

MAMMOGRAPHIC AND SONOGRAPHIC FEATURES IN PHYLLOIDES TUMOURS

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ABSTRACT

The imaging features of five cases of histopathologically proved phylloides tumours have been reported. Tumor size ranged from 3-16 cm. (mean = 8 CM). Mammographic findings included; well-defined, macrolobulated mass with radiolucent halo, either complete or incomplete. None of them showed associated calcification, skin change or pathologic axillary lymph node. Two showed very large masses, replacing almost entire breast, which one of them occurring in the pregnant woman. Sonographic findings included; heterogenous-coarse, low-level echoic solid mass, well-defined border, macrolobulated contour and minimal posterior acoustic enhancement. Intramural cysts or intramural hypoechoic area, which suggested the characteristic feature of phylloides were seen in 4 cases (80%). These cysts were mainly located at the peripheral region of mass. Color Doppler sonogram was performed in 2 cases. Both of them showed increased vascular flow.

INTRODUCTION

Phylloides tumor is a combined fibroepithelial tumor, like fibroadenoma, but it has stromal component that more hypercellular than fibroadenoma.¹ Clinical and imaging findings cannot be definitely distinguish between two of them. The purpose of this study is to evaluate the imaging features of phylloides tumor. If the diagnosis could be established, the proper surgical treatment should be gained in order to reduce the recurrent rate.

MATERIALS & METHODS

Five cases of histopathologically proved phylloides tumours in Chulalongkorn hospital between 1993-1998 were retrospectively analyzed in aspect of clinical findings and imaging features, related with histopathology. All cases had mam-

mography and sonography performed. Color Doppler was done in 2 cases. Mammogram was examined by GE and Benette equipments in standard MLO and CC views, additional views including spot compression and magnification were necessary for the uncleared lesion. Sonogram was examined by Acuson and GE logic 700, using near field probe (7-13 MHz). Clinical details were including patient's age and symptoms.

Histopathological slides were reviewed and classified into benign, borderline and malignant grading. Mammogram was reviewed by two experience radiologists to determine a mass configuration, density, size, associated calcification as well as axillary nodal status. Sonogram was reviewed to determine the internal echogenicity, margin, size, presence or absence of intramural

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cystic areas, calcification and posterior acoustic properties.

RESULTS

Results were shown in table 1 and 2. The age of patients showed a wide range from 25-61 year-old (mean = 38.5 yrs.). All cases presented with a palpable painless lump of varied sizes; 3-4 cm in 2 cases, 7x8 cm in 1 case and large size occupying almost entire breast in 2 cases. One of the large entire breast mass was a pregnant woman. Mammographic findings showed hyperdense mass in 3 cases (Fig. 1A,B) and isodense mass in 2 cases (Fig. 2). All cases showed macrolobulated con-

tour and well-defined margin. Four cases showed radiolucent halo rim, either complete or incomplete. None of them had calcification or pathologic node. Sonographic findings showed heterogenous-coarse hypoechoic mass with well-defined margin, macrolobulated contour and minimal posterior acoustic enhancement in all cases (Fig.3). Two had echoic rim and edge shadowing features. Four cases showed mass containing small low echoic area (s) or intramural cyst (s) (Fig. 4). Increased vascularity was found in 2 cases by color Doppler study (Fig.5). Histological grading revealed benign in 3 cases and borderline in 2 cases. No malignant case was found in this study.

TABLE 1. Mammographic findings.

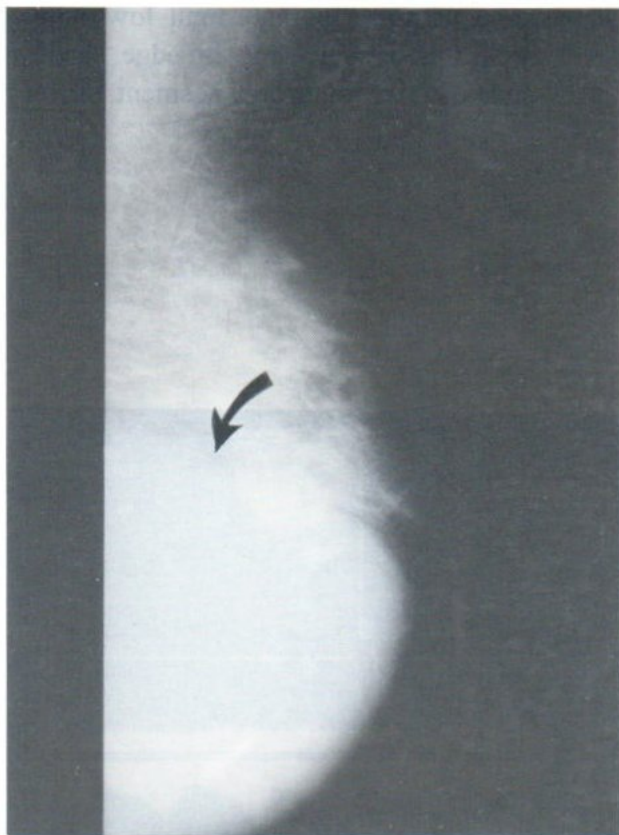
No. of cases	1	2	3	4	5
Side of Breast	Right	Right	Left	Right	Left
Location	Entire	Entire	UOQ	UOQ	LIQ
Size	10 x 6	16 x 8	3 x 4	3x 2.5	7 x 8
Shape	-	-	Oval	Round	Oval
Contour	Macro L.	Macro L.	Macro L.	Macro L.	Macro L.
Margin	Well-D.	Well-D.	Well-D.	Well-D.	Well-D.
Radiolucent Halo	No	Incomplete	Incomplete	Complete	Incomplete
Mass density	Hyperdense	Hyperdense	Isodense	Isodense	Hyperdense
Calcification	No	No	No	No	No
Skin change	No	No	No	No	No
Axillary LN.	No	No	Yes	No	No
			(benign)		

TABLE 2. Sonographic findings

No. of cases	1	2	3	4	5
1. Echogenicity	hypoechoic	hypoechoic	hypoechoic	hypoechoic	hypoechoic
2. Internal echo pattern (echo texture)	heterog.-coarse	heterog.-coarse	heterog.-coarse	heterog.-coarse	heterog.-coarse
2. Margin	Well-D.	Well-D.	Well-D.	Well-D.	Well-D.
3. Echoic rim	No	Yes	Yes	No	No
4. Edge shadowing	No	No	Yes	Yes	No
5. Post. enhancement	Yes	Yes	Yes	Yes	Yes
6. Calcification	No	No	No	No	No
7. Vascularity	-	-	Increased (RI= 0.6)	Increased (RI= 0.5)	-
8. Anechoic cyst,cleft or intramural hypocho	Yes	No	Yes	Yes	Yes

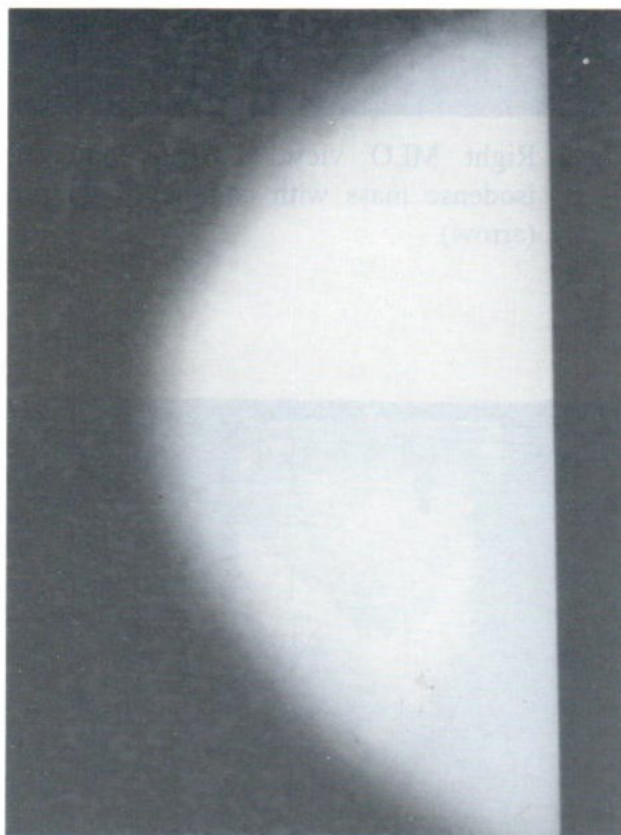
Note ; Macro L. = Macrolobulated contour
Well-D. = Well-defined margin

Heterog. = Heterogenous
- = Not performed



1A.

Fig. 1A. Left MLO view shows a hyperdense mass with well defined border. (arrow)



1B.

Fig. 1B. Right CC view shows huge hyperdense mass occupying the whole breast in the pregnant women.



Fig. 2. Right MLO view shows a lobulated isodense mass with complete halo rim (arrow)



Fig. 3. Ultrasound of left breast shows a lobulated low echoic mass, heterogenous coarse echo texture, internal small low echoic areas thin echogenic rim with edge shadow and posterior sound enhancement. (arrow)



Fig. 4. Ultrasound of left breast shows a heterogeneous low echoic mass with intramural cyst at margin. (arrow)

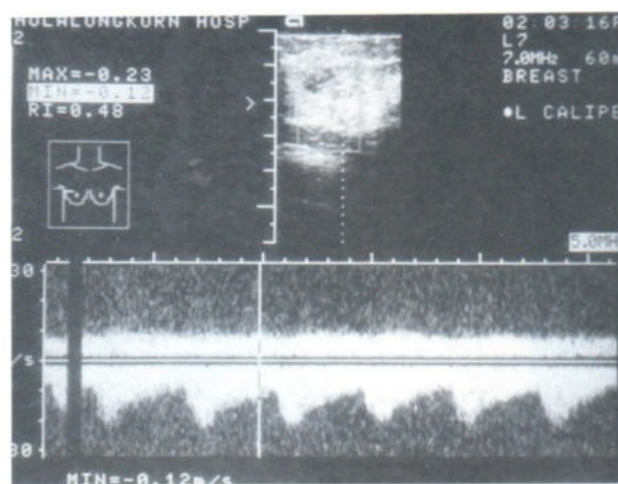


Fig. 5. Color doppler study shows increased vascularity in the mass.

DISCUSSION

Phylloides tumor is a rare tumor, accounting for 1-2 % of breast neoplasm.² It was first described by Johannes Muller in 1838,³ being a combined fibroepithelial tumor. This tumor occurs over a wide age range.⁴ There is a wide range of tumor's size.⁵ Local recurrence occurs in approximately 20% of cases, usually due to incomplete surgical excision.⁶ Histogenesis of phylloides tumor and fibroadenoma appear to be closely related.⁷ Clinical and radiological findings could not be definitely distinguish phylloides from fibroadenoma, either in mammography or sonography, because both of them show a benign-appearing mass.⁸ However, large phylloides tumors usually are diagnosed correctly on the mammogram due to their size.⁸

In smaller tumors, differential diagnosis is necessary including fibroadenoma, cyst and even well-circumscribed carcinoma.⁸ The density of the mass could be presented both hyperdense and isodense. Sonographic findings typically revealed a well-defined solid mass, containing weak to intermediate echo, which is resemble fibroadenoma or others benign tumors.⁹ But all of our cases showed coarse low-level echogenicity and posterior acoustic enhancement, possibly related to the increased cellularity of the tumors. The thin echoic rim and edge shadowing were found in 2 cases, in which these findings could be benign and malignant features. Presenting of cystic or cleft-like space within a large, lobulated solid mass in sonogram should indicate the diagnosis of phylloides tumors.⁸

In 1991, Buchberger et. al., reviewed 10 cases of phylloides tumors in mamogram and sonogram. Six cases (60%) of benign disease contained 3-10 mm in diameter of intramural cysts.

In our study, 4 cases (80%) contained intramural cysts. According to the study of Buchberger et. al, single or multiple cystic cleft-like space (s) in the mass is characteristic (but not pathognomonic) of phylloides tumors.

Grading of tumors is impossible by imaging.⁸ Differentiation of benign, borderline and malignant is based on microscopic features only.¹⁰ In 1996, Laura et.al. reviewed 51 cases of both benign and malignant phylloides tumors.¹¹ Tumors 3 cm or greater in diameter at mammogram are more statistically significant have malignant grading. In contrast to our study, all cases; both small and large-entire breast masses, none of them were malignant.

Color Doppler sonogram was performed in 2 cases, both of them revealed increased vascularity. This findings paralleled to the study of De Albertist et. al. in 1995. However, this finding of increased vascularity is not the specific feature for phylloides tumors.

In conclusion, by mammography, the phylloides tumours usually present with a large lobulated mass, well-defined border, halo rim and hyper-or isodensity. By sonography, the mass often shows heterogenous coarse echoic mass, well-defined border, lobulated contour and especially containing intramural cyst. The features of coarse echogenicity, lobulated contour, echoic rim and edge shadowing were found in our cases that also being the malignant features. The evidence of intramural cyst (s) could help to diagnose phylloides tumor correctly. Lastly, all masses contain no calcification and lack of secondary metastatic sign.

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