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Phyllodes Tumor – A Clinicopathological Study

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Abstract: *Phyllodes tumor are biphasic breast tumors occurring usually in adult females and are composed of benign epithelial component and a cellular spindle cell stroma forming leaf like structure. Diagnosis is based on clinical examination, mammography/sonography and FNAC but final diagnosis is based on histological findings. Benign tumors are treated by lumpectomy while recurrent tumors, malignant tumors and massive tumor require mastectomy without axillary dissection. This is a retrospective and prospective study, involving all biopsy proven cases of phyllodes tumor admitted to a tertiary care hospital in Udupi district during the period of January 2007 to June 2013. A total number of 30 cases of phyllodes tumor were reported in the study period from January 2007 to June 2013. Incidence rate is 1.42 among primary breast malignancy. Out of the 30 cases 20 were primary cases, 10 cases already underwent some form of surgery outside before presenting to our hospital. Mean age is 37.43 yrs., 30 cases (100%) presented with lump in breast and only 6 cases (20%) presented with pain associated with the lump. Mean tumor size was 8.1cms and standard deviation of 5.326cms. FNAC was done in 14 patients of which 7 were reported as phyllodes tumor, Trucut done in 7 cases 6 of which were suggestive of phyllodes tumor, slides and blocks from outside were reviewed and 2 cases were phyllodes tumor. FNAC of 1 case was reported as phyllodes done outside. No preoperative investigations were done in 4 cases. Majority of the patients (46.67%) underwent wide local excision followed by lumpectomy and mastectomy (23.33%) followed by simple mastectomy (6.67%). Final HPE reported as benign (66.67%), malignant is 20% and borderline is 13.33%. 8 cases (26.67%) have recurrence (4 of which had been operated previous outside our hospital) and no recurrence among 22 cases (73.33%). Phyllodes tumor is a rare tumor with high chances of recurrence need to be correctly diagnosed pre-operatively and wide local excision would the ideal choice of surgical treatment.*

Keywords: *Phyllodes, cystosarcoma, Clinicopathological study, breast tumour*

I. Introduction

Cystosarcoma phyllodes is defined as a distinctive fibroepithelial neoplasm of breast tissue. It is a rare tumor representing 2.5% of all fibroepithelial lesions of the breast and with incidence of 0.3 – 0.5 % of female breast tumors [1]. In addition the qualifying adjectives 'benign' or 'malignant' have been prefixed to the diagnosis. Treves and Sunderland in their study also added a 'borderline' group, in which the neoplasm manifests changes short of overt malignancy. [2] Phyllodes tumor presents as large sometimes massive tumor with an unevenly bosselated surface and is mobile over the chest wall. Depending upon the histological features these tumors may be benign (less than 4 mitosis PHF), borderline (5 – 9 mitosis PHF) and malignant more than 10 mitosis PHF). [3] Other factors related to malignancy are tumor necrosis, pleomorphism, stromal hypercellularity, stromal atypism, stromal over growth as well as pushing versus infiltrative margins [4]. These factors are also correlated with high risk of recurrence and metastasis. Metastasis is rare and mainly haematogenous to lungs and bones. Lymphatic involvement is infrequent.[5,6] 20% of both benign and malignant tumors may recur.[7,8] Diagnosis is based on clinical examination, mammography/sonography and FNAC but final diagnosis is based on histological findings. Benign tumors are treated by lumpectomy while recurrent tumors, malignant tumors and massive tumor require mastectomy without axillary dissection. Adjuvant therapy with radiotherapy and chemotherapy have been attempted with minimal effectiveness. [9.10]

The objectives of the present study were to identify the incidence of phyllodes tumor, analyse the clinical presentation, and evaluate the various diagnostic investigations and the treatment modalities as well as to evaluate the recurrence rate.

II. Materials And Methods

The present study adopted an Observational descriptive study with a case series design. It include both retrospective and prospective enquiry, involving all cases of phyllodes tumor admitted to a tertiary care hospital of Udupi District during the period of January 2007 to June 2013 after obtaining Ethical clearance from the

Institutional Ethical Committee clearence. Patient details including clinical history, examination findings, investigations, surgery performed and final HPE reports were assessed from patients' files.

The cases included for the study were all histological proven cases of phyllodes tumor who underwent surgery during the period of the study. The exclusion criteria were malignant tumors of the breast other than malignant phyllodes and other benign breast disease.

III. Results

The study results showed that a total number of 30 cases of phyllodes tumor were reported in the study period. The Incidence rate was 1.42 among primary breast malignancy. The age distribution of phyllodes tumor showed that most common affected age group was 41- 50yrs with 14 cases (46.67%) and the mean age was 37.43.

TABLE 1 shows that all the cases (100%) presented with lump in breast and only six cases (20%) presented with pain associated with the lump, four patients presented with skin changes (ulcer,Peu d orange), and only three cases presented with nipple retraction and dilated veins.

The data presented in Fig. 1 shows that among total 30 cases, 14 cases presented with lump in right breast, 16 cases with lump in left breast.

TABLE 2 shows that out of the 30 cases 20 were primary cases, 10 cases already underwent some form of surgery outside before presenting to our hospital.

The data presented in TABLE 3 shows that the 43.76 % of the sampe presented with lump size of 5-10 cm. Mean tumor size was 8.1cms with standard deviation of 5.326cms

The data presented in TABLE 4 shows that FNAC was done in 14 patients of which 7 were reported as phyllodes tumor, Trucut done in 7 cases 6 of which were suggestive of phyllodes tumor, slides and blocks from outside were reviewed and 2 cases were phyllodes tumor. FNAC of 1 case was reported as phyllodes done outside. No preoperative investigations were done in 4 cases.

Imaging studies were done in 6pts, 5 patients underwent Mammogram – BIRADS II – 2 , BIRADS III – 1, BIRADS IV- 2, One case underwent USG – Large vascular tumor.

Data presented in Fig. 2 shows that majority of the patients (46.67%) underwent wide local excision followed by mastectomy (30%) and then Lumpectomy (23.33%). 2 patient underwent Flap reconstruction.

The data presented in TABLE 5 shows that most of the cases under the study belongs to benign category (66.67%), malignant is 20% and borderline is 13.33%.

The data represented in Fig. 3 shows that only eight cases (26.67%) have recurrence (four of which had been operated previous outside our hospital) and no recurrence among 22 cases (73.33%). Among eight recurrent cases three cases were benign phyllodes, one borderline and four cases of malignant Phyllodes.

IV. Figures and Tables

TABLE 1: Mode of presentations of phyllodes tumor n=30

	No of cases	
Presentations	**Frequency (f)**	**Percentage (%)**
Lump	30	100
Pain	6	20
Nipple retraction	3	10
Skin changes	4	13.33
Dilated veins	3	10
Bosselated surface	3	10

TABLE 2: Presentation of phyllodes tumor presenting to our hospital n=30

	No of cases	
Presentation	**Frequency (f)**	**Percentage (%)**
Primary	20	66.67
Recurrent	10	33.33

TABLE 3: Lump size of phyllodes tumor n=30

	No of cases			
Lump size (cm)	**Frequency (f)**	**Percentage (%)**	**Mean Size(cm)**	**Standard Deviation**
<2	3	9.38		
2-5	7	21.86		
5-10	14	43.76		
>10	8	25	8.10	5.326

TABLE 4: Diagnostic innvestigations of phyllodes tumor: n=30

Pre op investigation	No. of cases Frequency (f)	Percentage (%)	Pre op diagnosis of phyllodes tumour
FNAC	14	46.67	7
TRUCUT	7	23.33	6
Slides and block review	4	13.33	2
Outside report	1	3.33	1
No investigations.	4	13.33	NA

TABLE 5: Final Histopathology Examination Reports of Samples: n=30

HPE Report	No of cases Frequency (f)	Percentage (%)
Benign	20	66.67
Borderline	4	13.33
Malignant	6	20

TABLE 6: Comparison of pre-op diagnosis, surgery underwent, Final HPE and recurrence:

Primary/ Recurrent	Age (yrs)	Pre op Tissue Diagnosis	Primary surgery	HPE	Surgery for recurrence	
Primary	35	FA	Mastectomy	Benign phyllodes	WLE+ Flap	-
Recurrent	42	ND	Mastectomy	Malignant phyllodes	WLE	-
Primary	41	BPD	Lumpectomy	Benign phyllodes	Mastectomy	WLE + SSG
Recurrent	37	Phyllodes	Lumpectomy	Benign phyllodes	Mastectomy	
Recurrent	52	Phyllodes	Mastectomy	Malignant phyllodes	BCS (opposite breast) + *Chemotherapy	-
Primary	45	Phyllodes	WLE	Malignant phyllodes	Mastectomy	-
Recurrent	37	phyllodes	WLE	Benign Phyllodes	WLE	-
Primary	42	ND	Lumpectomy	Malignant Phyllodes	WLE	Mastectomy

FA: Fibroadenoma, BPD: Benign Proliferative Disorder, WLE: Wide Local Excision
BCS: Breast Conservative Surgery, ND: Not Done
* 1 patient presented with skeletal metastasis, for which palliative chemotherapy Doxorubicin and cisplatin – Doxorubicin 25 mg/m^2/day IV bolus for 3 days with Cisplatin 100 mg/m^2 (160mg) on day #1 for 6 cycles monthly. No local recurrence noted during follow up.

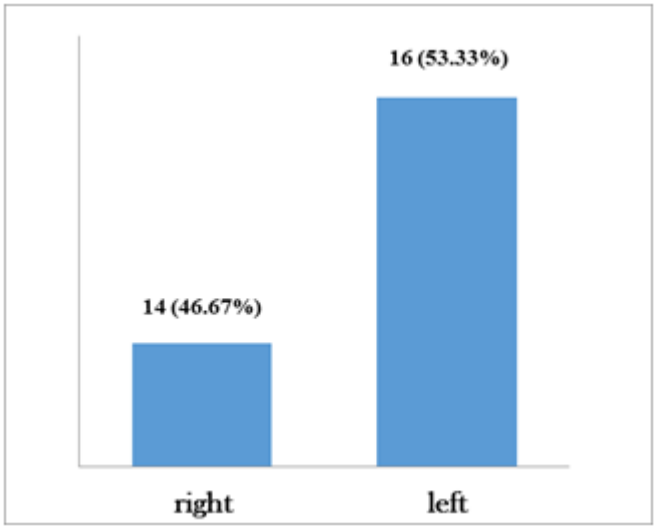

Figure 1: Bar diagram shows Laterality of phyllodes tumor:

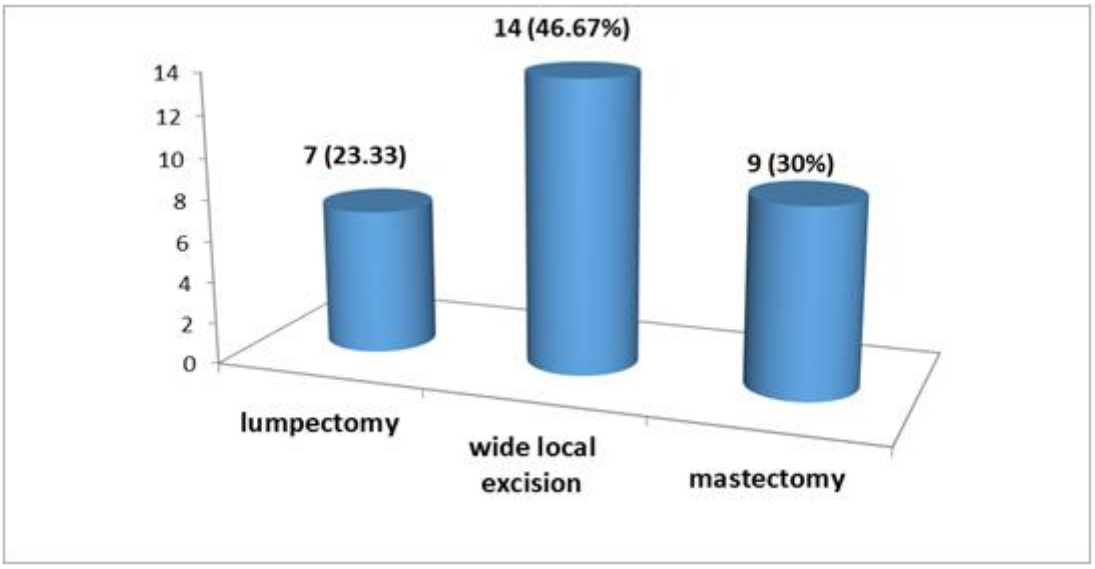

Figure 2: Cylindrical diagram shows Treatment of phyllodes tumor:

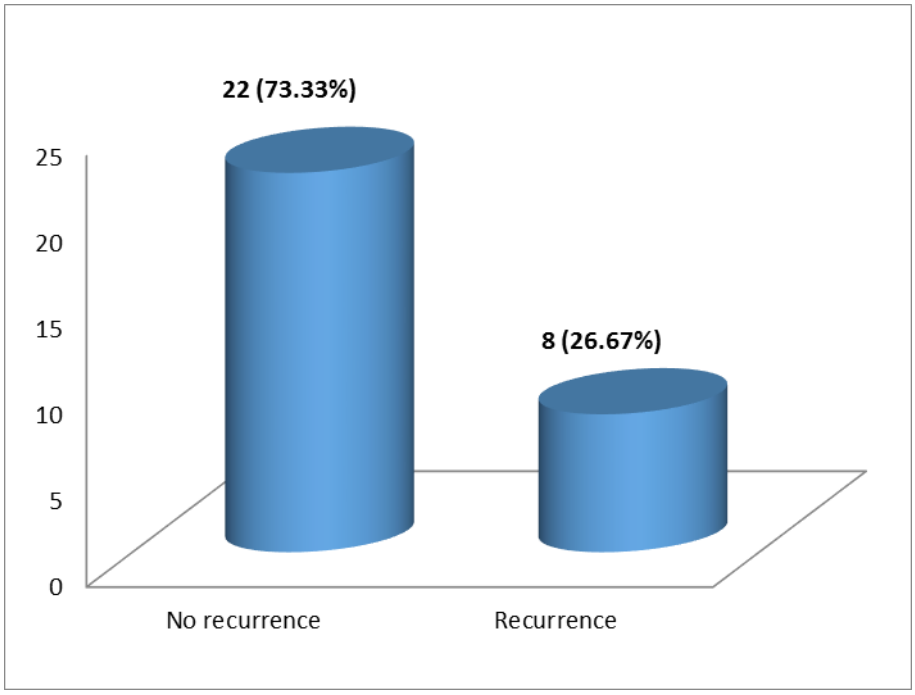

Figure 3: Cylindrical bar diagram shows Recurrence of phyllodes tumor:

V. Discussion

The present study was designed to assess the clinicopathological data related to phyllodes tumor.

Variables	Akin M[11] et al (n=10)	Shahida Khatoon[12] et al (n=35)	Ben Hassuna[13] et al (n=106)	Matar N[14] et al (n=41)	Present study (n=30)
Incidence	1 %	NA	NA	0.46%	1.42%
Mean age	45.5yrs	24	39.5yrs	30yrs	37.43yrs
Median tumor size	29 mm	NA	83mm	120mm	60mm
HPE – Benign	6 (60%)	23(67.5%)	62 (58.4%)	NA	20 (66.67%)
Borderline	3 (30%)	5(14.3%)	16 (15%)	NA	4 (13.33%)
Malignant	1 (10%)	7 (20%)	28 (26.4%)	NA	6 (20%)
Lumpectomy	NA	9 (25.7%)	82(77.35%)	48%	7 (23.33%)
Wide local excision	NA	NA	NA	NA	14(46.67%)
Mastectomy	NA	26 (74.3%)	24 (22.64%)	52 %	9 (30%)
Rate of recurrence	0	1(2.85%)	13 (12.2%)	11	8(26.67%)
Death	NA	NA	NA	3	NA

VI. Conclusion

Phyllodes tumor is an uncommon breast tumour, incidence rate in our study was 1.42%. Common in the age group of 41- 50yrs, benign type was seen in younger age group and the malignant variety was seen in the elderly. Benign phyllodes being the most common type, most common presentation was a painless lump in breast. Wide local excision was the most common surgery performed. Recurrence was noted in 26.67%, most probably due to inadequate margin clearance, due to absence of preoperative tissue diagnosis.

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