International Journal of Surgery Science

E-ISSN: 2616-3470
P-ISSN: 2616-3462

www.surgeryscience.com
2020; 4(1): 188-190
Received: 04-11-2019
Accepted: 06-12-2019

Atia Zaka Ur Rab
Professor, Department of Surgery, Jawaharlal Nehru Medical College and Hospital, AMU, Aligarh, Uttar Pradesh, India

Sheikh Saif Alim
Junior Resident, Department of Surgery, Jawaharlal Nehru Medical College and Hospital AMU, Aligarh, Uttar Pradesh, India

Wasif Mohammad Ali
Assistant Professor, Department of Surgery, Jawaharlal Nehru Medical College and Hospital; AMU Aligarh, Uttar Pradesh, India

Corresponding Author:
Atia Zaka Ur Rab
Professor, Department of Surgery, Jawaharlal Nehru Medical College and Hospital, AMU, Aligarh, Uttar Pradesh, India

Giant phyllodes tumor of breast post fibroadenoma excision: A rare case report and review of literature

Atia Zaka Ur Rab, Sheikh Saif Alim and Wasif Mohammad Ali

DOI: https://doi.org/10.33545/surgery.2020.v4.i1d.331

Abstract
Phyllodes tumors are uncommon fibro-epithelial lesions that usually grow up to 4 cm in size, but tumors >10 cm in size have been described which are known as giant phyllodes tumors. We are reporting a case of 27-year-old married female who presented as Giant Phyllodes tumor involving her right breast for past 1-year post fibroadenoma excision and review of literature.

Keywords: Fibroadenoma, phyllodes tumor, cystosarcoma phyllodes, benign tumors

Introduction
Phyllodes tumor are rare tumors having an incidence of about 2.1 per million, the peak of which occurs in women aged in between 45 to 49 years [1, 2]. They originate from the Greek word "*phyllon*" meaning a leaf, which is histologically classical for phyllodes tumor. It is also known as a Disease of Brodie and make up 0.3 to 0.5% of female breast tumors [3]. Phyllodes tumours typically grow up to 4 cm in size, with tumors larger than 10 cm are designated as "Giant Phyllodes Tumors". The neoplasms were first described by Johannes Müller in 1838, [4] who also coined the term "Cystosarcoma Phyllodes". The tumors are widely classified as per the recommendations of WHO into Benign, Borderline and Malignant types [5]. Accurate preoperative pathological diagnosis allows correct surgical planning and also avoids reoperation. Malignant phyllodes tumors, if inadequately treated, have a propensity for rapid growth and metastatic spread. In contrast, benign phyllodes tumors on clinical, radiological, and cytological examination are often indistinguishable from fibroadenomas and can be cured by excision which can be either wide local excision or mastectomy provided histologically clear specimen margins are ensured.

Presentation of Case
A 23-Year-old female presented with complaints of lump in her right breast. As per the patient, she had a small lump in her right breast which was excised at some other hospital 1 and ½ year back, the histopathology report of which suggested it to be a Fibroadenoma. Subsequent to the surgical excision, the lump recurred at the surgical site and rapidly progressed to involve whole of her right breast. There was also history of bloody discharge from the nipple which was on and off for the past 4 months.
Examination of the breast revealed a large lump of approximately 22 × 16 cm in size, involving whole of the breast. The swelling was non tender, bosselated, hard in consistency, with ill-defined margins and ulceration of skin overlying the tumor [Figure- 1A and 1B].
USG Breast showed- a large ill-defined heterogenous predominantly hypoechoic lesion with few cystic changes with irregular lobulated margins and increased vascularity involving whole of the right breast with involvement of overlying skin [BIRADS 4C].
Pre op core needle biopsy from the lump revealed cluster of benign ductal epithelial cells along with overlying myoepithelial cells suggestive of "Benign proliferative breast disease" either Phyllodes or fibroadenoma. Accordingly, a differential diagnosis of a "Giant Phyllodes Tumor" and "Giant Fibroadenoma" was kept in our case. There was no involvement of axillary lymph nodes in both sides. Subsequently, a Simple Mastectomy was performed and the specimen sent for histopathological diagnosis.

On gross examination, the tumor measured 28.2x18 cm and weighed 5.62 kgs.

The histopathology of the excised specimen showed stromal overgrowth and hypercellularity (moderate) composed of spindly cells with eosinophilic cytoplasm and mild to moderate nuclear pleomorphism [Figure-2A, 2B]. Few mitosis (1-2 per 10 hpf) was also seen. The ducts were compressed with leaf like architecture [Figure-2A, 2B]. Stroma showed myxoid areas with foci of fibrocystic changes [Figure-3]. No tumor cells seen in the bed and in the axillary tail.

Depending upon the histopathology report, we made a diagnosis of Benign Phyllodes Tumor with low malignant potential.

The postoperative period was uneventful and patient was discharged in satisfactory condition on the 6th post-op day after removal of the drain.

Fig 1A, 1B: Bosselated right breast with presence of ulcerated fungating mass involving outer lobe of the breast with contact bleeding

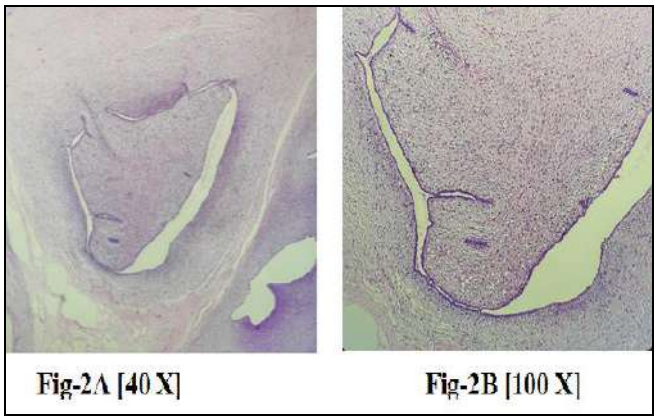

Fig 2A, 2B: H & E stained section showing compressed ductal elements with leaf like architecture. Stroma show myxoid changes.

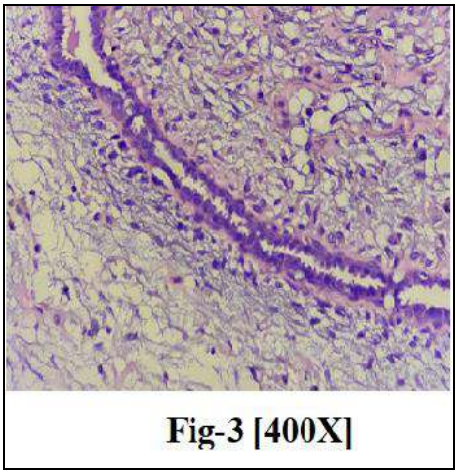

Fig 3: H & E stained section showing overgrowth and hypercellularity (moderate) composed of spindly cells with eosinophilic cytoplasm and mild to moderate pleomorphism

Discussion

Phyllodes tumors of the breast are rare biphasic fibro-epithelial lesions containing both stromal (connective) and glandular (lobule and duct) tissue [6]. The lesion mimics benign fibroadenoma and it is important to differentiate between the two entities. Phyllodes tumors contain a large spectrum ranging from benign or borderline to malignant according to features such as tumor margins, stromal overgrowth, tumor necrosis, cellular atypia, and number of mitosis per high power field [7]. It accounts for less than 1% of all breast neoplasms and women between 35 and 55 years of age are most commonly affected with the median age of presentation being at 45 years [8]. Tumors larger than 10 cm are called giant tumors, and these are found in 20% of the phyllodes tumors [9].

On macroscopy, benign phyllodes tumors show a well-circumscribed lobulated and solid firm mass with a white tan whorling on cut surface, which is similar to a fibroadenoma. Larger tumors of malignant types tend to develop a haemorrhagic and necrotic areas with curved protrusions into the parenchymal spaces [8]. Unlike phyllodes tumours, fibroadenomas have a true capsule.

The diagnosis of phyllodes tumor have been well established as per recommendations of WHO [5]. It is diagnosed when the fibro-epithelial architecture shows an exaggerated intracanalicular leaf like fronds protruding into cystically dilated spaces accompanied by hypercellularity. A benign phyllodes tumor is characterized by mildly increased stromal cellularity and irregular borders. A fibroadenoma on the other hand may have increased stromal cellularity and has a circumscribed margin which cannot be assessed on biopsy. Therefore, it may be difficult to distinguish a fibroadenoma and phyllodes tumour on biopsy. Furthermore, the distinction of benign and borderline phyllodes tumor using the criteria of microscopic findings [7] can be very subjective and hence the accurate diagnosis is usually made only through the excised specimen.

A malignant phyllodes tumour is distinguished from a benign / borderline phyllodes tumor by the presence of marked stromal cellularity, cellular atypia, permeative margins and mitotic activity of at least 10/10HPF.

Most fibroadenomas have polyclonal elements and are regarded as hyperplastic rather than neoplastic lesions [10]. Phyllodes tumor have a similar polyclonal element, but somatic mutation is postulated to occur resulting in the monoclonal proliferation which results in its development [10]. Stromal proliferation can also occur as a result of growth factors induction in the breast epithelium. Increased endothelin-1 levels have also been demonstrated within phyllodes tumors [11,12]. Trauma, lactation, pregnancy and increased oestrogen activity occasionally have been implicated as factors stimulating tumor growth. Genetic predilection namely Li-Fraumeni syndrome is the most commonly quoted genetic alterations in phyllodes tumours [13].

Surgery is the mainstay of management in phyllodes tumors and surgery done is either breast conserving surgery or mastectomy without axillary staging. In wide excision, the tumor should be resected with margin of more than 1 cm. Routine axillary dissection is not recommended as phyllodes tumors only spread hematogenously. While spread to the axillary lymph node occurs in less than 1% patients, [14].

The treatment of choice for borderline and malignant phyllodes tumor is simple mastectomy. Malignant phyllodes tumors are more likely to recur after breast conserving surgery than benign types [15]. In certain cases, immediate breast reconstruction especially rotational flap can be performed at the time of mastectomy for skin closure or cosmetic purposes [14].

The role of adjuvant radiotherapy is still unclear and still under study. It is usually recommended for positive surgical margin postoperatively and for local control of borderline and malignant phyllodes tumors [16]. The results of adjuvant radiotherapy are encouraging in patients with high risk features such as bulky tumors, hypercellular stroma, high nuclear pleomorphism, high mitotic rate, presence of necrosis, and increased vascularity within the tumor [16]. Hence, giving adjuvant radiotherapy in margin-negative resection can provide an effective way of local control of borderline and malignant phyllodes tumors.

The role of chemotherapy remains uncertain but consideration can be given for their use in cases of malignant phyllodes tumours. Adjuvant chemotherapy using doxorubicin and ifosfamide with 6 cycles with an interval of 28 days between each cycle has been practiced giving promising results [17].

Lung is the most common distant metastatic area, followed by bone and abdominal viscera [18]. They can develop without evidence of local recurrence.

Conclusion

Phyllodes tumors of the breast are rare neoplasms. Diagnosis is obtained by clinical appearance and core biopsy. The option of treatment depends on histological diagnosis with surgery either wide excision or mastectomy without axillary surgery. Radiotherapy and chemotherapy are reserved for selected cases with specific indications. Further studies need to be organized regarding role of adjuvant treatment especially in borderline and malignant phyllodes tumours.

References

1. Salvadori B, Cusumano F, Del Bo R *et al*., Surgical treatment of phyllodes tumors of the breast, Cancer, 1989; 63(12):2532-2536.
2. Bernstein L, Deapen D, Ross RK. The descriptive epidemiology of malignant cystosarcoma phyllodes tumors of the breast," Cancer, 1993; 71(10):3020-3024.
3. Rowell MD, Perry RR, Hsiu JG, Barranco SC. Phyllodes tumors, The American Journal of Surgery, 1993; 165(3):376-379.
4. Müller J. Uber den feineren Ban und Die Formen der Krankaften Geschwulste. Berlin: G Reiner, 1838; 1:54-7.
5. Lakhani SR, Ellis IO, Schnitt SJ, Tan PH, van de Vijver MJ. (Eds.), World Health Organization Classification of Tumours of the Breast, IARC Press, Lyon, 2012.
6. Chulia MT, Paya A, Niveiro M *et al*. Phyllodes tumor in ectopic breast tissue of the vulva. Int J Surg Pathol. 2001; 9:81-3.
7. Tan BY, Acs G, Apple SK *et al*. Phyllodes tumours of the breast: a consensus review. Histopathology. 2016; 68:5-21.
8. Parker SJ, Harries SA. Phyllodes tumours. Postgrad Med J. 2001; 77:428-35.
9. Liang MI, Ramaswamy B, Patterson CC *et al*. Giant breast tumors: surgical management of phyllodes tumors, potential for reconstructive surgery and a review of literature. World J Surg Oncol. 2008; 6:117.
10. Noguchi S, Motomura K, Inaji H, Imaoka S, Koyama H. Clonal analysis of fibroadenoma and phyllodes tumor of the breast. Cancer Res. 1993; 53:4071-4.
11. Yamashita J, Ogawa M, Egami H. Abundant expression of immunoreactive endothelin-1 in mammary phyllodes tumour-possible paracrine role of endothelin-1 in the growth of stromal cells in phyllodes tumour. Cancer Res. 1992; 52:4046-9.
12. Esposito NN, Mohan D, Brufsky A, Lin Y, Kapali M, Dabbs DJ. Phyllodes tumor: A clinicopathologic and immunohistochemical study of 30 cases. Arch Pathol Lab Med. 2006; 130:1516-21.
13. Toh YF, Cheah PL, Looi LM, Teoh KH, Tan PH. Phyllodes tumours of the breast: retrospective analysis of a University Hospital's experience. Malays J Pathol. 2016; 38:19-24.
14. Islam S, Shah J, Harnarayan P, Naraynsingh V. The largest and neglected giant phyllodes tumor of the breast- A case report and literature review. International J Surgery. 2016; 26:96-100.
15. Barth RJ. Histologic features predict local recurrence after breast conserving therapy of phyllodes tumors. Breast Cancer Res Treat. 1999; 57:291.
16. Chaney AW, Pollack A, Mcneese MD, Zagars GK. Adjuvant radiotherapy for phyllodes tumor of breast. Radiation Oncology Investigations. 1998; 6:264-7.
17. Krishnamoorthy R, Savasere T, Prabhuswamy, Kumar V, Babu R, Shivaswamy S. Giant malignant phyllodes tumour of breast. Case reports in oncological medicine. 2014; 2014:2090-5.
18. Shahi KP. Management of non-metastatic phyllodes tumors of the breast: review of the literature. Surg Oncol. 2011; 20:143-8.