FINDINGS ON MAMMOGRAPHY AND SONOGRAPHY OF PHYLLODES TUMOR AND FIBROADENOMA. REVIEW ARTICLE.

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Patient: 18 years, female

Clinical History:

The purpose is to presented the findings of phyllodes tumor - benign, borderline malignant and malignant - in mammography, ultrasound, doppler ultrasound, from our experience and the current literature, and the differential diagnosis from the fibroadenoma.

Imaging Findings:

Five patients of age 21-55 years old, arrived in the radiological department of hospital of Syros and underwent in clinicolaboratory examination because of palpable mass in the breast. In the clinical examination revealed a palpable mobile mass, lobulated, with smooth margin, painless, without adhesions with the surrounding tissues and the skin. They underwent in low dose mammography and ultrasonography. The findings in the U/s were: hypoechoic lesions with smooth margin, lobulated shape, with small cystic like spaces and posterior acoustic enhancement (Fig 2a). One lesion had fewer than four lobulations and ovoid shape. The others lesions had more than four lobulations (Fig 2b), but one of them had spiculations, angular margins (Fig 2c) and acoustic shadowing and was taller than wide. The findings in the LDM were: nonspiculated dense masses with lobular margin, without microcalcifications. In two of the five patients the mass had progressive increase of the size (Fig 1a,b,c). The findings classified with base the ACR in BI-RADS 5 and the patients underwent in surgical treatment. The results were: in 3 patients revealed phyllodes tumor (Fig 3a,b,c,d), in 1 patient revealed fibroadenoma and in 1 patient ductal carcinoma of the breast. The findings of the lesions on mammography and ultrasonography corellated with those who reffered in the current literature.

Discussion:

Phyllodes tumor is a rare breast neoplasm representing 0,3% to 1% of all breast tumors. It mostly appears during the 5th or 6th decade as a large, benign, palpable breast mass but with an unpredictable clinical behavior. It is a locally invasive tumor which rarely metastasizes. The findings in the LDM and U/s of the phyllodes tumor are no specific, but they are presented and in another benign and malignant lesions of the breast like fibroadenomas. The phyllodes tumor presented in women older than those who have fibroadenoma. The patients with phyllodes tumors in the literature were aged 31-50 years while the patients with fibroadenomas were aged 21-40 years. Phyllodes tumors were larger than fibroadenomas. The phyllodes tumors are usually lobulated while the fibroadenomas are oval (77% vs 79,5%). The clinical findings of phyllodes tumors usually are: large, firm, non-tender well defined mobile tumours with oval or lobulated margin. The gradual growth should lead to a suspicion of
a phyllodes tumor. The tumor was classified according to international criteria of three types\(^4\): benign cystosarcoma phyllodes, borderline type tumor and malignant tumor. Mammographically\(^1,2\) mostly is presented as a dense nonspiculated, rounded or lobulated mass without calcifications. The tumor is 1-20 cm in diameter. Tumors 3 cm or larger were statistically significantly more likely to be malignant phyllodes\(^5\). Ultrasonography\(^3\) discloses a well-defined mass hypoechoic with well-defined margin, lobulated contour and posterior acoustic enhancement. Intramural cystic areas\(^3\) were significantly more likely to be phyllodes tumors than fibroadenomas. Hypoechoic cystic areas\(^5\) were more often seen in malignant than in benign tumors, but the difference was not statistically significant. The color Doppler characteristics\(^7\) (RI > 0.700, P.I. > 1.300, Vmax > 15 cm/sec) were of no significant use in predicting the histological nature of the phyllodes tumors. There are no reliable criteria allowing distinction between benign and malignant phyllodes tumors. Differentiation of benign malignant and borderline tumors is based only on microscopic findings. Phyllodes tumors are fibroepithelial tumors of the breast. In statistical analysis evidence of tumor necrosis, stromal atypism, stromal cellularity, number of mitoses and stromal overgrowth were found to be significantly correlated with malignancy\(^8\). Transformation of its stroma into different types of malignant mesenchymal sarcoma can occur - fibrosarcoma. Our results and the review of the literature lead to the following therapeutic recommendations: Breast-conserving surgery is the treatment of choice for all benign lesions\(^4\). For borderline and malignant lesions wide excision with a clear margin may be the preferable initial therapy\(^4,12\). The excision with a wide margin reduces the rate of recurrence. Routine axillary lymph node dissection is not recommended. Patients with infiltrating tumor margin, severe stromal overgrowth, mitotic activity, atypia and cellularity are at high risk for metastases\(^12\).

Differential Diagnosis List: Phyllodes tumor is diagnosed with base the histologic findings.

Final Diagnosis: Phyllodes tumor is diagnosed with base the histologic findings.

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Figure 1

Description: Dense mass with lobulations without microcalcifications. Origin:

Description: LDM: the same patient. Progressive increase in the size. Lobulated mass with well defined margin. Origin:
Description: LDM: the same patient. The diagnosis was phyllodes tumor. Origin:
Figure 2

a

Description: Stroma with phyllodes lobulations covered from epithelium - phyllodes tumor. (x25)

Origin:

b

Description: Phyllodes tumor. Stroma rich in cells, more than a typical fibroadenoma (x100).

Origin:
Description: Phyllodes tumor. Stroma with spindle like large cells (x200). Origin:

Description: The stromatic cells revealed mitotic activity but not nucleus pleomorphy (x400). Origin:
Figure 3

a

Description: U/s: hypoechoic lesion with smooth margin, intramural cystic areas, posterior acoustic enhancement. Phylloides tumor. Origin:

b

Description: U/S: hypoechoic mass with lobulations - more than four - and angular margin. Malignant mass - ductal carcinoma. Origin:
Description: Hypoechoic mass with calcifications, microlobulations, angular margin and posterior acoustic shadow. Malignant mass. Origin: