Giant Fibroadenoma Mimicking Phylleoyeds Tumor

Abstract

A 36-year-old lady presented with progressively enlarging mass in her right breast. Core biopsy showed a benign proliferative breast lesion. Total excision of the mass was done with and the final histopathology features were suggestive of giant fibroadenoma.

Keywords: Breast; Giant fibroadenoma; Phylleoyeds

Introduction

Giant fibroadenoma, and phyllodes are rare breast pathologies but are essential differential diagnoses to be considered for any rapid enlargement large breast mass [1]. Since giant fibroadenoma, and phyllodes have different management approach, it is important to distinguish them preoperatively. However, distinguishing them preoperatively is challenging [2]. We report a case of giant fibroadenoma of the breast mimicking phyllodes tumor in a 36-year-old lady.

Case Report

A 36-year-old lady was referred to the Breast Surgery Clinic of King Faisal Hospital and Research Center (KFSH&RC), Riyadh, Saudi Arabia, as a case of right huge breast mass. She presented with history of right breast mass that was increasing in size during one year interval. There was no history of nipple discharge or breast skin changes. No history of previous breast trauma or breast pain. In addition, there was no history of swelling in any other part of the body including the axilla. The patient has a regular period and she did not receive any kind of hormonal therapy. The patient’s past history was negative and her family history was negative for cancer. Physical examination showed an obese lady with a BMI of 31. She has a normal general examination with stable vital signs. Local examination revealed size asymmetry between left and right breasts. The left breast and axilla examination was within normal. However, there was a palpable big mass in the right breast 19 x 13 cm, freely mobile, not tender and with no skin changes. No palpable right axillary lymph nodes.

Routine blood work labs were within normal. Bilateral Mammogram was performed and showed dense left breast parenchyma with no suspicious masses or micro calcifications with no enlarged left axillary lymph nodes. However, there was huge circumscribed rounded high density mass measuring 19.2 cm in its maximum CC dimension with scattered benign calcifications (Figure 1). The findings demonstrated BIRDS 4 with an impression of phyllodes tumor. There was no enlarged right axillary lymph node. Ultrasound (US) breasts showed a heterogeneously dense breasts parenchyma with a large right hypoechoic well defined capsulated mass which is measuring about 15.8 x 4 cm (Figure 2). There is associated internal heterogeneity and cystic component with minimal increase in vascularity. The images demonstrate a BIRADS 4A with a differential diagnosis of pseudoangiomatosus stromal hyperplasia (PASH), phyllodes tumor (PT) or stromal tumor. Core needle biopsy from the right breast mass showed a sderosing adenosis and fibrocystic changes.

The patient was counseled for right nipple sparing mastectomy and left breast mastopexy but she refused. However, she agreed to go for right breast wide local excision and breast reduction. Intraoperative the patient found to have well circumscribed encapsulated mass, rubbery in nature with smooth surface.

The final pathology revealed benign fibroadenoma-like lesion, containing areas of PASH, myofibroblastic proliferation, and fibrocystic changes including cysts, fibrosis, adenosis, apocrine metaplasia, and sclerosing adenosis (Figure 3). The mass size was 16.5 cm with negative margins. So far the patient followed up for 9 months with no recurrent so far. He will be followed for another one year then the patient will be asked to go for annual screening mammogram.

Figure 1: Mammography of left breast showing the giant fibroadenoma.
Discussion

Fibroadenoma is a common benign breast lesion that usually arises in young females with age range from 20 to 35 years old, but it can occurred at any age. It is a benign lesion containing epithelial and stromal elements [3-5]. Giant fibroadenoma is rare form accounting for around 4% and it defined as a fibroadenoma measuring at least 5 cm in diameter [6,7]. It requires surgical excision since it may lead to breast deformity, and it raises the suspicion of malignancy [8-11]. It is an estrogen induced benign tumor, which may get stimulated by pregnancy and lactation and regressed postmenopausal [10,12].

There are two major pathological types of fibroadenoma [13]. The first type is simple fibroadenoma which has epithelial and stromal elements only and the second type is the complex fibroadenoma which may contain sclerosing adenosis, foci of cysts, papillary apocrine metaplasia, and epithelial calcifications [13]. Patient with a complex fibroadenoma are at higher risk of developing future breast cancer [13]. Our patient found to have the complex one.

Both giant fibroadenoma and phyllodes tumor (PT) arise from breast intralobular stroma [10]. Therefore, there are a lot of overlaps between the giant fibroadenoma and PT specially benign or borderline tumors, so it is critical for a surgeon to differentiate a giant fibroadenoma from PT. This in fact important since therapeutic approach may differ [14,15]. Physical examination is not diagnostic since both may present as a big mass which may cause breasts a symmetry or skin pressure changes. The mammography, breast ultrasound (US) and the breast magnetic resonance imaging (MRI) help to identify the site and the size of the mass, and exclude multifocal disease [16-19].

However, physical examination and standard breast radiographic evaluations could fail to differentiate giant fibroadenoma from PT in many cases [20].

The fine needle aspiration (FNA) cytology can diagnose the phyllodes with an accuracy of only 63% which can rich up to 92.8% [2,21]. In contrast, core biopsy can confirm the diagnosis and rule out other pathologies. In core biopsy malignant PT usually can be extinguished easily from fibroadenoma, however it is difficult to differentiate the giant fibroadenoma from benign and borderline PTs. Usually, PT has an elements of columnar stromal cells with pleomorphism, nuclear atypia and low epithelial ratio in core biopsy [4,22,23]. A core biopsy diagnosis of fibroadenoma does not completely exclude the diagnosis of phyllodes tumor [24].

While surgical treatment for giant fibroadenoma is excision (as was done in our patient) [9], surgical treatment for PT is wide excision with a 1 cm margin of normal breast tissue or mastectomy [25]. However, after complete surgical excision both giant fibroadenoma and PT can recur [1,26], but the possibility of giant fibroadenoma recurrence decrease after the third decade [11,14]. For PT axillary lymph node dissection (ALND) is not required, except if they are involved with tumor [27]. Local recurrence occurs in 5-15% of benign PT and 20-30% of malignant PT [26].

Our patient found to have a complex giant fibroadenoma which was excised completely with negative margins. However, the patient need regular follow-up.
Conclusion

Diagnosis and management of large breast masses is still challenging. Giant fibroadenoma is a rare breast disease and should be histologically differentiated from phyllodes in clinical practice. Core cut biopsy is the most useful investigation, when clinical suspicion of phyllodes tumour is raised, but it is important to remember that a core biopsy diagnosis of fibroadenoma does not completely exclude the diagnosis of phyllodes tumor.

References

1. Thuruthiyath N, Das PC, Avsbratha KS, Mascarenhas V, Marla N (2012) Giant fibroadenoma of breast in an adolescent girl. Oman Med J 27(4): 314-315.
2. Jacklin RK, Ridgway PF, Ziprin P, Healy V, Hadjiminas D, et al. (2006) Optimising preoperative diagnosis in phyllodes tumour of the breast. J Clin Pathol 59(S5): 454-459.
3. Reinfuss M, Mitsu J, Duda K, Steinh A, Rys J, et al. (1996) The treatment and prognosis of patients with phyllodes tumour of the breast: an analysis of 170 cases. Cancer 77(5): 910-916.
4. Noguchi S, Motomura K, Inaji H, Inaoka S, Koyama H. Clonal analysis of fibroadenoma and phyllodes tumour of the breast. Cancer Res 1993; 53: 4071-4.
5. August DA, Kearney T (2000) Cystosarcoma phylloides: mastectomy, lumpectomy or lumpectomy plus irradiation. Surg Oncol 9: 49-52.
6. Dolmans GH, Hoogbergen MM, van Rappard JH (2007) Giant fibroadenoma of one breast: Immediate bilateral reconstruction J Plast Reconstr Aesthet Surg 60(10): 1156-1157.
7. Brunicardi FC, Andersen DK, Billiar TR, Dunn DL, Hunter JG, et al. (2009) Breast Schwartz SI Principles of Surgery. 9th edn, McGraw-Hill New York, USA, pp. 797-915.
8. Chang DS, McGrath MH (2007) Management of benign tumors of the adolescent breast. Plast Reconstr Surg 120(1): 13e-19e.
9. Cheplä KJ, Armijo BS, Ponsky TA, Soltanian HT (2011) Benefits of immediate dermoglandular preserving resection following giant fibroadenoma excision in two patients. J Plast Reconstr Aesthet Surg 64(9): e244-e247.
10. ParkCA, David LR, Argenta LC (2006) Breast asymmetry: presentation of a giant fibroadenoma. Breast 12(5): 451-461.
11. Simmons RM, Cance WG, Iacica MV (2000) A Giant Juvenile Fibroadenoma in a 12-Year-Old Girl: A Case for Breast Conservation. Breast J 6(6): 418-420.
12. Greydanus DE, Parks DS, Farrell EG (1989) Breast disorders in children and adolescents. Pediatr Clin North Am 36(3): 601-638.
13. Dupont WD, Page DL, Parf FF, Vennvak-Jones CL, Plummer WD Jr, et al. (1994) Long-term risk of breast cancer in women with fibroadenoma. N Engl J Med 331(1): 10-15.
14. Kumar V, Abbas K, Fausto N (2004) Robbins and Cotran Pathologic basis of disease. 7th edn, Saunders, Philadelphia pp. 1149-1150.
15. Krishnamurthy S, Ashfaq R, Shin HJ, Sneige N (2000) Distinction of phyllodes tumor from fibroadenoma: A reappraisal of an old problem. Cancer 90(6): 342-349.
16. Rattan K, Kumar S, Dhull AK, Kaushal V, Kaur P (2008) Giant Fibroadenoma Mimicking Phyllodes Tumor in a Young Female: A Cytological Dilemma. The Internet Journal of Third World Medicine 6(2): 1-4.
17. Jorge BA, Vargas SB, Rodriguez RR, Martinez CE (1999) Phyllodes tumours of breast. Eur Radiol 9(2): 356-360.
18. Feder JM, de Paredes ES, Hogge JP, Wilken JF (1999) Unusual breast lesions: radiologic-pathologic correlation. Radiographics 19 Spec No: S11-S26.
19. Cosmacini P, Zurruda S, Veronesi P, Bartoli G, Coopmans de Yoldi GF (1999) Phyllode tumor of the breast: mammographic experience in 99 cases. Eur J Radiol 15(1): 11-14.
20. Page JE, Williams JE (1991) The radiological features of phyllodes tumour of the breast with clinico-pathological correlation. Clin Radiol 44(1): 8-12.
21. Jayaram G, Stanshaw P (2002) Fine-needle aspiration cytology of phyllodes tumours. Diagn Cytopathol 26(4): 222-227.
22. Geiser DP, Boyle MJ, Mahnart KE, McGee JM, Nolen MG, et al. (2000) Phyllodes tumors of the breast: a review of 32 cases. Am Surg 66(4): 360-366.
23. Lee AH, Hodi Z, Ellis IO, Elton CW (2007) Histological features useful in the distinction of phyllodes tumour and fibroadenoma on needle core biopsy of the breast. Histopathology 51(3): 336-344.
24. Abe M, Miyata S, Nishimura S, Iijima K, Makita M, et al. (2011) Malignant transformation of breast fibroadenoma to malignant phyllodes tumor: long-term outcome of 36 malignant phyllodes tumors. Breast Cancer 18(4): 268-272.
25. Chaney AW, Pollack A, McNeese MD, Zagaris GK, Pisters PW, et al. (2000) Primary treatment of cystosarcoma phylloides of the breast. Cancer 89(7): 1502-1511.
26. Norris HJ, Taylor HB (1967) Relationship of histologic features to behavior of cystosarcoma phylloides. Analysis of ninety-four cases. Cancer 20(12): 2090-2099.
27. Pietruszka M, Barnes L (1978) Cystosarcoma phylloides: a clinicopathologic analysis of 42 cases. Cancer 41(5): 1974-1983.