrasonographic. An image showing nodules of lesion enclosed in a thick fibrous capsule (H&E, 4X). (Images from left to right)

## DISCUSSION

Tubular adenomas of the breast are very rare tumours. The incidence of tubular breast adenomas ranges from 0.13% to 2.8% overall [3]. Women of reproductive age are the majority, who develop tubular adenomas [4]. Although, a few rare breast lesions have a typical imaging appearance, most of them have mammographic and ultrasonographic features similar to those of breast carcinomas, hence the aid of needle biopsy is always necessary to arrive at a diagnosis [5]. Only two to three tubular adenoma cases in postmenopausal women have been described in the literature which was found to be painless and not associated with any nipple inversion or nipple discharge unlike this case [6-8]. However, one case of a tender breast swelling with bloody nipple discharge has been reported [9].

The clinical presentation is similar to that of other benign breast tumours, such as fibroadenomas. Tubular adenomas typically present as mobile, palpable masses with no skin or nipple involvement [10]. Usually, tubular adenomas are seen in the upper and outer quadrants.

Radiographically, tubular adenomas can look like non calcified fibroadenomas on mammograms in young women and well circumscribed hypoechoic masses on ultrasonography. In older age group, tubular adenomas may be similar to malignant mass with microcalcifications [11].

On histopathological examination, tubular adenoma of the breast is defined as benign breast lesion composed of a well-circumscribed mass of compactly packed regular round tubules. It is sharply defined, but it doesn't have a true capsule. The round tubules comprise of two cell layers, luminal epithelial cells and abluminal myoepithelial cells. In contrast to fibroadenomas, which are richly stromal, there is scant peri ductal stroma [12]. The

differential diagnoses are lactating adenoma, sclerosing adenosis and microglandular adenosis.

Malignancy in association with tubular adenomas have been described in only two cases. Saimura M et al., revealed Ductal Carcinoma In Situ (DCIS) within tubular adenoma tissue and Domoto H et al., defined co-localisation tubular adenoma with invasive ductal carcinoma [13,8]. However, there was a clearly defined histological boundary. However, the conclusion of the two reports was that, malignant transformation of tubular adenoma cannot be ruled out [8,13].

Initial assessment of any rapidly growing breast mass includes history, clinical examination, imaging and core needle biopsy. According to Sengupta S et al., tubular adenomas can be diagnosed with certainty only after histopathological report [11]. There are no defined guidelines in literature for the management of tubular adenomas, owing to its benign nature, it is usually managed as in fibroadenomas by surgical excision.

The follow-up of tubular adenomas are rarely reported, as in literature only one follow-up of a tubular adenoma case at 18 months follow-up has been reported [13]. Follow-up includes annual clinical breast examination with mammography in patients >40 years of age. Tubular adenomas have morphological and immunohistochemical characteristics that are similar to fibroadenomas in some areas of the tumour [14].

## CONCLUSION(S)

Tubular adenomas are very rare tumors which present clinically like many other benign tumors of the breast, they mimic fibroadenomas clinically and radiologically. Preoperative diagnosis is not easy as, in most cases the clinical findings and imaging features resemble fibroadenomas. This report concludes that a tubular adenoma can also present with nipple discharge and nipple inversion which is unusual.

## REFERENCES

- [1] D'Orsi CJ, Kopans DB. Mammography interpretation: The BI-RADS method. *Am Fam Physician*. 1997;55(5):1548-50, 1552. PMID: 9105186.
- [2] Kalipatnapu S, Samuel V, Johnson M, Perookavil Daniel K. A case report of a giant tubular adenoma with a concurrent fibroadenoma of the breast. *World J Oncol*. 2015;6(6):502-03. Doi: 10.14740/wjon954e. Epub 2015 Dec 31. PMID: 28983355.
- [3] Sengupta S, Pal S, Biswas BK, Phukan JP, Sinha A, Sinha R. Preoperative diagnosis of tubular adenoma of breast- 10 years of experience. *N Am J Med Sci*. 2014;6(5):219-23. Doi: 10.4103/1947-2714.132940. PMID: 24926447.
- [4] Huang Y, Zhang H, Zhou Q, Ling L, Wang S. Giant tubular adenoma of the accessory breast in the anterior chest wall occurred in a pregnant woman. *Diagn Pathol*. 2015;10:60.
- [5] Irshad A, Ackerman SJ, Pope TL, Moses CK, Rumboldt T, Panzegrav B. Rare breast lesions: Correlation of imaging and histologic features with WHO classification. *Radiographics*. 2008;28(5):1399-414. Doi: 10.1148/rg.285075743. PMID: 18794315.
- [6] Rovera F, Ferrari A, Carcano G, Dionigi G, Cinquepalmi L, Boni L, et al. Tubular adenoma of the breast in an 84-year-old woman: Report of a case simulating breast cancer. *Breast J*. 2006;12(3):257-59. Doi: 10.1111/j.1075-122X.2006.00250.x. PMID: 16684324.
- [7] Nishimori H, Sasaki M, Hirata K, Zembutsu H, Yasoshima T, Fukui R, et al. Tubular adenoma of the breast in a 73-year-old woman. *Breast Cancer*. 2000;7(2):169-72.
- [8] Domoto H, Tsuda H, Miyakawa K, Shinoda A, Nanasawa T. Invasive ductal carcinoma associated with tubular adenoma of the breast. *Pathol Int*. 2002;52(3):244-48.
- [9] Miller MC, Johnson P, Kim S, Choi L. Tubular adenomas of the breast: A rare diagnosis. *BMJ Case Rep*. 2018;2018:bcr2018224631.
- [10] Rosen PP. *Rosen's Breast Pathology*. 4<sup>th</sup> ed Philadelphia: Wolters Kluwer Health, 2014:1379.
- [11] Sengupta S, Pal S, Biswas BK, Bose K, Phukan JP, Sinha A. Evaluation of clinico-radio-pathological features of tubular adenoma of breast: A study of ten cases with histopathological differential diagnosis. *Iran J Pathol*. 2015 Winter;10(1):17-22. PMID: 26516321; PMCID: PMC4539785.
- [12] Salemis NS, Gemenetzi G, Karagkiouzis G, Seretis C, Sapounas K, Tsantilas V, et al. Tubular adenoma of the breast: A rare presentation and review of the literature. *J Clin Med Res*. 2012;4(1):64-67. Doi: 10.4021/jocmr746w. Epub 2012 Jan 17. PMID: 22383931; PMCID: PMC3279505.
- [13] Saimura M, Anan K, Mitsuyama S, Ono M, Toyoshima S. Ductal carcinoma in situ arising in tubular adenoma of the breast. *Breast Cancer*. 2015;22(4):428-31.
- [14] Maiorano E, Albrizio M. Tubular adenoma of the breast: An immunohistochemical study of ten cases. *Pathol Res Pract*. 1995;191(12):1222-30.

### PARTICULARS OF CONTRIBUTORS:

1. Postgraduate Student, Department of General Surgery, Tagore Medical College, Chennai, Tamil Nadu, India.
2. Associate Professor, Department of Pathology, Tagore Medical College, Chennai, Tamil Nadu, India.
3. Professor, Department of General Surgery, Tagore Medical College, Chennai, Tamil Nadu, India.

### NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Kabilan Thavamurugan,  
47, Sivaji Street, New Ramnad Road, Madurai, Chennai, Tamil Nadu, India.  
E-mail: kabilan8496@gmail.com

### PLAGIARISM CHECKING METHODS: <sup>[Jain H et al.]</sup>

- Plagiarism X-checker: May 05, 2022
- Manual Googling: Aug 18, 2022
- iThenticate Software: Sep 16, 2022 (12%)

### ETYMOLOGY: Author Origin

### AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **May 01, 2022**

Date of Peer Review: **May 31, 2022**

Date of Acceptance: **Aug 22, 2022**

Date of Publishing: **Jan 01, 2023**