


CASE REPORT

Fibroadenoma in a young male breast: A case report and review of the literature

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Abstract

Fibroadenomas are the most common benign breast tumors in women, but rarely occur in men. Herein, we present a case of fibroadenoma occurring in a young, healthy male without hormonal alterations. This indicates that fibroadenoma should be regarded as differential diagnosis for tumors in the male breast.

KEYWORDS

breast, fibroadenoma, male

1 | INTRODUCTION

Fibroadenoma is the most common type of benign breast tumor in women, especially at a young age. Fibroadenomas have both epithelial and stromal components. In general, varying degrees of epithelial hyperplasia are frequently observed.¹ Fibroadenoma rarely occurs in the male breast; approximately only 15 cases of fibroadenoma have been reported in males, most of which were reportedly derived from gynecomastia. Here, we present the case of a young adult male patient with fibroadenoma of the right breast.

2 | CASE PRESENTATION

A 27-year-old male patient who had been aware of a slowly growing mass in the right breast for approximately ten

years was referred to our outpatient department. The patient had no medical history, was healthy, and was taking no medications at the time. The patient developed normal secondary sexual characteristics, and his serum hormone profile was normal. Physical examination revealed diffuse gynecomastia in the right breast, and a lobulated elastic firm lump measuring 4 × 2 cm in size was palpated in the lower inner quadrant of the right breast. The lump was mobile and not fixed to the skin or underlying fascia. No palpable axillary or supraclavicular lymphadenopathy was observed. No abnormal findings were recorded in the left breast.

Breast ultrasonography revealed diffuse thickening of the right mammary gland. An oval-shaped hypoechoic mass with a well-defined border measuring 41 × 12 mm in size was found in the lower inner quadrant of the right breast (Figure 1A). Chest computed tomography showed diffuse

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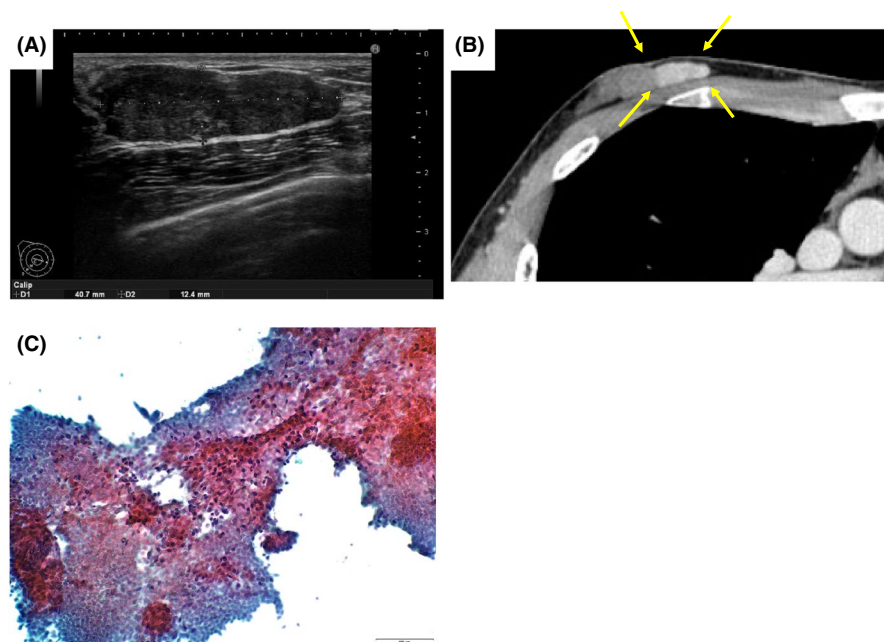


FIGURE 1 (A) Breast ultrasonography shows an oval-shaped hypoechoic mass with a well-defined border measuring 41 × 12 mm in size in the lower inner quadrant of the right breast. (B) Chest computed tomography shows a lobulated nodule with gradual contrast enhancement in the right breast (arrows). (C) Papanicolaou staining of a fine-needle aspiration cytology specimen shows ductal cells with myoepithelial cells, suggestive of fibroadenoma (scale bar = 100 μm)

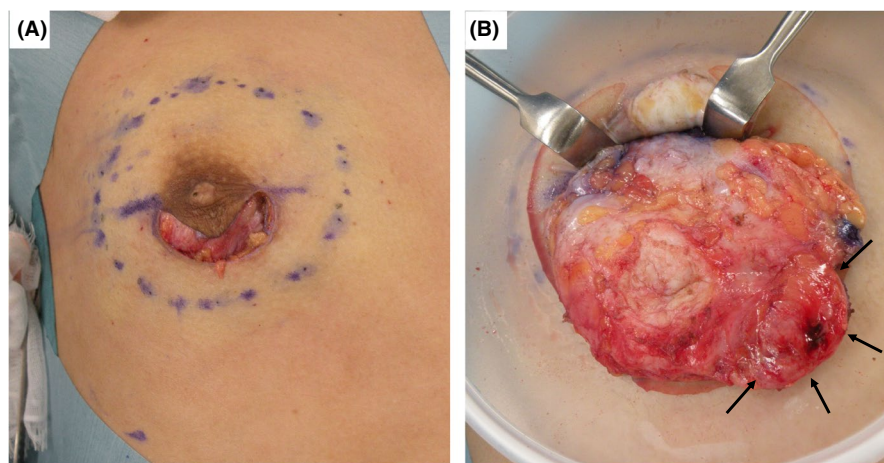


FIGURE 2 Intraoperative finding. The whole mammary gland tissue, including a smooth-surfaced mass (arrows), was resected through a periareolar incision (A and B)

swelling of the right breast, suggestive of gynecomastia and a lobulated nodule with gradual contrast enhancement in the lower inner quadrant of the right breast (Figure 1B). Fine-needle aspiration cytology showed a biphasic population composed of spindle stromal cells and ductal cells (Figure 1C). Naked nuclei, myoepithelial cells, and apocrine metaplastic cells were also observed. Based on these findings, the lump was considered to be a fibroadenoma.

As the swelling of the breast impaired the patient's body image, he had been very concerned about it. Hence, he requested resection of the mass together with the surrounding mammary gland, and we performed a nipple-sparing mastectomy through a periareolar incision (Figure 2). Gross examination revealed a well-circumscribed, unencapsulated, multilobulated nodule measuring 3.2 cm in its greatest diameter. The cut surface showed a gray-white solid nodule in the thickened mammary gland (Figure 3A). Histopathological examination revealed an

unencapsulated tumor delimited from the surrounding breast tissue, and proliferation of both glandular and stromal elements was observed, which was compatible with fibroadenoma (Figure 3B). A marked increase in fibrosis in the interstitium and hyalinization was observed in the background mammary gland tissue. These findings were consistent with those of intermediate gynecomastia. The patient was healthy with no evidence of local recurrence after 2 years of follow-up and was satisfied with the appearance of the right breast. Written informed consent was obtained from the patient for publication of this report and the accompanying images.

3 | DISCUSSION

Fibroadenomas in the male breast are rare. Historically, some pathologists were skeptical of the existence of

FIGURE 3 (A) Gross appearance of the cut surface of the resected specimen. An oval-shaped lobulated mass 32×15 mm in size was found in the medial region of the thickened mammary gland. (B) Histopathological examination shows an unencapsulated tumor delimited from the surrounding breast tissue, and proliferation of both glandular and stromal elements is observed, which is compatible with fibroadenoma (hematoxylin-eosin staining, scale bar = 200 μ m)

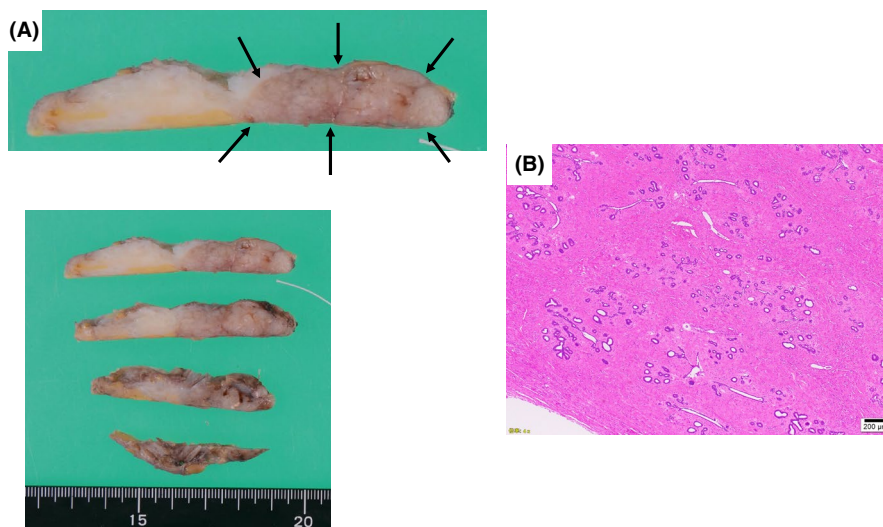


TABLE 1 Reported cases of fibroadenoma in male patients

First author	Year reported	Age (y)	Comorbidities	Hormone therapy (or other drugs)
Present case	2021	27	None	No
Van den Berge ³	2020	0	None	No
Faria ⁴	2019	43	Transgender	Yes
Agarwal ⁵	2016	18–23 (Not specified)	None	No
Agarwal ⁵	2016	18–23 (Not specified)	None	No
Agarwal ⁵	2016	18–23 (Not specified)	None	No
Goyal ⁶	2015	23	None	No
Ashutosh ⁷	2013	72	Prostate carcinoma	Yes
Gupta ⁸	2011	75	Prostate carcinoma	Yes
Adibelli ⁹	2010	68	Rectal carcinoma, polyposis coli	No
Shin ¹⁰	2007	66	Prostate carcinoma	Yes
Lemmo ¹¹	2003	35	Transgender	Yes
Davis ¹²	2001	19	Complete androgen insensitivity syndrome	No
Kanhai ¹³	1999	22	Transgender	Yes
Uchida ¹⁴	1992	40	None	No
Nielsen ¹⁵	1990	69	Heart failure	Spirolactone

male fibroadenoma and considered that the reported male fibroadenomas were nodular foci of gynecomastia.² There appears to have been approximately only 15 cases of male fibroadenoma reported in the English literature to date (Table 1).^{3–15} It has been suggested that proliferative changes in the male breast, such as gynecomastia and fibroepithelial lesions, are caused by hormonal imbalances or medications not primarily intended to target the breast. Fibroadenomas are known to have both estrogen and progesterone receptors,¹¹ and most of the reported male fibroadenomas have occurred in

male-to-female transgender patients or patients receiving estrogen therapy for a medical condition such as prostate carcinoma.^{10,16,17} Thus, fibroadenomas in men without hormone treatment or with normal hormone levels are extremely rare.

However, Agarwal et al.⁵ reported three cases of idiopathic fibroadenomas occurring in healthy young males that increased in size over a couple of years, which were similar to our present case. The current reported case is considered an idiopathic fibroadenoma that occurred in a healthy young male adult; however, the duration of illness

was longer than that in cases reported by Agarwal et al. Although the etiology of fibroadenoma in this patient was unclear, it is possible that he had considered the breast swelling after puberty, which is experienced by more than half of boys as a normal occurrence,¹⁸ as the onset of fibroadenoma.

It has been reported that the most common male breast mass is gynecomastia, followed by lipoma and epidermal inclusion cysts.¹⁹ If no mass is detected by diagnostic imaging, the lesion is considered gynecomastia. However, gynecomastia is sometimes caused by hormone-producing tumors such as Sertoli-Leydig testicular tumors and functional adrenal cortical tumors, liver disease, or genetic disorders such as Klinefelter syndrome,²⁰ we should proceed with the examination keeping these diseases in mind. If a mass is detected, we should carefully investigate the possibility of breast cancer, especially for a painless subareolar mass, which is the condition in the present case. Although the prevalence of male fibroadenoma is very low, it should still be considered as a differential diagnosis when a mass is seen in the male breast.

In the present case, the patient requested resection of the tumor and the enlarged mammary glands because they have impaired his body image since adolescence. As a result, performing the resection resulted in an apparent improvement in the quality of life (QOL) of the patient. In conclusion, it should be noted that swelling of the breast due to benign disease can cause a complex emotional distress in men, and surgical resection of the benign breast lesion would be able to improve their QOL.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

All authors, except TU, were involved in the management during the clinical course. HM and TK performed the operation. TU performed the pathological diagnosis. HM and KI contributed to drafting the manuscript. All authors have read and approved the final manuscript.

ETHICAL APPROVAL

Not applicable.

CONSENT

Written informed consent was obtained from the patient for publication of this case report and the accompanying images.

DATA AVAILABILITY STATEMENT

Please contact the author for data requests.

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