

# USE OF THORACOEPIGASTRIC FLAP IN LARGE BREAST RESECTIONS: PHYLLODES TUMOR CASE REPORT

Utilização do retalho tóraco-epigástrico em grandes ressecções da mama: relato de caso de tumor filóide

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## ABSTRACT

Phyllodes tumors are uncommon fibroepithelial breast neoplasms capable of displaying a diverse range of biological behaviors. In their less aggressive form, they behave as benign fibroadenomas, although with a propensity to local recurrence after excision with satisfactory margins. On the other hand, they can metastasize, sometimes degenerating histologically into sarcomatous lesions. Phyllodes tumors represent less than 0.5% of all breast pathologies. They are smooth, multinodular, well-defined, firm, mobile, and painless masses of variable sizes, which can reach 40 cm in large tumors, with bright and stretched skin. When they progress to large tumor masses, they become a challenge to mastologists who need surgical satisfaction and coverage of the resected area. The use of thoracoepigastric flap has been an important surgical tool for these large breast lesions. The present study describes a case report of a large malignant phyllodes tumor that used the thoracoepigastric flap for coverage and closure.

**KEYWORDS:** Phyllodes tumor; surgical flaps; breast neoplasms.

## RESUMO

Os tumores filóides são tumores de mama fibroepiteliais incomuns capazes de uma gama diversificada de comportamentos biológicos. Em sua forma menos agressiva, comportam-se como fibroadenomas benignos, embora com uma propensão a recorrer localmente após a excisão com margens satisfatórias. Por outro lado, podem metastatizar, algumas vezes, degenerando histologicamente em lesões sarcomatosas. Os tumores filóides representam menos de 0,5% de todas as patologias mamárias. Apresentam-se como uma massa lisa, multinodular, bem definida, firme, móvel e indolor, de tamanho variável, podendo chegar a 40 cm em grandes tumores, com a pele brilhante e esticada. Quando evoluem a grandes massas tumorais, tornam-se um desafio ao mastologista que necessita da satisfação cirúrgica e cobertura da área ressecada. A utilização do retalho tóraco-epigástrico tem sido uma importante ferramenta cirúrgica para essas grandes lesões da mama. O presente estudo apresenta o relato de caso de um tumor filóide maligno de grande volume, utilizando-se do retalho tóraco-epigástrico para cobertura e fechamento.

**PALAVRAS-CHAVE:** Tumor filóide; retalhos cirúrgicos; neoplasia da mama.

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## INTRODUCTION

Phyllodes tumors are rare lesions, with an incidence of less than 1% of all breast tumors, more frequent among white women aged 35 to 55 years. Clinically, they are most commonly presented as a rounded, mobile, painless nodule of fast growth. Histologically, these tumors are biphasic lesions with epithelial and stromal components<sup>1</sup>.

The classification of the World Health Organization (WHO) of 2003 proposed cataloging phyllodes tumors into three categories (benign, borderline, and malignant), according to the degree of cellular atypia, mitotic activity, characteristics of tumor margins, and stromal growth<sup>2</sup>. Phyllodes tumors grow fast; however, when small, it is difficult to differentiate them from fibroadenomas. Characterizing malignant forms is also problematic due to their large cellularity and atypia variation, making broader samples necessary for a conclusive diagnosis<sup>3</sup>. The treatment for phyllodes tumors is surgical removal. For tumors with borderline or malignant filaments, or in cases of local recurrence, mastectomy can become the preferred option. The role of adjuvant treatments is not proven and should be considered on a case by case basis. Patient follow-up is necessary due to the risk of local and distant metastases. Patients submitted to mastectomy with significant tissue loss will certainly need a quick and safe procedure that ensures the closure of the deformity area, aiming at the coverage and survival of the flap.

Faced with these challenges, the mastologist should count with the maximum number of surgical techniques that provide surgical correction and satisfaction. This text is dedicated to the use of thoracoepigastric flap in large closures, for being a resolute, viable, and effective procedure.

The Reference Center for Women's Health of Hospital Pérola Byington, in São Paulo, analyzed all consecutive patients who underwent radical mastectomies between 2009 and 2014, and had chest wall reconstructions, having the viability of the flap and effectiveness of the surgical closure as outcome, with locally advanced breast tumors and resection area ranging from 13 to 20 cm. Out of the 29 patients, only two had wound dehiscence, which was handled without new approach<sup>4</sup>.

The flap is drawn across the thoracoabdominal region ipsilateral to the thoracic lesion, parallel to the mammary fold. The base of the flap is positioned medially from the xiphoid process to the midpoint between the latter and the umbilicus. The lateral limit is the posterior axillary line with the patient in supine position. The lateral edge of the flap must be rounded for better use<sup>4</sup>.

Other series show studies with a small number of patients, but with satisfactory results.

## METHODS

This is the clinical case report of a patient with a large malignant phyllodes tumor, surgically treated with the thoracoepigastric flap technique. The patient was assisted by the mastology team of Santa Casa de Belo Horizonte, associated with the public health system (*Sistema Único de Saúde – SUS*).

## CLINICAL CASE

The patient I.R.R was 24 years old and had her first appointment at the mastology center of Santa Casa de Belo Horizonte on April 19, 2017. She presented a voluminous mass in the right breast, stretching across the skin. The patient was being monitored by another service in the North of Minas Gerais since 2011 due to a nodule in the right breast (breast ultrasonography on March 22, 2011: 35 × 17 × 35 mm) with Fine-Needle Aspiration Biopsy (FNAB) resulting in fibroadenoma. In 2014, she underwent the first surgical intervention, with excision of the nodule, classified as fibrosclerotic stroma with no signs of malignancy. In 2015, new breast nodules with progressive growth and varying sizes were found, the major one having 6 cm in its largest axis. She underwent a new surgical approach with an anatomopathological result of benign phyllodes tumor, without atypia, with metaplasia areas and free margins. In 2016, the follow-up breast ultrasonography showed four other nodules (1; 1.2; 1.4, and 4.2 cm), leading to a new biopsy in February 2017. The result was fibroadenoma, complemented with immunohistochemical (ER+, PR-, E-cadherin-, HER2-, Ki-67 [35%]), which detected a benign phyllodes tumor. In April 2017, she visited our unit complaining of an exaggerated increase in breast size after the last biopsy and for surgical excision of the lesions.

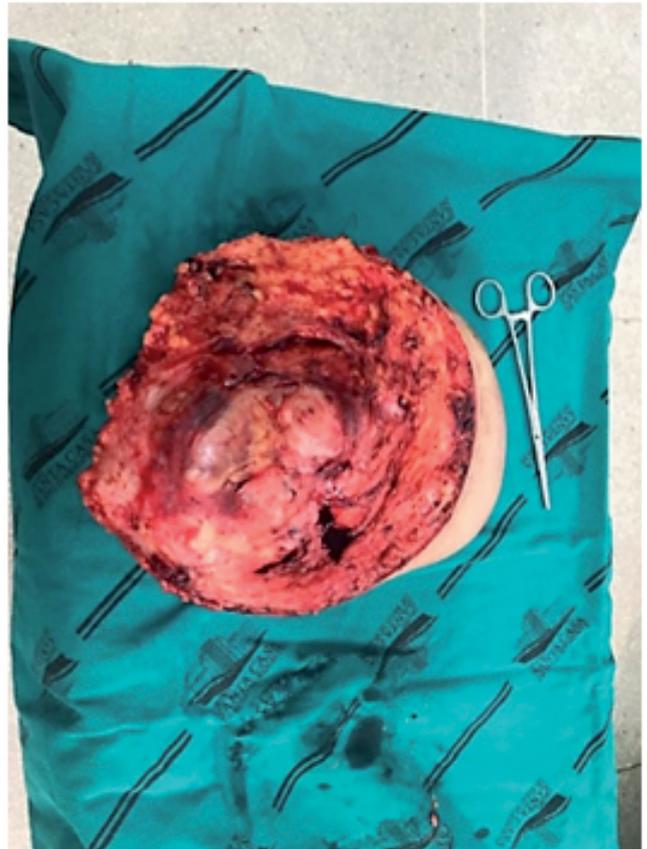
As per protocol, the patient received the Informed Consent Form (ICF) and had pictures taken for pre-, intra-, and post-operative evaluating purposes (Figures 1, 2, 3, 4, 5, 6, 7, and 8). The approach chosen was mastectomy with reconstruction using thoracoepigastric flap and, on May 12, 2017, the patient



Figure 1. Preoperative.



**Figure 2.** Preoperative: right unilateral view.



**Figure 4.** Surgical specimen resulting from mastectomy.



**Figure 3.** Mastectomy resection area.



**Figure 5.** Thoracoepigastric flap preparation and synthesis.

underwent surgical treatment. The deformity area was repaired preserving a 1.5:1 ratio and the anatomical limits, as recommended by the literature<sup>5</sup>. Axillary drainage was performed due to lymphadenopathies identified in the intraoperative period, without complications.

In the postoperative follow-up, the drains and local curative were removed with mineral oil, without flap-related complications, keeping a good aspect and with good healing progress.

The patient was monitored weekly without changes from a surgical point of view, and the anatomopathological evaluation identified a malignant phyllodes tumor of high degree, narrow posterior margin (1 mm), and reactive lymphoid hyperplasia. She was referred for clinical oncology and radiotherapy evaluation, which opted for a clinical and mastology follow-up only.

Up to the present date, she is in a quarterly follow-up, with no signs of locoregional recurrence. The technique proved to be quite versatile, with satisfactory oncological outcomes, providing a good closure of large resection areas, without damage to the donor site.

## DISCUSSION

Phyllodes tumors are uncommon fibroepithelial neoplasms, representing less than 0.5% of breast tumors, with a mean onset in



Figure 7. Thirty days after the postoperative.



Figure 6. First postoperative week.



Figure 8. Thirty days after the postoperative: left oblique view.

the fourth decade of life<sup>6</sup>. Usually, they are large, solid, multinodular, well-defined, and mobile masses of variable sizes, and those of large volume present a thinning of the skin.

Mammography detects approximately 20% of these lesions and should be complemented with ultrasonography<sup>7</sup>. In general, the lesions should be punctured (FNAB) or subjected to Core Biopsy (CB).

Surgical treatment should aim at a safety margin due to the high recurrence rate of these lesions. A multivariate analysis, which included 172 patients with phyllodes tumors, associated positive surgical margin with an almost four times higher risk of a tumor-related event, such as local recurrence or metastasis (HR=3.9, 95%CI 1.1–14.3)<sup>8</sup>. Currently, the literature recommends margins larger than 1 cm.

Axillary drainage should not be considered and is restricted to selected cases, as the greater spread is hematogenous and most axillary lymph nodes are reactive. A study with data from the Surveillance, Epidemiology, and End Results Program of the USA indicated only eight among 498 women with affected axillary lymph nodes<sup>7</sup>.

Considering these variants, the mastologist must be prepared for the surgical approach. There is no consensus on which technique is the best to use, however, for large resections, the

thoracoepigastric flap becomes a great tool for breast surgeons, as it is technically easy to perform, secure, and presents low morbidity.

The objective of this work was to make the use of oncoplastic techniques, such as thoracoepigastric flap, a practice applicable to the daily routine of surgeons. As in the case report, lesions that leave large chest wall deformities become resectable and have good closure.

Thoracoepigastric flap results in lower morbidity, shorter length of hospital stay, and low complication rates in the donor site when compared to myocutaneous flaps<sup>5</sup>.

## FINAL CONSIDERATIONS

In many situations, large breast tumors with unfavorable tumor/breast ratio, associated with the histological type and clinical conditions, lead the mastologist to decide for mastectomies involving large resections. Over time, the involvement and qualification of mastologists in oncoplastic techniques improved the surgical arsenal, considering methods that are easy to perform and targeted at each patient. Currently, the thoracoepigastric flap is an important surgical tool for the closure of large chest wall deformities, with lower morbidity and complications.

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