Phyllodes Tumor Increase in Size was Associated with Increase Chances of Malignancy Older Age Group Patients

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ABSTRACT

Background: Phyllodes tumors are fibroepithelial neoplasm previous known as cystosarcoma phyllodes. These tumor are rare comprising <1% of all breast neoplasms. Phyllodes are classified into three categories into benign, borderline and malignant.

Objective:

To evaluate Benign, borderline and malignant phyllodes tumors frequency in different age groups.

To correlate tumor size across all three categories of phyllodes tumor.

Material and Methods: This was a retrospective study carried out at Liaquat National hospital, between 2008 to 2016.The age was divided into three categories, =25 years, 25 to 45 years and = 45 years. The benign, borderline and malignant phyllodes tumor categories were analyzed using SPSS version 21 for tumor size and frequency across age groups .The data was archived from patient's medical records available at department of histopathology.

Results: Our finding show significant correlation of tumor size within each category of PT and similarly across age groups. The benign tumors are common in younger age and malignant tumors in older age. The average size of benign phyllodes tumor is smaller than borderline and malignant phyllodes tumor.

Conclusion: Rising trend of malignancy is noted with increase in tumor size and older age.

Key words: *Benign phyllodes tumor ,borderline ,malignant phyllodes tumor.*

This article may be cited as: Mumtaz S, Hussain FZ, Gulzar R, Moiz A, Fareedi N. Phyllodes Tumor increase in size was associated with increase chances of Malignancy older age Group Patients. J Saidu Med Coll Swat 2019;9(2): 262-4.

INTRODUCTION

Phyllodes tumor represent < 1% of all breast neoplasms. The term phyllodes was first coin by Johannes Muler in 1838 as cystosarcoma phyllodes. The term is a misnomer because no all tumors behave in malignant fashion, most are indolent with few case show local recurrence and even fewer cases with metastasis. World Health Organization classifies PT into benign, borderline and malignant tumors[1]. In our study we correlated age with these three categories of PT and compare them with for tumor size and age of presentation.

MATERIAL AND METHODS

This was a retrospective study carried out at Liaquat National hospital, between 2008 to 2016.The age was divided into three categories, =25 years, 25 to 45 years and = 45 years. The benign, borderline and malignant phyllodes tumor categories were analyzed using SPSS version 21 for tumor size and frequency across age groups .The data was archived from patient's medical records available at department of histopathology.

RESULTS

We analyzed a total of 138 cases of PT diagnosed in span of 8 years. The patient's age ranged from 9 to 71years with mean age at diagnosis being 33 years. A total of 53 patients, were =25 years, 57 patients were in age group 26 to 45 years and 28 patients above 45 years. When PT was categorized into World Health Organization criteria 67 patients (47%) were benign, 45(38%) patients were borderline, and 26(18.8%) patients were malignant. In benign PT average age was 26 years; while in borderline and malignant PT it was 38 and 43 respectively (see Table.no I ,II, III). The PT grade change from benign to malignant was observed with increase in age and this was statistically significant when compared across the three age groups(Table IV). The benign tumor was common in =25 years, borderline in 26 to 45 years and malignant in =46 years. The right and left breast involvement was almost similar 70 cases, and 68 cases respectively.

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Received: February 02, 2019 , Accepted: December 12, 2019

Table no: I Benign phyllodes tumor correlation of tumor size and age groups.

	≤25 years (n=6)	26-45 years(n=27)	>45 years
Mean ± SD	18.6 ± 3	35.6 ± 5	57.3 ± 9
Median	19	35	55
Range	16	17	23
Minimum	9	28	48
Maximum	25	45	71

Table no II Age groups according to borderline category of phyllodes tumor.

	≤25 years (n=6)	26-45 years(n=27)	>45 years(n=12)
Mean ±SD	20.8 ± 2.71	37.1 ±6.0	51 ±42
Median	21	39	49.5
Range	7	19	19
Minimum	18	26	46
Maximum	25	45	65

Table no III. Malignant phyllodes tumor correlation of tumor size with age.

	≤25 years (n=3)	26-45 years(n=13)	>45 years(n=10)
Mean ± SD	22.3	38.7	54.7
Median	22	40	53
Range	1	12	22
Minimum	22	31	48
Maximum	23	43	70

Table No IV Phyllodes tumor tumor size in benign, borderline and malignant phyllodes tumors.

	Benign (n=67)	Borderline (n=45)	Malignant (n=26)
Mean ± SD	5.30 ± 2.7	8.16 ± 3.9	10.54 ± 6.5
Median	4.40	7.50	9.90
Range	11.5	19.5	34
Minimum	1	1.5	1
Maximum	12.5	21	35

DISCUSSION

The present study was aimed at documenting the statistics of phyllodes tumor diagnosed in Pakistani population and compares various categories of phyllodes tumors with tumor size and age. PT may occur at any age, with peak incidence between 30 to 40 years[2,3,4]. In our study overall median age at diagnosis when including all cases of phyllodes tumor was 33years.Benign phyllodes tumor was seen in 67patients (48%) followed by borderline phyllodes tumor 45 (35%) and least common were malignant tumors seen in26 patients (18.8%%).Benign cases comprised majority of PT in our study similar to other international studies [2,4,5]. When comparing borderline and malignant PT there is variation reported with few of the authors reporting malignant PT more common than borderline PT cases[4] while, almost equal incidence of borderline and malignant PT was reported by authors Jae Hyuck and Min Young in study conducted at Seoul Korea[5].

In our study benign tumors was diagnosed at mean age of 26 years, borderline cases in 38years and malignant PT in 43 years. Higher frequency of malignancy with increase in age was similar to as reported by Hui W et-al [6] and study conducted by authors Bumper HL et-al in African American women, in which they reported mean age of benign cases was 33 years, while in malignant PT mean age was of 54 years.

Similar to our findings authors Bumpers HL etal also reported average tumor size for malignant cases were double the size of benign PT[7, 8]. Contrasting findings to our study was reported by authors Toh YF,et al study showed no significant difference in age when compared in all three categories of PT[9] .In study they compared histopathological parameters and demographics of Asian population ,with diverse profile of patients belonging to Chinese, Malay,indian and Indonesian. Toh YF study was conducted in small cohort of patients with diverse ethnicity which may have affected the end results. Both right and left breast had almost equal risk of phyllodes tumor in our study and by various international studies[9].

In our institution local excision was performed for 65 benign, 38 borderline and 12 malignant tumors. Mastectomy was done in 2 benign, 7 borderline and 14 malignant cases of PT.

We report benign PT cases are the most common group in our study and increase in tumor size confers increase chances of malignancy in PT similar to international data[5,7,9]. The limitation in our institution was follow-up data was not avaible. As PT is a diverse group with variable outcomes, we recommend comprehensive studies to analyze the incidence and patterns of distribution of phyllodes tumor with follow-up in this developing part of the world. We also recommend molecular studies for identification of targeted genes and pathways responsible for recurrences in some patients.

CONCLUSION

Rising trend form benign to borderline and malignancy significantly correlated with older age group, and larger tumor size.

Acknowledgment:
Authors would like to thank all the faculty and staff of histopathology department Liaquat National hostpital, Karachi for their support.

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