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Surgical Treatment and Recurrence of Phyllodes Tumor

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ABSTRACT

Objective — *To evaluate the different surgical options and their postoperative recurrence rates in patients with phyllodes tumor.*

Study design — *Descriptive case series.*

Place & Duration of study — *Department of Surgery, Hayatabad Medical Complex Peshawar, from* January 2015 to December 2018.

Methodology — *Twenty five female patients with confirmed diagnosis of phyllodes tumor, were admitted through Out Patient Department (OPD). Patients were categorized into benign, borderline and malignant types using WHO classification. After preoperative assessment, surgery was performed under general anesthesia. Patients were followed up in the OPD for one year and data was recorded.*

Results — *The mean age of patients was 41 year (range 20-65 year). Fifteen (60%) cases were benign, 4 (16%) borderline and 6 (24%) malignant. Right breast was involved in 14 (56%) cases and the most commonly (n=18 - 72%) affected site was upper and outer quadrant. Surgical procedures performed were wide local excision with one cm clear margin (n=19 - 76%) and simple mastectomy (n=6 - 24%). Five (20%) cases were picked up with local and systemic recurrence. No patient developed distant metastasis. There was no mortality.*

Conclusion — *Wide local excision with adequate clearance is a better option followed by chemotherapy to minimize the risk of local and systemic recurrence.*

Key words — *Phyllodes tumor, Surgical excision, Breast tumor*.

INTRODUCTION:

Phyllodes tumor is an uncommon fibroepithelial tumor of adult female breast. It follows an unpredictable clinical course and resembles a fibroadenoma. It is 0.3% to 1% of all primary breast neoplasms and accounts 2.5% of fibroepithelial lesions of the breast.[1,2] Phyllodes tumor sometimes presents as a large massive tumor with an unevenly bosselated surface and is mobile over the chest wall.[3] Phyllodes tumor has a variable but a usually benign course. It has got the propensity to recur locally and also the ability to metastasize.[4] They are commonly found between 35 year to 55 year of age. They are classified by WHO into benign (less than 4 mitosis PHF), borderline (5-9 mitosis PHF) and malignant (more than 10 PHF) on the basis of their histological features like cellular atypia, mitotic activity and stromal overgrowth. Other features related to malignancy are tumor necrosis, pleomorphism and pushing versus infiltrative margins.[5,6] These factors are associated with high risk of recurrence and metastasis.[6] Although distant metastasis are uncommon but can occur through blood stream to lungs and bones. Lymphatic spread is unusual.[7,8]

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Twenty percent of benign as well as malignant tumors have the propensity to recur.[8]

Most of the phyllodes tumors are missed before surgery.[4] Diagnostic modalities include clinical examination, mammography / ultrasonography and fine needle aspiration cytology but definitive diagnosis needs histological confirmation. Tumor markers such as Ki67 and P53 may be informative for further evaluation and postoperative recurrence of malignant neoplasm.[9] The primary surgical treatment is wide local excision with more than one cm clear margin for clearance.[10] Recurrent, malignant and large massive tumors need simple mastectomy. Postoperative radiotherapy to the chest wall is advocated to decrease recurrence and improve disease free survival.[7,8,11] The purpose of the study was to evaluate the surgical treatment options and postoperative outcome in terms of recurrence

METHODOLOGY:

This descriptive case series study was conducted in the Department of Surgery, Hayatabad Medical Complex Peshawar, from January 2015 to December 2018. A total of 25 female patients were included. Diagnosis was made after triple assessment i.e examination, Ultrasound, mammography and FNAC/tru-cut biopsy. Tumors were graded into benign, borderline and malignant by using WHO classification. Patients having malignant disease were investigated for distant metastasis. Patients having associated comorbid diseases were excluded. All patients were investigated to assess their fitness for general anesthesia. They underwent either wide local excision with one cm clear margin or simple mastectomy. Postoperative patients were monitored in the ward, orally allowed in the evening and sent home after 1-2 days. Patients having malignant phyllodes tumor were advised adjuvant chemotherapy. Patients were followed up in the OPD. After 10 days, stitches removed and wound assessed for infection. Subsequent follow up visits were at one month, 3 months and 6 months after surgery. Parameters like age, parity, site and size of the tumor, surgical procedure, histology and postoperative outcome were recorded on a form. Collected data was analyzed through SPSS version 17.

RESULTS:

A total 25 patients were treated over a period of four years. Their ages were from 20-65 year with a mean age of 41 year. In benign cases, the tumor size was 5cm or less in 10 (66.7%) patients and it was more than 5 cm in 5 (33.3%) cases. In borderline tumors, 3 (5%) patients had tumor size 5 cm or less while one (25%) had more than 5 cm tumor. In malignant cases, 4 (66.7%) patients had tumor size of 5 cm or less and while 2 (33.3%) had tumor size more than 5 cm. The overall average tumor size was 4-9 cm (table I).

Right breast was involved in 14 (56%) and left breast in 11 (44%) patients. Out of 25 patients, the upper and outer quadrant was involved in 18 (72%). Central tumor was picked in 3 (12%) patients while 4 (16%) had tumors at other sites. According to histopathological reports, 15 (60%) patients had benign disease. 04 (16%) had borderline and 6 (24%) turned out to be malignant.

The surgical procedures performed were wide local excision with one centimeter clear margin in 19 (76%) patients and simple mastectomy in 6 (24%). Out of 19 patients who underwent wide local excision, 14 (73%) had benign tumor, 03 (15%) borderline and 2 (10.5%) were malignant. In six patients in whom simple mastectomy was performed, 1 (16.7%) was benign, 1 (16.7%) borderline and 4 (66.6%) of malignant type (table II).

Twenty (80%) patients successfully completed their follow up visits while 5 (20%) cases including 02 benign, 01 borderline and 02 malignant were lost during follow up. Two (13.3%) cases of benign phyllodes tumor developed local recurrence. Similarly 2 (50%) borderline and 1 (16.7%) malignant cases each had recurrent disease (table III). Patients with recurrent disease (2 benign and 2 borderline)

Table I: Tumor Size

Tumor type	Size		Total
	< 5cm	>5cm	n (%)
Benign (n %)	10 (66.6%)	05 (33.3%)	15 (60%)
Borderline (n %)	03 (75%)	01 (25%)	04 (16%)
Malignant (n %)	04 (66.7%)	02 (33.3%)	06 (24%)
Total (n %)	17	08	25

Table II: Histopathology and Procedure Performed			
Histopathology		**Wide Local Excision n=19 (76%)**	**Mastectomy n=6 (24%)**
Benign	n=15 (60%)	14 (73.7%)	1 (16.7%)
Borderline	n=4 (24%)	03 (15%)	1 (16.7%)
Malignant	n=6 (24%)	02 (10.5%)	4 (66.7%)

Table III: Follow Up and Recurrence			
No. of patients (n)	**Complete Follow up (n %)**	**Incomplete Follow up (n %)**	**Recurrence (n %)**
Benign (n=15)	13 (86.6%)	02 (13.3%)	02 (13.3%)
Borderline (n=4)	03 (75%)	01 (25%)	02 (50%)
Malignant (n=6)	04 (66.6%)	02 (33.3%)	01(16.7%)

underwent mastectomy with axillary clearance and postoperative adjuvant chemotherapy. Similarly one recurrent malignant case was also advised adjuvant chemotherapy. No patient was picked up with distant metastasis during follow up period.

DISCUSSION:

Phyllodes tumor is rare but locally advanced tumor of the breast and it constitutes 1% of all mammary tumors and 2.5% of the mammary fibroepithelial lesions.[8,12] The median age group for these tumor to occur is about 15 years older than the age group for fibroadenoma.[13] In our series the mean age was 41 year. This figure is supported by other studies reporting an age range of 35-38 years.[14,15] Khatoon S et al has reported a mean age of 24 year which shows that the disease is much common in younger age group.[16] Another local study also records a figure of 31 year.[17]

Patients often presents as palpable masses, most commonly located in upper and outer quadrant of breast. They vary greatly in size with a mean size of 4 cm.[4] In our series, we came across 17 (68%) cases having tumor size 5cm or less and 8 (32%) had more than 5cm size tumor. These figures are comparable to 16 (<5cm) and 14 (>5cm) mentioned in a local study.[4] The overall tumor size was from 4 to 9 cm which is almost comparable to 8-15 cm reported in a study.[16] Another local study reports a tumor size of 3-11 cm (mean 5.7cm) for benign, 7-12 cm (mean 10.25cm) for borderline and 10-37 cm (mean 15.3 cm) for malignant neoplasms.[17]

In the current study, right side breast was involved in 14 (56%) and left side in 11 (44 %) patients. The most commonly involved site was upper and outer quadrant (72%). Sabban et al noted that right side breast involved in 87.5% cases. He also observed that nulliparous women are more commonly affected.[18] Damani SR et al noted that left side breast is involved in 12 (40%) and right side in 16 (53.3%) patients. In a study 11 (36.6%) patients had tumor located in the upper and outer quadrant.[4] Another study found upper and outer quadrant involvement in 27 (77.14%), central tumor in 22.8% patients.[16] Soomro SA noted 60% involvement of left breast.[17]

Out of 25 patients 60% were benign, 16% borderline and 24% malignant type. Karim RZ et al noted 35-85% benign, 07-40% borderline and 07-45% malignant phyllodes tumor in their study.[19] A local study reports 50% benign, 26.6% borderline and 23.3% malignant cases.[4] Similarly other studies reported 45.45% and 71.4% benign, 18.18% and 14.3% borderline and 36.36% versus 14.3% malignant phyllodes tumors respectively.[16,17]

Surgery is the mainstay of primary treatment of phyllodes tumors. According to proposed guidelines, the aim is to excise the lesion with adequate clear margins to prevent recurrence. In malignant cases, simple mastectomy is recommended. For borderline lesions, the optimal primary treatment is controversial.[20] In this series 19 (76%) patients underwent wide local excision which included 14 (93.3%) benign cases, 3 (75%) borderline and 2 (33.3%) malignant tumors. Six (26%) cases were subjected to simple mastectomy and one each had benign (16.7%) and borderline disease. The reason for mastectomy in these two patients was the large massive size of the tumor occupying the whole breast and excision with adequate clearance was not possible.

Balkacemi Y et al has reported that mastectomy for malignant and borderline tumor had better results than breast conserving surgery.[21] Damani SR et al

performed wide local excision in 15 (100%) benign, 7 (87.5%) borderline and 4 (57.1%) malignant neoplasms. One (12.5%) borderline and 3 (42.9%) malignant cases were subjected to mastectomy.[4] Another study reported 86.4% wide local excision and 13.6% mastectomy.[17] Khatoon S et al performed 26.7% lumpectomies in her series of 35 cases.[16]

We followed our patients in the outpatient department for one year. In literature the follow ups mentioned were from 5 to 33 months (mean 12 month) and 2 years respectively.[4,16] Another local study has reported 6 months follow up for benign cases, 12-18 months for borderline and 12-40 months for malignant phyllodes tumors.[17]

It has been reported in literature that benign as well as malignant lesions recur locally and metastasize distally.[22] We came across 13.3% local recurrence in benign lesion, 50% in borderline and 16.7% in malignant cases. A local study has reported 6.7% local recurrence in benign tumors, 37.5% in borderline and 28.6% in malignant phyllodes tumors.[4] Khatoon S has mentioned 16.66% local recurrence following lumpectomies for benign lesion.[16] Soomro SA had 5 local recurrence (1 benign and 4 borderline cases) and 2 malignant cases developed distant metastasis.[17] The recurrence rate of phyllodes tumor mentioned in literature shows wide variation; benign 1.5%-12%, borderline 0-35% and malignant 3-50%. It indicates an upward trend with increasing grade of the tumor.[19] In our series of 25 cases, we did not come across any case of distant metastasis. Damani SR mentioned that 28.6% cases had distant metastasis. WHO has reported an overall metastatic rate of 10% (benign 0%, borderline 04% and malignant 22%).

Postoperative chemotherapy was given to 6 (24%) malignant and 5 (20%) patients who later on developed local recurrence. The beneficial effects of adequate chemotherapy has been advocated in different studies.[4,16,17,20] In literature it is recommended that adequate chemotherapy for malignant tumors decreases recurrence rate and improves disease free survival.[23] Belkacemi Y et al has recommended radiotherapy to be a more favorable prognostic factor for local control of borderline and malignant lesions.[21] Some authors are of the view that adjuvant systemic therapy is of no proven value.[24] In literature, the 5 years disease free survival rate is 78-91%. [4]

CONCLUSIONS:

Wide local excision with one cm clear margin is preferred over simple mastectomy in patients desiring for breast conserving surgery. Adjuvant chemotherapy further reduces the risk of local and systemic recurrence rate.

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