



## Mini Review Article

ISSN 2320-4818

JSIR 2017; 6(2): 84-86

© 2017, All rights reserved

Received: 22-04-2017

Accepted: 25-05-2017

### Rihana Begum P

Assistant Professor, Seven Hills  
College of Pharmacy, Tirupati,  
Andhra Pradesh- 517561, India

### Rejitha Thomus

Assistant Professor, Krupanidhi  
College of Pharmacy, Bengaluru,  
Karnataka- 560035, India

### Dr. Niranjan Babu

Principal, Seven Hills College of  
Pharmacy, Tirupati, Andhra  
Pradesh-517561, India

### Correspondence:

#### Rihana Begum P

Assistant Professor, Seven Hills  
College of Pharmacy, Tirupati,  
Andhra Pradesh- 517561, India

## Chances of breast cancer with fibroadenoma- Review

Rihana Begum P\*, Rejitha Thomus, Niranjan Babu

### Abstract

Fibroadenoma is a term used to describe a broad range of solid, benign breast lesions that commonly effect premenopausal women. Fibroadenomas are often discovered as a palpable mass, which might feel firm, smooth, rubbery or hard, perhaps like a pea or a grape. They are usually painless and will often move easily when touched<sup>[1]</sup>. Fibroadenomas are affected by hormones and tend to fluctuate (or increase) in size during the menstrual cycle, pregnancy and breast feeding or if using hormone replacement therapy and oral contraceptives. The cause of a fibroadenoma is unknown, but they are likely related to abundant estrogen, as they are common in young women. It might be related to the hormone-receptor mechanisms. Fibroadenomas themselves do not pose any risk of breast cancer development throughout the breast tissue. Previously in many reviews, it has been suggested that Fibroadenomas may be associated with an increased likelihood of developing breast cancer. Some information still holds to this theory. Therefore, this review aims to look at where this theory came from and the latest development of thought.

**Keywords:** Novel fluid filtration, Working of fluid filtration, Software based analytical study.

### INTRODUCTION

Fibroadenomas remain unique of the utmost common benevolent tumors of the breast in females underneath 30 years of age. In the young people, the overall occurrence of fibroadenoma is 2.2%<sup>[2]</sup>. They account for 68% of all breast masses and 44%–94% of biopsied breast abrasions<sup>[3,4]</sup>. Histologically, fibroadenoma is a benevolent biphasic tumor with epithelial and stromal components. Furthermore, a palpable mass in the adolescent breast incurs anxiety for both the patient and family. Fibroadenomas were earlier acknowledged as benign tumours of breast<sup>[5]</sup> but are now deliberated to be abnormalities of normal development rather than neoplasms<sup>[6]</sup>. The purpose is that fibroadenomas mature from an entire breast lobule, which is conflicting to the origin of neoplasm from a lone cell by way of indication of propagation of both connective tissue and lobular epithelium. Histologically, fibroadenomas resemble a hyperplastic breast lobule and they respond to same hormonal stimuli as the normal breast tissue<sup>[7]</sup>. The biological conduct of fibroadenoma is capricious; they may degenerate, remain static or grow gradually.

Traditionally, all Fibroadenomas were treated by surgical excision just to exclude malignancy. The doctrine that all discrete breast lumps should be excised has recently been challenged because if confident diagnosis and exclusion of malignancy is possible with preoperative investigations than the need for excision biopsy can be obviated. The current view that fibroadenomas are hyperplastic rather than neoplastic lesions and proposed hormonal influences, it is appealing to consider fibroadenomas as an aberration of normal lobular hypertrophy during the period of maximal estrogen exposure. This concept gives support to a policy of non-surgical Management<sup>[6,8]</sup>.

### Categories

Subclasses of fibroadenomas consist of simple fibroadenoma, giant juvenile fibroadenoma, and multicentric fibroadenoma<sup>[9]</sup>. 70 – 90 % of fibroadenomas remain simple fibroadenomas, the utmost collective kind of fibroadenoma. Giant juvenile fibroadenomas exist as exceptional variant of fibroadenoma. They are demarcated as one promptly broadening encapsulated fibroadenoma with a span greater than 5 cm, deliberating over 500 g, or transferring at least four fifths of the breast<sup>[10]</sup>. Giant fibroadenomas are concomitant by means of skin ulcerations and venous enlargement<sup>[11]</sup>. The occurrence of giant fibroadenomas is just about 0.5%–2% of all fibroadenomas<sup>[12]</sup>. Populations liable to giant fibroadenomas remain women aged 10–18 years old and African-American women.

Giant fibroadenoma is the ultimate collective origin of autonomous macromastia in adolescent women. Multicentric fibroadenomas are numerous fibroadenomas arising in different quadrants of the breast. The occurrence of multicentric fibroadenoma is approximately 10%–25% of all fibroadenomas [9]. Figure 1 illustrates different types of

fibroadenomas. Although fibroadenomas are benign breast masses, women with fibroadenomas are at a 2.17 times increased risk for breast cancer [13]. The incidence of malignancy arising from a fibroadenoma specimen is rare, and ranges from 0.002% to 0.125% [14].

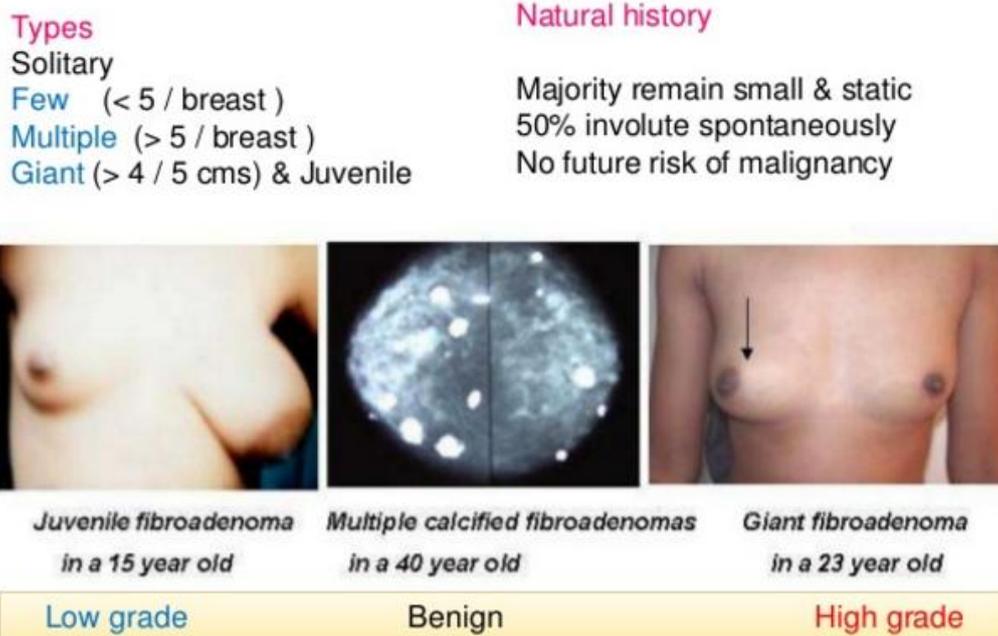


Figure 1: Types of Fibro adenomas

**Causes and Signs**

More than 70% of fibroadenomas present as a single mass, and 10%–25% of fibroadenomas present as multiple masses [9]. Typically, fibroadenoma presents as a painless, smooth, mobile, rubbery mass with distinct borders usually ranging from 1 cm to 3 cm in size on the upper outer quadrant of the breast (figure 2). It can also be small enough that it

is only seen on microscopic examination or it can be larger than 10 cm and cause breast asymmetry and significant esthetic deformation of the breast. The size of the fibroadenoma can shrink or expand spontaneously, or it can be hormonally responsive and vary in size in conjunction with the menstrual cycle [11]. Fibroadenomas can also vary in clinical presentation, ranging from being asymptomatic to causing debilitating pain.

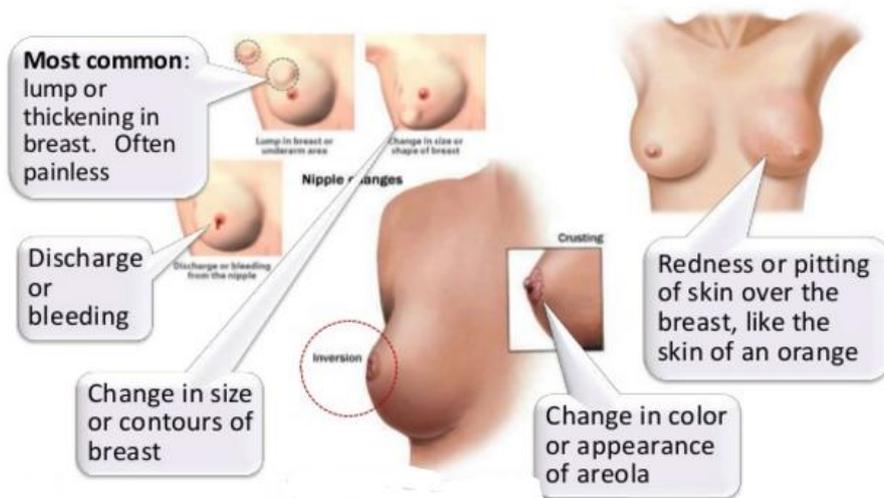


Figure 2: Signs and Symptoms of Fibroadenoma

The exact etiology of fibroadenoma is unknown. However, several studies show that estrogen influences the development of fibroadenomas [15, 16]. In a large population study of 265,402 women, risk factors for development of fibroadenoma include young age (<35 years old), self-breast examination, and prior history of benign breast disease. Exposure to an estrogen-progesterone oral contraceptive before menopause and increasing number of live births decreases the risk of fibroadenoma [17]. There is also correlation between body mass index and incidence of

fibroadenoma. In a study of 1,717 patients, the incidence of fibroadenoma peaked in the body mass index group of 25–29.9 kg/m<sup>2</sup> [18]. Fibroadenomas can also be associated with syndromes such as Beckwith-Wiedemann syndrome, Maffuccis syndrome, and Cowdens syndrome [19].

The natural history of fibroadenoma varies from individual to individual. Some fibroadenomas may remain dormant without any

change in size. Others may grow slowly in size. Overall, most fibroadenomas decrease in size as they lose cellularity, infarct with resultant calcification and hyalinization. In the adolescent population, 10%–40% of fibroadenomas spontaneously regress<sup>[20]</sup>.

Fibroadenomas themselves do not posture any danger of breast tumour growth all through the breast tissue. In many older articles, this one comprised, it has been proposed that Fibroadenomas may be linked with an improved probability of rising breast cancer. Certain data still holds to this concept so let's proceed a look at somewhere this concept came from and the latest progress of thought.

It might be that in the years earlier ultrasound directed principal biopsy, physicians and breast specialists would “estimate” that somebody had a fibroadenoma and evidently, a minor proportion of those speculations would be incorrect. They might in future devise a breast biopsy that did show a lobular carcinoma, ductal carcinoma, phyllodes tumor, or a cystosarcomaphyllodes. But nowadays, those with benign-looking nodules will tend to have a core-biopsy (or even an excisional biopsy) anyway, for diagnosis purposes. If a biopsy proves that a breast lump is a fibroadenoma this result is benign with no increased risk for breast cancer.

## CONCLUSION

Fibroadenomas are one of the most common benign breast masses encountered in the adolescent population. Fibroadenomas are the most common type of breast tumor (lump). They are solid (not fluid-filled) masses, have clearly defined edges and are typically round or oval in shape. Fibroadenomas are benign, which means they are not cancerous, and do not turn into cancer. Any breast mass can evoke anxiety in the patient. This is especially true in the adolescent population. Hence, as fibroadenomas are completely benign and do not carry a risk of malignancy especially in women less than 30 years of age, the non-operative management seems a viable option. However, it is emphasized that further clinical research is required to assess the safety and to evaluate the potential economic gain as well as the benefit of decreased physical and emotional trauma to the patient.

**No conflict of interest:** Nil

## REFERENCES

1. Dupont W, Page D, Parl F, Vnencak-Jones C, Plummer W, Rados M Schuyler. Long-Term Risk of Breast Cancer in Women with Fibroadenoma. *N Engl J Med.* 1994;331(1):10-15.
2. Santen RJ, Mansel R. Benign breast disorders. *N Engl J Med.* 2005; 353(3):275–85.
3. Cerrato F, Labow BI. Diagnosis and management of fibroadenomas in the adolescent breast. *SeminPlast Surg.* 2013;27(1):23–25.
4. Chang DS, McGrath MH. Management of benign tumors of the adolescent breast. *PlastReconstr Surg.* 2007;120(1):13e–19e.
5. World Health organization Histological typing of breast tumours. 2nd ed. Geneva: WHO,1981.
6. Hughes LE, Mansel RE, Webster DJT. Aberration of normal development and involution: a new perspective on pathogenesis and nomenclature of benign breast disorders. *Lancet* 1987; 11:1316-9.
7. Martin PM, Kuttan F, Serment H, Jarvis MP. Studies on clinical, hormonal and pathological correlations in breast fibroadenomas. *J Steroid Biochem* 1978; 9: 1251-52.
8. Carty N J , Carter C, Rubin C, Ravichandran, Royal GT. Taylor I. Management of fibroadenoma of the breast. *Ann R CollSurgEngl* 1995; 77:127-30.
9. Williamson ME, Lyons K, Hughes LE. Multiple fibroadenomas of the breast: a problem of uncertain incidence and management. *Ann R CollSurg Engl.* 1993;75(3):161–163.

10. Gobbi D, Dall'Igna P, Alaggio R, Nitti D, Cecchetto G. Giant fibroadenoma of the breast in adolescents: report of 2 cases. *J Pediatr Surg.* 2009;44(2): e39–e41.
11. Greenberg R, Skor nick Y, Kaplan O. Management of breast fibroadenomas. *J Gen Intern Med.* 1998;13(9):640–645.
12. Song BS, Kim EK, Seol H, et al. Giant juvenile fibroadenoma of the breast: a case report and brief literature review. *Ann PediatrEndocrinolMetab.* 2014;19(1):45–48.
13. Dupont WD, Page DL, Parl FF, et al. Long-term risk of breast cancer in women with fibroadenoma. *N Engl J Med.* 1994;331(1):10–15.
14. Wu YT, Chen ST, Chen CJ, et al. Breast cancer arising within fibroadenoma: collective analysis of case reports in the literature and hints on treatment policy. *World J SurgOncol.* 2014;12(1):335.
15. Trapido EJ, Brinton LA, Schairer C, Hoover R. Estrogen replacement therapy and benign breast disease. *J Natl Cancer Inst.* 1984;73(5): 1101–1105.
16. Sitruk-Ware R, Thalabard JC, Benotmane A, Mauvais-Jarvis P. Risk factors for breast fibroadenoma in young women. *Contraception.* 1989;40(3):251–268.
17. Coriaty Nelson Z, Ray RM, Gao DL, Thomas DB. Risk factors for fibroadenoma in a cohort of female textile workers in Shanghai, China. *Am J Epidemiol.* 2002;156(7):599–605.
18. O'Brien S, Kowdley GC. Benign breast diseases and body mass index: is there a correlation? *Am Surg.* 2014;80(5):461–465.
19. Poh MM, Ballard TN, Wendel JJ. Beckwith-Wiedemann syndrome and juvenile fibroadenoma: a case report. *Ann Plast Surg.* 2010;64(6): 803–806.
20. Michelle Lee, Hooman T Soltanian. Breast fibroadenomas in adolescents: current perspectives *Adolescent Health, Medicine and Therapeutics* 2015;6 159–163.