

Malignant phyllodes tumor of the breast: case report

JULIANA ALVES DE SOUZA¹, ELVIRA FERREIRA MARQUES¹, CAMILA GUATELLI², DEÍSE SANTIAGO GIRÃO¹, THIAGO QUEROZ², LUCIANA GRAZIANO¹, MARIANA MACEDO³, HIROFUMI IYAYASU⁴, RUBENS CHOJNIAK⁵

¹ Physicians; Department of Image, Hospital AC Camargo, São Paulo, SP, Brazil

² Physicians; Interns, Department of Image, Hospital AC Camargo, São Paulo, SP, Brazil

³ Physician; Intern, Department of Pathology, Hospital AC Camargo, São Paulo, SP, Brazil

⁴ PhD in Oncology; Department of Mastology, Hospital AC Camargo, São Paulo, SP, Brazil

⁵ PhD in Oncology; Director, Department of Oncology, Hospital AC Camargo, São Paulo, SP, Brazil

Study conducted at Hospital AC Camargo – Department of Image, São Paulo, SP, Brazil

Correspondence to: Juliana Alves de Souza – Rua Prof. Antônio Prudente, 211 – São Paulo – SP – CEP: 01509-010 – julianaalves79@hotmail.com

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INTRODUCTION

Phyllodes tumors are rare fibroepithelial breast tumors, which are sometimes difficult to preoperative diagnoses and have unpredictable clinical outcome. These tumors must be suspected in patients with rapid-growing breast nodules, to avoid inappropriate management.

CASE REPORT

A 38-year-old female patient presented a 12-month history of palpable mass on the right breast, with accelerated growth in recent months. There were no personal or family history of breast cancer. This patient was submitted to the exeresis of a nodule in the right breast two years prior in another service, but the material was not available for histopathological revision.

Physical exam presented protruding and hardened palpable mass occupying the upper quadrants of the right breast, with accentuated vascularization and periareolar scar (Figure 1). Signs of cutaneous involvement or axillary lymphadenomegaly were not evidenced.

During the diagnostic investigation, the patient was

submitted to mammography and ultrasound. Mammogram showed multiple, hyperdense rounded masses with well-defined margins in the right breast (Figure 2). Ultrasound evidenced in the same topography rounded confluent masses and of well-defined and regular contours, with heterogeneous echotexture and cystic areas in its interior, posterior acoustic enhancement and internal flow to color-flow Doppler examination (Figure 2).

Ultrasound-guided percutaneous biopsy (core biopsy) was performed on the breast lesion, whose anatomopathologic examination showed biphasic neoplasm with malignant stromal component.

Thorax x-rays and abdominal ultrasound were performed for staging, which showed no significant alterations.

Because of the malignant result on core biopsy and the extension of the lesions, patient underwent simple mastectomy without axillary dissection. Surgical margins were free of tumor. Macroscopy evidenced a trilobulated lesion, measuring 14 x 10 x 10 cm, and the anatomopathologic analysis of the surgical specimen confirmed the diagnosis of malignant phyllodes tumor (Figure 3).

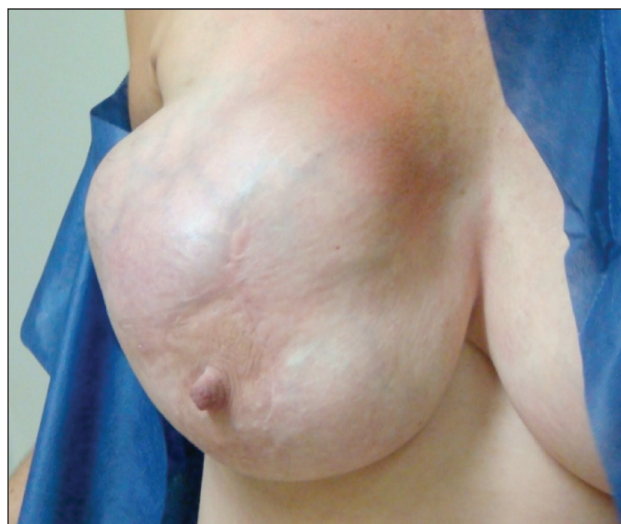


Figure 1 – Protruding and hardened palpable mass occupying the upper quadrants of the right breast, with accentuated vascularization and periareolar scar.

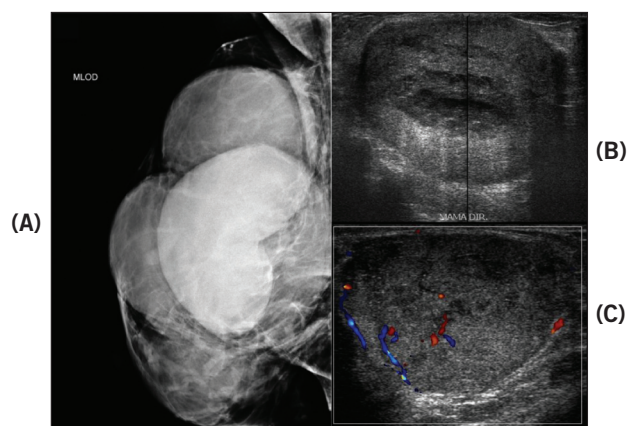


Figure 2 – Imaging findings: mammographic mediolateral oblique view showing multiple regular hyperdense masses (A). Ultrasound of right breast: multiple circumscribed masses, heterogeneous, of well-defined contours (B) and hyper-flow of interior in color-flow Doppler imaging (C).

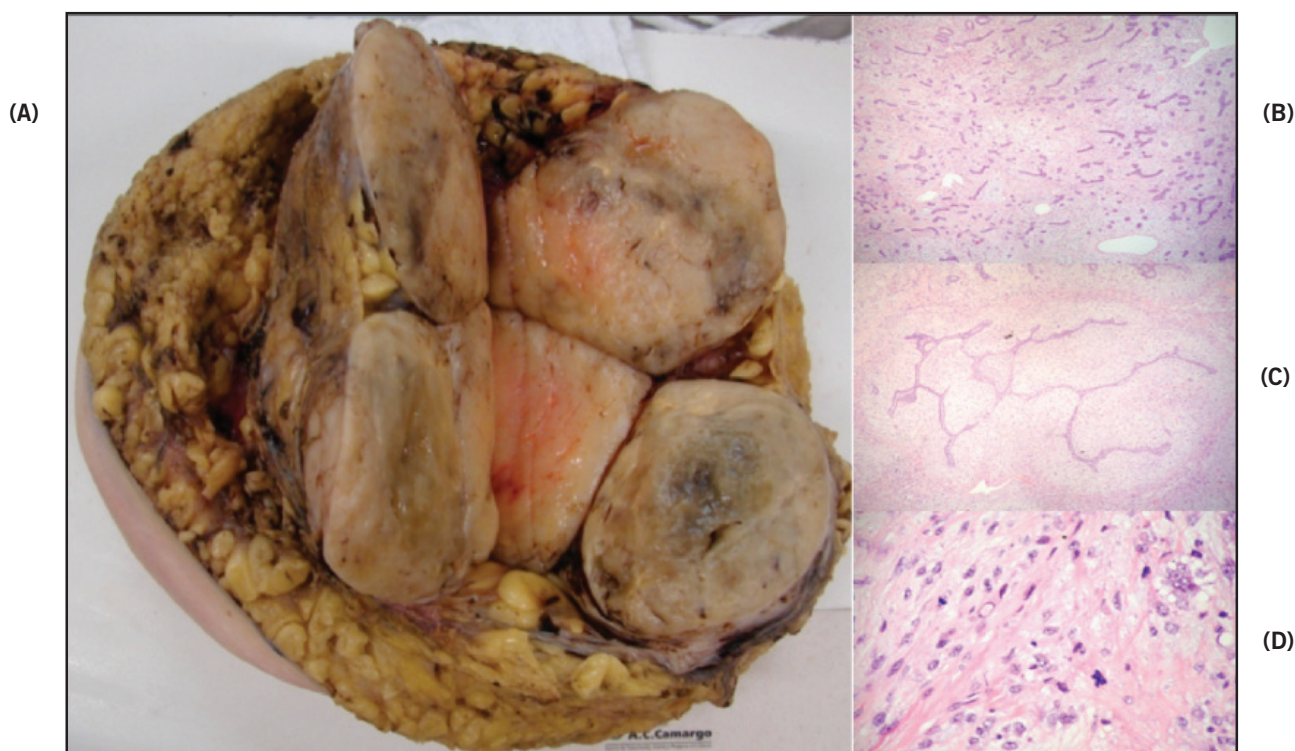


Figure 3 – Surgical specimen showing a multilobulated mass with well defined borders **(A)**. Microscopy showing epithelial and stromal proliferation and a leaf-like appearance **(B and C, H&E 10x)**; increased mitotic activity and stromal cell atypia **(D, H&E 40x)**.

DISCUSSION

Phyllodes tumors are rare lesions with an incidence of less than 1% of all breast tumors¹. Its incidence is greater in white women 35-55 years of age². Clinically, phyllodes tumors are more commonly presented as a rounded nodule, mobile, usually painless and with rapid growth.

Histologically, these tumors are biphasic lesions consisting of a stromal and epithelial components, arranged in an undulating configuration with many slit-like spaces and crevices surrounded by an increased growth of mesenchymal cells³. Its stromal part protrudes into the ductal lumen with a foliaceous aspect.

The 2003 WHO tumor classification proposed the classification of phyllodes tumors into three categories (benign, borderline and malignant)⁴ according to the degree of cellular atypia, mitotic activity, characteristics of the tumor margins and the presence of stromal growth⁵.

There are no mammographic abnormalities or ultrasonographic pathognomonic signs. In mammography, these lesions commonly present as voluminous isodense mass to breast parenchyma, usually greater than 5 cm, circumscribed, which may be associated with calcifications. In ultrasound, they are generally characterized as a solid lobulated nodule of well-defined contours, and may be associated with cystic components.⁷

Phyllodes tumors present rapid growth, however, when in smaller dimensions, it's difficult to differentiate them from fibroadenoma, including anatomopathologic aspects

of fragments obtained through core biopsy, where the main criterion for differentiation of fibroadenoma is the higher stromal cellularity presented in phyllodes tumors. There are also problems to characterize malignant forms due to its large cellularity and atypia variation, making broader samples necessary for conclusive diagnosis, even in surgical specimens. Mitotic count may also be negatively affected by the size of the fragments obtained by core biopsy and in the malignant shapes, the stromal overgrowth can result in the absence of epithelial part in the sample.⁸

The treatment for phyllodes tumors remains surgical removal of this tumor. It is essential to keep a sufficient margin of healthy tissues, which reduces the risk of local recurrence. For borderline or malignant phyllodes tumors or in cases of local tumor recurrence, mastectomy may become the preferred option. The role of adjuvant treatments is unproven and must be considered on a case-by-case basis. It is necessary to follow up the patients, because there is a risk of local and distant metastasis.⁹⁻¹¹

Therefore, it is important that radiologists be familiar with the imaging features of this pathology. We emphasize the need to consider phyllodes tumor as a differential diagnosis, mainly when solid masses with cystic areas are detected. The radiological suspicion for a phyllodes tumor already indicates surgery with wide excision, even if the confirmation on the basis of a needle biopsy is not possible, in order to avoid recurrence which may be malignant, as described above.

REFERENCES

1. Reinfuss M, Mitus J, Duda K, Stelmach A, Rys J, Smolak K. The treatment and prognosis of patients with phylloides tumour of the breast: an analysis of 170 cases. *Cancer* 1996;77:910-6.
2. Liang MI, Ramaswamy B, Patterson CC, McKelvey MT, Gordillo G, Nuovo GJ et al. Giant breast tumors: surgical management of phyllodes tumors, potential for reconstructive surgery and a review of literature. *World J Surg Oncol* 2008;6:117.
3. Kim JH, Choi YD, Lee JS, Lee JH, Nam JH, Choi C et al. Borderline and malignant phyllodes tumors display similar promoter methylation profiles. *Virchows Arch* 2009;455:469-75.
4. Bellocq JP, Magro G. Fibroepithelial tumors. In: Tavassoli FA, Devilee P, editors. *World health organization classification of tumors: tumors of the breast and female genital organs*. Lyon: IARC; 2003. p.99-103.
5. Grabowski J, Salzsrein SL, Sadler GR, Blair SL. Malignant phyllodes tumors: a review of 752 cases. *Am Surg* 2007;73:967-9.
6. Akin M, Irkorucu O, Koksall H, Gonul II, Gultekin S, Kurukahvecioglu O et al. Phyllodes tumor of the breast; a case series. *Bratisl Lek List* 2010;111:271-4.
7. Goel NB, Knight TE, Pandey S, Riddick-Young M, Paredes ES, Trivedi A. Fibrous lesions of the breast: imaging-pathologic correlation. *Radiographics* 2005;25:1547-59.
8. Aguillar VLN, Bauab SP, Maranhão NM. *Mama: diagnóstico por imagem*. Rio de Janeiro: Revinter; 2009.
9. Uchman P, Samulak D, Wilczak M, Michalska MM, Mojs E, Sajdak S. Difficulties in diagnosing and treating phyllodes tumor of the breast – case report. *Eur J Gynaecol Oncol* 2011;32:111-3.
10. Verma S, Singh RK, Rai A, Pandey CP, Singh M, Mohan N. Extent of surgery in the management of phyllodes tumor of the breast: a retrospective multicenter study from India. *J Cancer Res Ther* 2010;6:511-5.
11. Guillot E, Couturaud B, Reyat F, Curnier A, Ravinet J, Laé M et al. Management of phyllodes breast tumors. *Breast J* 2011;17:129-37.